



# HOKKAIDO UNIVERSITY

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| Title            | Gene expression profiling of <i>Pseudomonas putida</i> F1 after exposure to aromatic hydrocarbon in soil by using proteome analysis             |
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| Type             | journal article                                                                                                                                 |
| File Information | AM_Kasahara_TS3.pdf, Supplementary Material Table S3                                                                                            |



Table S3. Proteins identified on the 1-D SDS-PAGE/LC-MS/MS in E0, E6 and E18 samples.

| E0 sample |             |                                                                       | Total no. of<br>detected<br>gel slices | Total no. of<br>accepted<br>peptides | No. of<br>unique<br>peptides | Sum of<br>macot score | % of<br>sequence<br>coverage | Sum of<br>emPAI |
|-----------|-------------|-----------------------------------------------------------------------|----------------------------------------|--------------------------------------|------------------------------|-----------------------|------------------------------|-----------------|
| Pput name | Accession # | Protein name                                                          |                                        |                                      |                              |                       |                              |                 |
| Pput_0001 | 148545260   | chromosomal replication initiation protein                            | 3                                      | 6                                    | 5                            | 184                   | 7.7                          | 0.43            |
| Pput_0002 | 148545261   | DNA polymerase III subunit beta                                       | 3                                      | 15                                   | 11                           | 515                   | 40.9                         | 2.31            |
| Pput_0004 | 148545263   | DNA gyrase subunit B                                                  | 3                                      | 11                                   | 10                           | 315                   | 9.3                          | 0.5             |
| Pput_0006 | 148545265   | integrase catalytic subunit                                           | 1                                      | 1                                    | 1                            | 27                    | 1.8                          | 0.05            |
| Pput_0009 | 148545268   | hypothetical protein Pput_0009                                        | 2                                      | 2                                    | 1                            | 107                   | 9.2                          | 0.58            |
| Pput_0022 | 148545281   | CzcA family heavy metal efflux protein                                | 2                                      | 2                                    | 2                            | 58                    | 0.9                          | 0.06            |
| Pput_0028 | 148545286   | YVTN beta-propeller repeat-containing protein                         | 1                                      | 3                                    | 3                            | 160                   | 8.5                          | 0.36            |
| Pput_0030 | 148545288   | copper-translocating P-type ATPase                                    | 1                                      | 1                                    | 1                            | 45                    | 1                            | 0.04            |
| Pput_0043 | 148545300   | two component heavy metal response transcriptional regulator          | 1                                      | 3                                    | 3                            | 118                   | 13.8                         | 0.52            |
| Pput_0046 | 148545303   | hypothetical protein Pput_0046                                        | 1                                      | 1                                    | 1                            | 29                    | 9.6                          | 0.5             |
| Pput_0055 | 148545312   | heavy metal translocating P-type ATPase                               | 5                                      | 5                                    | 2                            | 152                   | 1.1                          | 0.25            |
| Pput_0060 | 148545317   | outer membrane porin                                                  | 5                                      | 5                                    | 3                            | 189                   | 2.2                          | 0.4             |
| Pput_0068 | 148545325   | beta-lactamase domain-containing protein                              | 2                                      | 7                                    | 6                            | 203                   | 9.5                          | 0.93            |
| Pput_0072 | 148545329   | glucose-methanol-choline oxidoreductase                               | 1                                      | 2                                    | 2                            | 43                    | 5.1                          | 0.13            |
| Pput_0076 | 148545333   | glycyl-tRNA synthetase subunit beta                                   | 5                                      | 25                                   | 18                           | 1053                  | 22.5                         | 1.64            |
| Pput_0077 | 148545334   | glycyl-tRNA synthetase subunit alpha                                  | 1                                      | 7                                    | 5                            | 243                   | 19                           | 0.81            |
| Pput_0079 | 148545336   | lipid A biosynthesis lauroyl acyltransferase                          | 1                                      | 1                                    | 1                            | 46                    | 3.7                          | 0.11            |
| Pput_0081 | 148545338   | potassium transporter peripheral membrane component                   | 1                                      | 7                                    | 7                            | 187                   | 17.9                         | 0.66            |
| Pput_0083 | 148545340   | methionyl-tRNA formyltransferase                                      | 1                                      | 2                                    | 2                            | 93                    | 8.4                          | 0.24            |
| Pput_0084 | 148545341   | peptide deformylase                                                   | 2                                      | 8                                    | 4                            | 204                   | 22.6                         | 2.37            |
| Pput_0086 | 148545343   | SUA5/yciO/yrdC domain-containing protein                              | 2                                      | 3                                    | 2                            | 156                   | 9.7                          | 0.6             |
| Pput_0088 | 148545345   | alcohol dehydrogenase                                                 | 2                                      | 12                                   | 7                            | 399                   | 23.1                         | 1.74            |
| Pput_0089 | 148545346   | coproporphyrinogen III oxidase                                        | 2                                      | 5                                    | 4                            | 172                   | 17.5                         | 0.62            |
| Pput_0090 | 148545347   | shikimate 5-dehydrogenase                                             | 1                                      | 2                                    | 2                            | 133                   | 9.9                          | 0.27            |
| Pput_0097 | 148545354   | tryptophan synthase subunit alpha                                     | 6                                      | 15                                   | 9                            | 647                   | 36.1                         | 3.15            |
| Pput_0100 | 148545357   | protein of unknown function DUF883, ElaB                              | 3                                      | 6                                    | 3                            | 238                   | 34.6                         | 2.46            |
| Pput_0101 | 148545358   | hypothetical protein Pput_0101                                        | 5                                      | 8                                    | 3                            | 302                   | 38                           | 5.31            |
| Pput_0103 | 148545360   | luciferase family protein                                             | 1                                      | 4                                    | 4                            | 124                   | 13.5                         | 0.47            |
| Pput_0104 | 148545361   | OsmC family protein                                                   | 3                                      | 10                                   | 4                            | 383                   | 29.8                         | 4.43            |
| Pput_0106 | 148545363   | hypothetical protein Pput_0106                                        | 4                                      | 18                                   | 7                            | 644                   | 42.3                         | 9.5             |
| Pput_0109 | 148545366   | HAD family hydrolase                                                  | 1                                      | 4                                    | 3                            | 169                   | 14.8                         | 0.49            |
| Pput_0110 | 148545367   | carbonic anhydrase                                                    | 1                                      | 3                                    | 2                            | 103                   | 13.2                         | 0.71            |
| Pput_0111 | 148545368   | oligopeptidase A                                                      | 5                                      | 18                                   | 12                           | 688                   | 19.1                         | 1               |
| Pput_0115 | 148545372   | carbonate dehydratase                                                 | 7                                      | 26                                   | 10                           | 810                   | 41.8                         | 6.68            |
| Pput_0116 | 148545373   | sulphate transporter                                                  | 2                                      | 2                                    | 1                            | 51                    | 2.4                          | 0.14            |
| Pput_0118 | 148545375   | hypothetical protein Pput_0118                                        | 1                                      | 3                                    | 3                            | 120                   | 19.2                         | 0.56            |
| Pput_0119 | 148545376   | cytochrome c oxidase, subunit II                                      | 1                                      | 1                                    | 1                            | 45                    | 5.9                          | 0.09            |
| Pput_0128 | 148545385   | electron transport protein SCO1/SenC                                  | 2                                      | 3                                    | 1                            | 81                    | 4.8                          | 0.34            |
| Pput_0129 | 148545386   | NLPA lipoprotein                                                      | 2                                      | 7                                    | 7                            | 183                   | 19.9                         | 1.3             |
| Pput_0131 | 148545388   | ABC transporter related                                               | 2                                      | 2                                    | 2                            | 84                    | 5.4                          | 0.2             |
| Pput_0132 | 148545389   | hydroperoxidase II                                                    | 2                                      | 12                                   | 12                           | 306                   | 20.5                         | 0.72            |
| Pput_0133 | 148545390   | hypothetical protein Pput_0133                                        | 2                                      | 9                                    | 8                            | 361                   | 37.9                         | 2.17            |
| Pput_0136 | 148545393   | ferric uptake regulator family protein                                | 2                                      | 2                                    | 2                            | 64                    | 8.1                          | 0.42            |
| Pput_0137 | 148545394   | periplasmic solute binding protein                                    | 2                                      | 4                                    | 4                            | 129                   | 15.6                         | 0.49            |
| Pput_0138 | 148545395   | homoserine kinase                                                     | 3                                      | 8                                    | 4                            | 187                   | 8.5                          | 0.81            |
| Pput_0139 | 148545396   | hypothetical protein Pput_0139                                        | 1                                      | 1                                    | 1                            | 40                    | 10.5                         | 0.37            |
| Pput_0140 | 148545397   | DNA polymerase I                                                      | 1                                      | 3                                    | 3                            | 62                    | 4.5                          | 0.12            |
| Pput_0141 | 148545398   | ribosome biogenesis GTP-binding protein YsxC                          | 2                                      | 8                                    | 5                            | 255                   | 31.9                         | 1.8             |
| Pput_0143 | 148545400   | cytochrome c, class I                                                 | 1                                      | 1                                    | 1                            | 58                    | 4.9                          | 0.18            |
| Pput_0144 | 148545401   | DSBA oxidoreductase                                                   | 2                                      | 2                                    | 2                            | 77                    | 7.1                          | 0.32            |
| Pput_0145 | 148545402   | endonuclease/exonuclease/phosphatase                                  | 1                                      | 1                                    | 1                            | 31                    | 6                            | 0.12            |
| Pput_0147 | 148545404   | N-acetylmuramoyl-L-alanine amidase                                    | 1                                      | 1                                    | 1                            | 36                    | 3.8                          | 0.13            |
| Pput_0148 | 148545405   | EAL domain-containing protein                                         | 2                                      | 2                                    | 1                            | 51                    | 2.2                          | 0.12            |
| Pput_0150 | 148545407   | two component, sigma54 specific, Fis family transcriptional regulator | 1                                      | 1                                    | 1                            | 48                    | 2.5                          | 0.07            |
| Pput_0151 | 148545408   | transport-associated                                                  | 1                                      | 4                                    | 4                            | 121                   | 23.8                         | 0.62            |
| Pput_0171 | 148545428   | hypothetical protein Pput_0171                                        | 1                                      | 1                                    | 1                            | 44                    | 14.1                         | 0.5             |
| Pput_0172 | 148545429   | Acetyl-CoA hydrolase                                                  | 1                                      | 3                                    | 1                            | 91                    | 2.6                          | 0.22            |
| Pput_0175 | 148545432   | NAD(P)(+) transhydrogenase (AB-specific)                              | 1                                      | 4                                    | 4                            | 161                   | 9.1                          | 0.44            |
| Pput_0182 | 148545439   | GntR family transcriptional regulator                                 | 1                                      | 4                                    | 4                            | 154                   | 21                           | 0.74            |
| Pput_0184 | 148545441   | diguanylate cyclase/phosphodiesterase                                 | 2                                      | 6                                    | 4                            | 117                   | 5.7                          | 0.21            |
| Pput_0199 | 148545456   | secretion protein HlyD family protein                                 | 1                                      | 5                                    | 5                            | 90                    | 23.7                         | 0.74            |
| Pput_0200 | 148545457   | RND efflux system outer membrane lipoprotein                          | 1                                      | 1                                    | 1                            | 32                    | 3                            | 0.07            |
| Pput_0202 | 148545459   | cytochrome c, class I                                                 | 1                                      | 1                                    | 1                            | 30                    | 1.2                          | 0.05            |
| Pput_0204 | 148545461   | hypothetical protein Pput_0204                                        | 1                                      | 1                                    | 1                            | 63                    | 12                           | 0.36            |
| Pput_0205 | 148545462   | glutathione S-transferase domain-containing protein                   | 2                                      | 11                                   | 5                            | 389                   | 25                           | 2.83            |
| Pput_0206 | 148545463   | argininosuccinate lyase                                               | 9                                      | 20                                   | 11                           | 971                   | 20.4                         | 1.45            |
| Pput_0207 | 148545464   | LytTR family two component transcriptional regulator                  | 1                                      | 5                                    | 5                            | 255                   | 20.6                         | 0.91            |
| Pput_0208 | 148545465   | porphobilinogen deaminase                                             | 1                                      | 3                                    | 3                            | 87                    | 14.7                         | 0.37            |
| Pput_0210 | 148545467   | protein of unknown function DUF513, hemX                              | 2                                      | 10                                   | 8                            | 391                   | 21.3                         | 1.2             |
| Pput_0211 | 148545468   | HemY domain-containing protein                                        | 4                                      | 10                                   | 6                            | 371                   | 15.8                         | 0.9             |
| Pput_0213 | 148545470   | anti-RNA polymerase sigma 70 factor                                   | 4                                      | 13                                   | 3                            | 552                   | 17.3                         | 2.96            |
| Pput_0215 | 148545472   | alginate regulatory protein AlgP                                      | 7                                      | 7                                    | 5                            | 284                   | 4.1                          | 0.77            |
| Pput_0220 | 148545477   | band 7 protein                                                        | 3                                      | 5                                    | 4                            | 95                    | 15.8                         | 0.72            |
| Pput_0222 | 148545479   | YbaK/prolyl-tRNA synthetase associated region                         | 4                                      | 18                                   | 6                            | 526                   | 42.8                         | 6.38            |
| Pput_0225 | 148545482   | CBS domain-containing protein                                         | 3                                      | 8                                    | 5                            | 294                   | 31.7                         | 2.53            |
| Pput_0228 | 148545484   | succinate-semialdehyde dehydrogenase I                                | 9                                      | 54                                   | 20                           | 1679                  | 37.7                         | 6.68            |
| Pput_0229 | 148545485   | 4-aminobutyrate aminotransferase                                      | 5                                      | 25                                   | 19                           | 993                   | 58.6                         | 4.64            |
| Pput_0232 | 148545488   | fatty acid desaturase                                                 | 1                                      | 1                                    | 1                            | 25                    | 2                            | 0.08            |
| Pput_0235 | 148545491   | ABC transporter related                                               | 1                                      | 1                                    | 1                            | 28                    | 2.4                          | 0.09            |
| Pput_0241 | 148545497   | polar amino acid ABC transporter, inner membrane subunit              | 2                                      | 3                                    | 2                            | 95                    | 9.5                          | 0.48            |
| Pput_0242 | 148545498   | cystine transporter subunit                                           | 4                                      | 18                                   | 15                           | 612                   | 49.6                         | 4.71            |
| Pput_0243 | 148545499   | Serine O-acetyltransferase                                            | 3                                      | 10                                   | 8                            | 307                   | 22.6                         | 1.24            |
| Pput_0249 | 148545505   | outer membrane porin                                                  | 1                                      | 7                                    | 6                            | 331                   | 19.3                         | 0.56            |
| Pput_0250 | 148545506   | peroxidase                                                            | 1                                      | 6                                    | 6                            | 93                    | 31.6                         | 1.42            |

|           |           |                                                                       |    |     |    |      |      |       |
|-----------|-----------|-----------------------------------------------------------------------|----|-----|----|------|------|-------|
| Pput_0251 | 148545507 | NAD(P)H-dependent FMN reductase                                       | 1  | 1   | 1  | 34   | 6.6  | 0.18  |
| Pput_0257 | 148545513 | TetR family transcriptional regulator                                 | 1  | 1   | 1  | 63   | 4.3  | 0.16  |
| Pput_0258 | 148545514 | glutamate--cysteine ligase                                            | 2  | 3   | 3  | 105  | 4.7  | 0.19  |
| Pput_0260 | 148545516 | RNA-binding S1 domain-containing protein                              | 1  | 1   | 1  | 26   | 1.3  | 0.04  |
| Pput_0261 | 148545517 | osmolarity response regulator                                         | 1  | 9   | 8  | 171  | 41.9 | 2.2   |
| Pput_0263 | 148545519 | alpha-L-glutamate ligase                                              | 1  | 3   | 3  | 121  | 11.6 | 0.39  |
| Pput_0265 | 148545521 | RNA-binding S4 domain-containing protein                              | 4  | 5   | 3  | 207  | 12.8 | 1.36  |
| Pput_0267 | 148545523 | Hsp33-like chaperonin                                                 | 4  | 21  | 11 | 649  | 25.4 | 3.4   |
| Pput_0268 | 148545524 | phosphoenolpyruvate carboxykinase                                     | 11 | 49  | 18 | 1902 | 34.3 | 4.9   |
| Pput_0269 | 148545525 | thioesterase superfamily protein                                      | 1  | 1   | 1  | 78   | 6.2  | 0.25  |
| Pput_0273 | 148545529 | LysM domain/BON superfamily protein                                   | 1  | 3   | 3  | 63   | 30.1 | 0.95  |
| Pput_0274 | 148545530 | HAD family hydrolase                                                  | 1  | 2   | 2  | 89   | 9.5  | 0.32  |
| Pput_0275 | 148545531 | ADP-ribose diphosphatase NudE                                         | 1  | 1   | 1  | 60   | 8    | 0.18  |
| Pput_0276 | 148545532 | 3~(2~),5~-bispophosphate nucleotidase                                 | 1  | 2   | 2  | 49   | 8.8  | 0.28  |
| Pput_0277 | 148545533 | thioesterase domain-containing protein                                | 2  | 5   | 3  | 162  | 17.9 | 1.49  |
| Pput_0278 | 148545534 | two component, sigma54 specific, Fis family transcriptional regulator | 2  | 3   | 3  | 70   | 2.8  | 0.22  |
| Pput_0280 | 148545536 | dTDP-4-dehydrorhamnose 3,5-epimerase                                  | 2  | 5   | 4  | 202  | 18.8 | 1.09  |
| Pput_0283 | 148545539 | TonB-dependent siderophore receptor                                   | 2  | 2   | 1  | 53   | 1.2  | 0.1   |
| Pput_0284 | 148545540 | outer membrane porin                                                  | 1  | 7   | 7  | 226  | 19.6 | 0.69  |
| Pput_0285 | 148545541 | glutamate synthase (NADPH)                                            | 2  | 2   | 1  | 54   | 1.4  | 0.12  |
| Pput_0288 | 148545544 | TonB-dependent siderophore receptor                                   | 1  | 1   | 1  | 27   | 2.5  | 0.04  |
| Pput_0300 | 148545555 | extracellular solute-binding protein                                  | 1  | 7   | 7  | 292  | 39.6 | 1.43  |
| Pput_0301 | 148545556 | ABC transporter related                                               | 1  | 1   | 1  | 48   | 3.1  | 0.13  |
| Pput_0303 | 148545558 | hypothetical protein Pput_0303                                        | 1  | 2   | 2  | 118  | 10.2 | 0.53  |
| Pput_0307 | 148545562 | AsmA family protein                                                   | 2  | 10  | 6  | 251  | 9    | 0.51  |
| Pput_0309 | 148545564 | imidazoleglycerol-phosphate dehydratase                               | 1  | 6   | 5  | 162  | 23.3 | 1.46  |
| Pput_0310 | 148545565 | imidazole glycerol phosphate synthase subunit HisH                    | 2  | 8   | 7  | 236  | 26.9 | 1.46  |
| Pput_0312 | 148545567 | imidazole-4-carboxamide isomerase                                     | 2  | 11  | 8  | 339  | 41.6 | 2.46  |
| Pput_0313 | 148545568 | imidazole glycerol phosphate synthase subunit HisF                    | 2  | 5   | 4  | 111  | 14.1 | 0.83  |
| Pput_0314 | 148545569 | glycine betaine/L-proline ABC transporter, ATPase subunit             | 2  | 2   | 2  | 66   | 2.6  | 0.16  |
| Pput_0316 | 148545571 | substrate-binding region of ABC-type glycine betaine transport system | 1  | 7   | 6  | 361  | 25.1 | 1.06  |
| Pput_0317 | 148545572 | L-serine dehydratase 1                                                | 1  | 1   | 1  | 28   | 1.1  | 0.07  |
| Pput_0324 | 148545579 | substrate-binding region of ABC-type glycine betaine transport system | 1  | 3   | 3  | 97   | 9.9  | 0.36  |
| Pput_0327 | 148545582 | hypothetical protein Pput_0327                                        | 1  | 1   | 1  | 26   | 3.5  | 0.15  |
| Pput_0329 | 148545584 | membrane dipeptidase                                                  | 3  | 7   | 6  | 222  | 17.2 | 0.84  |
| Pput_0332 | 148545587 | hypothetical protein Pput_0332                                        | 2  | 2   | 1  | 57   | 1.2  | 0.1   |
| Pput_0337 | 148545592 | oxidoreductase FAD-binding subunit                                    | 1  | 1   | 1  | 28   | 2.2  | 0.09  |
| Pput_0339 | 148545594 | methyl-accepting chemotaxis sensory transducer                        | 2  | 2   | 2  | 60   | 1.8  | 0.12  |
| Pput_0343 | 148545598 | threonine aldolase                                                    | 1  | 4   | 4  | 115  | 13.9 | 0.45  |
| Pput_0344 | 148545599 | serine hydroxymethyltransferase                                       | 11 | 11  | 2  | 379  | 2.2  | 0.88  |
| Pput_0348 | 148545603 | sarcosine oxidase gamma subunit family protein                        | 1  | 1   | 1  | 33   | 7.6  | 0.17  |
| Pput_0350 | 148545605 | formaldehyde dehydrogenase, glutathione-independent                   | 1  | 6   | 5  | 264  | 21.1 | 0.66  |
| Pput_0355 | 148545610 | putative acyltransferase                                              | 1  | 1   | 1  | 32   | 2.7  | 0.11  |
| Pput_0356 | 148545611 | hypothetical protein Pput_0356                                        | 5  | 31  | 12 | 878  | 50   | 17.89 |
| Pput_0360 | 148545615 | glutathione S-transferase domain-containing protein                   | 1  | 6   | 6  | 181  | 47.3 | 1.49  |
| Pput_0361 | 148545616 | methionine sulfoxide reductase A                                      | 2  | 8   | 4  | 252  | 19.6 | 1.24  |
| Pput_0362 | 148545617 | diguanylate cyclase/phosphodiesterase with PAS/PAC and GAF sensor(s)  | 1  | 1   | 1  | 26   | 2.2  | 0.04  |
| Pput_0363 | 148545618 | dihydrolipoamide acetyltransferase                                    | 30 | 103 | 16 | 3311 | 26.3 | 7.94  |
| Pput_0364 | 148545619 | pyruvate dehydrogenase subunit E1                                     | 54 | 332 | 44 | 8519 | 34.6 | 16.11 |
| Pput_0365 | 148545620 | (glutamate--ammonia-ligase) adenylyltransferase                       | 1  | 3   | 3  | 78   | 3.4  | 0.1   |
| Pput_0366 | 148545621 | lipopolysaccharide heptosyltransferase II                             | 1  | 3   | 3  | 121  | 10.6 | 0.32  |
| Pput_0367 | 148545622 | lipopolysaccharide heptosyltransferase I                              | 1  | 1   | 1  | 98   | 3.1  | 0.09  |
| Pput_0368 | 148545623 | glycosyl transferase, group 1                                         | 2  | 7   | 6  | 272  | 15.2 | 0.76  |
| Pput_0369 | 148545624 | lipopolysaccharide kinase                                             | 1  | 2   | 2  | 75   | 9.3  | 0.26  |
| Pput_0370 | 148545625 | lipopolysaccharide kinase                                             | 1  | 1   | 1  | 66   | 6.1  | 0.13  |
| Pput_0371 | 148545626 | lipopolysaccharide kinase                                             | 1  | 2   | 2  | 57   | 13.6 | 0.28  |
| Pput_0372 | 148545627 | hypothetical protein Pput_0372                                        | 1  | 3   | 3  | 117  | 6.7  | 0.22  |
| Pput_0380 | 148545635 | CBS domain-containing protein                                         | 2  | 4   | 4  | 174  | 4.8  | 0.21  |
| Pput_0382 | 148545637 | malate synthase G                                                     | 5  | 15  | 12 | 542  | 17   | 0.79  |
| Pput_0383 | 148545638 | amino acid-binding ACT domain-containing protein                      | 1  | 5   | 3  | 215  | 26.2 | 1.51  |
| Pput_0385 | 148545640 | serine/threonine protein kinase                                       | 1  | 1   | 1  | 33   | 6.2  | 0.1   |
| Pput_0388 | 148545643 | biotin synthase                                                       | 2  | 2   | 1  | 131  | 5.4  | 0.2   |
| Pput_0390 | 148545645 | carboxylesterase                                                      | 1  | 4   | 4  | 161  | 28.4 | 0.71  |
| Pput_0392 | 148545647 | dithiobiotin synthetase                                               | 1  | 1   | 1  | 70   | 7.1  | 0.16  |
| Pput_0394 | 148545649 | acyl-CoA dehydrogenase domain-containing protein                      | 1  | 10  | 10 | 429  | 17.6 | 0.73  |
| Pput_0396 | 148545651 | acyl-CoA dehydrogenase domain-containing protein                      | 2  | 10  | 9  | 350  | 19.4 | 0.72  |
| Pput_0400 | 148545655 | peptidase S9 prolyl oligopeptidase                                    | 1  | 1   | 1  | 35   | 1.5  | 0.05  |
| Pput_0403 | 148545658 | pyrroloquinoline quinone biosynthesis protein PqqC                    | 2  | 6   | 5  | 190  | 27.1 | 0.97  |
| Pput_0404 | 148545659 | pyrroloquinoline quinone biosynthesis protein PqqB                    | 2  | 2   | 2  | 89   | 4.3  | 0.22  |
| Pput_0406 | 148545661 | Nitrilase/cyanide hydratase and apolipoprotein N-acyltransferase      | 2  | 4   | 3  | 138  | 8    | 0.56  |
| Pput_0407 | 148545662 | amine oxidase                                                         | 1  | 2   | 2  | 76   | 4.6  | 0.12  |
| Pput_0409 | 148545664 | hypothetical protein Pput_0409                                        | 1  | 1   | 1  | 56   | 5.4  | 0.18  |
| Pput_0413 | 148545668 | hypothetical protein Pput_0413                                        | 1  | 1   | 1  | 27   | 2    | 0.09  |
| Pput_0421 | 148545673 | RNA polymerase sigma factor RpoD                                      | 12 | 39  | 14 | 1455 | 19.5 | 2.28  |
| Pput_0423 | 148545675 | 30S ribosomal protein S21                                             | 4  | 20  | 8  | 512  | 57.7 | 60.17 |
| Pput_0424 | 148545676 | metalloendopeptidase glycoprotease family                             | 1  | 2   | 2  | 73   | 5.9  | 0.21  |
| Pput_0426 | 148545678 | dihydroneopterin aldolase                                             | 1  | 2   | 2  | 45   | 16.9 | 0.68  |
| Pput_0429 | 148545681 | SpoVR family protein                                                  | 1  | 3   | 3  | 88   | 4.8  | 0.19  |
| Pput_0430 | 148545682 | hypothetical protein Pput_0430                                        | 5  | 17  | 8  | 509  | 18   | 1.5   |
| Pput_0431 | 148545683 | putative serine protein kinase, PrkA                                  | 47 | 212 | 45 | 5886 | 45.2 | 16.89 |
| Pput_0433 | 148545685 | diadenosine tetraphosphatase                                          | 1  | 2   | 2  | 56   | 6.3  | 0.24  |
| Pput_0434 | 148545686 | ApaG                                                                  | 2  | 3   | 3  | 110  | 29.4 | 0.94  |
| Pput_0435 | 148545687 | dimethyladenosine transferase                                         | 1  | 1   | 1  | 34   | 4.1  | 0.13  |
| Pput_0436 | 148545688 | 4-hydroxythreonine-4-phosphate dehydrogenase                          | 1  | 1   | 1  | 27   | 4.9  | 0.11  |
| Pput_0437 | 148545689 | SurA domain-containing protein                                        | 1  | 8   | 8  | 260  | 16.4 | 0.8   |
| Pput_0438 | 148545690 | organic solvent tolerance protein                                     | 4  | 20  | 12 | 469  | 11.8 | 0.76  |
| Pput_0439 | 148545691 | aminoglycoside phosphotransferase                                     | 1  | 1   | 1  | 47   | 3.5  | 0.1   |
| Pput_0440 | 148545692 | nucleotidyl transferase                                               | 4  | 5   | 3  | 193  | 12.1 | 0.83  |
| Pput_0442 | 148545694 | hypothetical protein Pput_0442                                        | 3  | 3   | 3  | 90   | 2.4  | 0.33  |

|           |           |                                                          |    |     |    |       |      |         |
|-----------|-----------|----------------------------------------------------------|----|-----|----|-------|------|---------|
| Pput_0443 | 148545695 | PAS/PAC sensor signal transduction histidine kinase      | 1  | 2   | 2  | 50    | 2.9  | 0.08    |
| Pput_0444 | 148545696 | two component LuxR family transcriptional regulator      | 1  | 3   | 3  | 157   | 19.1 | 0.59    |
| Pput_0445 | 148545697 | spermidine/putrescine ABC transporter ATPase subunit     | 1  | 4   | 4  | 176   | 12   | 0.41    |
| Pput_0446 | 148545698 | extracellular solute-binding protein                     | 5  | 22  | 14 | 736   | 34.6 | 3.52    |
| Pput_0449 | 148545701 | ribose-phosphate 3-epimerase                             | 2  | 7   | 4  | 235   | 20.1 | 1.57    |
| Pput_0451 | 148545703 | anthranilate synthase component I                        | 9  | 28  | 16 | 970   | 35.3 | 2.98    |
| Pput_0453 | 148545705 | anthranilate synthase component II                       | 1  | 2   | 2  | 83    | 12.2 | 0.38    |
| Pput_0454 | 148545706 | anthranilate phosphoribosyltransferase                   | 2  | 4   | 4  | 98    | 7.4  | 0.42    |
| Pput_0455 | 148545707 | indole-3-glycerol-phosphate synthase                     | 4  | 29  | 14 | 743   | 43   | 7.93    |
| Pput_0456 | 148545708 | hypothetical protein Pput_0456                           | 1  | 3   | 3  | 78    | 20.5 | 0.5     |
| Pput_0458 | 148545710 | OsmC family protein                                      | 2  | 11  | 7  | 314   | 36.4 | 5.01    |
| Pput_0460 | 148545712 | ubiquinone biosynthesis protein COQ7-like protein        | 1  | 2   | 1  | 50    | 4.7  | 0.34    |
| Pput_0461 | 148545713 | histidine triad (HIT) protein                            | 1  | 3   | 3  | 123   | 31.3 | 1.23    |
| Pput_0463 | 148545715 | 2-nitropropane dioxygenase, NPD                          | 1  | 1   | 1  | 87    | 4.4  | 0.11    |
| Pput_0465 | 148545717 | N-acetyl-gamma-glutamyl-phosphate reductase              | 1  | 15  | 12 | 550   | 46.5 | 2.94    |
| Pput_0467 | 148545719 | anhydro-N-acetyluramic acid kinase                       | 1  | 1   | 1  | 67    | 3.9  | 0.1     |
| Pput_0469 | 148545721 | tyrosyl-tRNA synthetase                                  | 7  | 26  | 14 | 958   | 37.1 | 2.99    |
| Pput_0471 | 148545723 | pantothenate kinase                                      | 1  | 1   | 1  | 39    | 3.6  | 0.14    |
| Pput_0473 | 148545725 | elongation factor Tu                                     | 51 | 447 | 32 | 13941 | 63   | 70.31   |
| Pput_0474 | 148545726 | preprotein translocase subunit SecE                      | 1  | 1   | 1  | 33    | 6.6  | 0.3     |
| Pput_0475 | 148545727 | transcription antitermination protein NusG               | 3  | 24  | 10 | 641   | 46.9 | 9.1     |
| Pput_0476 | 148545728 | 50S ribosomal protein L11                                | 5  | 31  | 9  | 1075  | 48.3 | 27.06   |
| Pput_0477 | 148545729 | 50S ribosomal protein L1                                 | 12 | 61  | 18 | 1822  | 76.2 | 33.39   |
| Pput_0478 | 148545730 | 50S ribosomal protein L10                                | 12 | 189 | 17 | 4920  | 64.1 | 76.7    |
| Pput_0479 | 148545731 | 50S ribosomal protein L7/L12                             | 7  | 42  | 12 | 1506  | 58.7 | 55.72   |
| Pput_0480 | 148545732 | DNA-directed RNA polymerase subunit beta                 | 36 | 218 | 44 | 6778  | 16.7 | 5.92    |
| Pput_0481 | 148545733 | DNA-directed RNA polymerase subunit beta~                | 56 | 419 | 55 | 11201 | 23.8 | 11.62   |
| Pput_0482 | 148545734 | 30S ribosomal protein S12                                | 4  | 16  | 8  | 318   | 29.3 | 6.39    |
| Pput_0483 | 148545735 | 30S ribosomal protein S7                                 | 14 | 178 | 26 | 3813  | 91.7 | 1330.69 |
| Pput_0484 | 148545736 | elongation factor G                                      | 50 | 396 | 49 | 14002 | 50.2 | 32.54   |
| Pput_0486 | 148545738 | 30S ribosomal protein S10                                | 4  | 37  | 11 | 920   | 71.8 | 68.49   |
| Pput_0487 | 148545739 | 50S ribosomal protein L3                                 | 20 | 97  | 21 | 2967  | 75.4 | 84.79   |
| Pput_0488 | 148545740 | 50S ribosomal protein L4                                 | 15 | 123 | 15 | 2708  | 52.5 | 31.78   |
| Pput_0489 | 148545741 | 50S ribosomal protein L23                                | 5  | 20  | 10 | 716   | 60.6 | 17.87   |
| Pput_0490 | 148545742 | 50S ribosomal protein L2                                 | 18 | 80  | 17 | 2355  | 52.2 | 23.44   |
| Pput_0491 | 148545743 | 30S ribosomal protein S19                                | 2  | 14  | 7  | 302   | 51.6 | 17.01   |
| Pput_0492 | 148545744 | 50S ribosomal protein L22                                | 7  | 46  | 18 | 1541  | 74.5 | 147.66  |
| Pput_0493 | 148545745 | 30S ribosomal protein S3                                 | 8  | 50  | 21 | 1165  | 81.6 | 38.55   |
| Pput_0494 | 148545746 | 50S ribosomal protein L16                                | 5  | 24  | 11 | 739   | 48.9 | 14.47   |
| Pput_0495 | 148545747 | 50S ribosomal protein L29                                | 2  | 10  | 5  | 400   | 57.1 | 23.84   |
| Pput_0496 | 148545748 | 30S ribosomal protein S17                                | 4  | 42  | 12 | 974   | 76.1 | 617.78  |
| Pput_0497 | 148545749 | 50S ribosomal protein L14                                | 10 | 58  | 11 | 2002  | 61.5 | 148.59  |
| Pput_0498 | 148545750 | 50S ribosomal protein L24                                | 3  | 40  | 17 | 1364  | 77.9 | 334.59  |
| Pput_0499 | 148545751 | 50S ribosomal protein L5                                 | 12 | 107 | 23 | 2510  | 73.7 | 340.07  |
| Pput_0500 | 148545752 | 30S ribosomal protein S14                                | 3  | 21  | 7  | 393   | 59.4 | 12.56   |
| Pput_0501 | 148545753 | 30S ribosomal protein S8                                 | 5  | 60  | 9  | 1477  | 55.4 | 68.63   |
| Pput_0502 | 148545754 | 50S ribosomal protein L6                                 | 7  | 97  | 15 | 2575  | 51.4 | 92.83   |
| Pput_0503 | 148545755 | 50S ribosomal protein L18                                | 5  | 72  | 13 | 1969  | 69   | 125.43  |
| Pput_0504 | 148545756 | 30S ribosomal protein S5                                 | 15 | 161 | 28 | 4371  | 94.6 | 1797.42 |
| Pput_0505 | 148545757 | 50S ribosomal protein L30                                | 3  | 34  | 5  | 608   | 74.1 | 63.83   |
| Pput_0506 | 148545758 | 50S ribosomal protein L15                                | 6  | 82  | 17 | 2123  | 72.2 | 187.84  |
| Pput_0507 | 148545759 | preprotein translocase subunit SecY                      | 3  | 3   | 3  | 87    | 3.6  | 0.24    |
| Pput_0508 | 148545760 | ribosomal protein L36                                    | 1  | 1   | 1  | 34    | 14.5 | 0.64    |
| Pput_0509 | 148545761 | 30S ribosomal protein S13                                | 5  | 53  | 15 | 1174  | 72.9 | 117.87  |
| Pput_0510 | 148545762 | 30S ribosomal protein S11                                | 6  | 72  | 9  | 1842  | 51.2 | 26.25   |
| Pput_0511 | 148545763 | 30S ribosomal protein S4                                 | 21 | 148 | 28 | 3114  | 70.9 | 261.67  |
| Pput_0512 | 148545764 | DNA-directed RNA polymerase subunit alpha                | 14 | 24  | 6  | 757   | 6    | 2.38    |
| Pput_0513 | 148545765 | 50S ribosomal protein L17                                | 4  | 24  | 10 | 780   | 25   | 11.08   |
| Pput_0514 | 148545766 | catalase                                                 | 1  | 4   | 4  | 93    | 8.8  | 0.31    |
| Pput_0515 | 148545767 | bacterioferritin                                         | 4  | 28  | 7  | 720   | 39.6 | 13.5    |
| Pput_0516 | 148545768 | excinuclease ABC subunit A                               | 4  | 13  | 10 | 580   | 10.4 | 0.51    |
| Pput_0518 | 148545770 | single-stranded DNA-binding protein                      | 3  | 21  | 9  | 726   | 30.9 | 9.01    |
| Pput_0519 | 148545771 | GntR family transcriptional regulator                    | 1  | 1   | 1  | 27    | 1.7  | 0.07    |
| Pput_0522 | 148545774 | molybdopterin oxidoreductase Fe4S4 region                | 5  | 12  | 8  | 331   | 39.3 | 3.4     |
| Pput_0523 | 148545775 | formate dehydrogenase, alpha subunit                     | 7  | 21  | 15 | 768   | 17.1 | 0.99    |
| Pput_0524 | 148545776 | formate dehydrogenase, beta subunit                      | 2  | 10  | 7  | 224   | 27.8 | 1.46    |
| Pput_0525 | 148545777 | formate dehydrogenase, gamma subunit                     | 2  | 10  | 4  | 266   | 15.6 | 1.79    |
| Pput_0526 | 148545778 | formate dehydrogenase accessory protein FdhE             | 2  | 2   | 2  | 56    | 4.9  | 0.22    |
| Pput_0527 | 148545779 | selenocysteine synthase                                  | 1  | 1   | 1  | 58    | 2.3  | 0.07    |
| Pput_0528 | 148545780 | selenocysteine-specific translation elongation factor    | 1  | 7   | 7  | 263   | 12.2 | 0.44    |
| Pput_0535 | 148545785 | dTDP-4-dehydrorhamnose reductase                         | 1  | 4   | 4  | 114   | 19.4 | 0.54    |
| Pput_0536 | 148545786 | NAD-dependent epimerase/dehydratase                      | 2  | 2   | 1  | 97    | 2.6  | 0.22    |
| Pput_0537 | 148545787 | HxlR family transcriptional regulator                    | 1  | 1   | 1  | 44    | 6.8  | 0.23    |
| Pput_0539 | 148545789 | OmpW family protein                                      | 2  | 17  | 9  | 518   | 35.7 | 4.8     |
| Pput_0544 | 148545794 | hypothetical protein Pput_0544                           | 1  | 1   | 1  | 33    | 8.8  | 0.32    |
| Pput_0545 | 148545795 | thioredoxin                                              | 1  | 6   | 6  | 217   | 29.3 | 0.95    |
| Pput_0547 | 148545797 | hypothetical protein Pput_0547                           | 2  | 4   | 2  | 244   | 16.5 | 1.02    |
| Pput_0548 | 148545798 | transcriptional regulator NrdR                           | 2  | 5   | 5  | 147   | 17.5 | 1.38    |
| Pput_0549 | 148545799 | riboflavin biosynthesis protein RibD                     | 1  | 2   | 1  | 93    | 5.1  | 0.2     |
| Pput_0550 | 148545800 | riboflavin synthase subunit alpha                        | 2  | 4   | 2  | 164   | 10   | 0.7     |
| Pput_0551 | 148545801 | GTP cyclohydrolase II-like protein                       | 1  | 1   | 1  | 33    | 2.8  | 0.09    |
| Pput_0552 | 148545802 | 6,7-dimethyl-8-ribityllumazine synthase                  | 5  | 16  | 6  | 558   | 48.7 | 6.32    |
| Pput_0553 | 148545803 | transcription antitermination protein NusB               | 3  | 11  | 7  | 297   | 28.9 | 3.33    |
| Pput_0554 | 148545804 | thiamine monophosphate kinase                            | 1  | 1   | 1  | 56    | 3.7  | 0.11    |
| Pput_0557 | 148545807 | GTP cyclohydrolase II                                    | 1  | 6   | 5  | 197   | 36.6 | 1.56    |
| Pput_0561 | 148545811 | 1-deoxy-D-xylulose-5-phosphate synthase                  | 1  | 4   | 4  | 152   | 8.2  | 0.24    |
| Pput_0562 | 148545812 | polyprenyl synthetase                                    | 1  | 1   | 1  | 49    | 6.1  | 0.12    |
| Pput_0570 | 148545820 | hemerythrin HHE cation binding domain-containing protein | 1  | 6   | 4  | 174   | 28.6 | 2.19    |
| Pput_0577 | 148545827 | inorganic pyrophosphatase                                | 2  | 11  | 6  | 361   | 27.4 | 3.67    |

|           |           |                                                                      |    |     |    |      |      |       |
|-----------|-----------|----------------------------------------------------------------------|----|-----|----|------|------|-------|
| Pput_0579 | 148545829 | SNARE associated Golgi protein                                       | 1  | 1   | 1  | 35   | 3.7  | 0.16  |
| Pput_0580 | 148545830 | GCN5-related N-acetyltransferase                                     | 3  | 15  | 7  | 413  | 35.5 | 6.1   |
| Pput_0581 | 148545831 | ethanolamine ammonia-lyase small subunit                             | 2  | 2   | 1  | 155  | 5.1  | 0.26  |
| Pput_0584 | 148545834 | aldehyde dehydrogenase                                               | 23 | 75  | 20 | 2745 | 43.5 | 8.3   |
| Pput_0585 | 148545835 | Fis family GAF modulated sigma54 specific transcriptional regulator  | 2  | 2   | 1  | 65   | 1    | 0.1   |
| Pput_0586 | 148545836 | UDP-N-acetylmuramate                                                 | 2  | 4   | 3  | 109  | 6.9  | 0.33  |
| Pput_0587 | 148545837 | aromatic acid decarboxylase                                          | 1  | 2   | 2  | 45   | 11   | 0.36  |
| Pput_0589 | 148545839 | hypothetical protein Pput_0589                                       | 1  | 3   | 3  | 85   | 14.5 | 0.56  |
| Pput_0592 | 148545842 | branched-chain alpha-keto acid dehydrogenase subunit E2              | 1  | 1   | 1  | 28   | 2.4  | 0.09  |
| Pput_0593 | 148545843 | transketolase, central region                                        | 3  | 8   | 5  | 320  | 18.2 | 0.94  |
| Pput_0594 | 148545844 | pyruvate dehydrogenase (acetyl-transferring)                         | 1  | 3   | 3  | 68   | 12.3 | 0.36  |
| Pput_0596 | 148545846 | Fis family GAF modulated sigma54 specific transcriptional regulator  | 2  | 2   | 2  | 64   | 0.8  | 0.1   |
| Pput_0597 | 148545847 | acetyl-CoA carboxylase biotin carboxylase subunit                    | 12 | 59  | 22 | 1723 | 47   | 8.42  |
| Pput_0598 | 148545848 | acetyl-CoA carboxylase biotin carboxyl carrier protein subunit       | 3  | 16  | 5  | 492  | 28.1 | 6.48  |
| Pput_0603 | 148545853 | hypothetical protein Pput_0603                                       | 2  | 10  | 8  | 422  | 29.3 | 1.16  |
| Pput_0605 | 148545855 | translation initiation factor SUI1                                   | 1  | 1   | 1  | 25   | 4.9  | 0.2   |
| Pput_0606 | 148545856 | arginine decarboxylase                                               | 2  | 8   | 6  | 186  | 11.3 | 0.47  |
| Pput_0609 | 148545859 | alpha-2-macroglobulin domain-containing protein                      | 1  | 1   | 1  | 28   | 0.6  | 0.02  |
| Pput_0615 | 148545865 | hypothetical protein Pput_0615                                       | 3  | 24  | 12 | 694  | 47.6 | 9.56  |
| Pput_0616 | 148545866 | hypothetical protein Pput_0616                                       | 2  | 2   | 1  | 59   | 4.7  | 0.34  |
| Pput_0618 | 148545868 | hypothetical protein Pput_0618                                       | 1  | 1   | 1  | 52   | 8.9  | 0.34  |
| Pput_0620 | 148545870 | 3-ketoacyl-(acyl-carrier-protein) reductase                          | 1  | 2   | 1  | 24   | 2    | 0.08  |
| Pput_0621 | 148545871 | acetyl-CoA acetyltransferase                                         | 1  | 2   | 2  | 55   | 5.4  | 0.17  |
| Pput_0623 | 148545873 | methyl-accepting chemotaxis sensory transducer                       | 4  | 6   | 4  | 268  | 5.3  | 0.32  |
| Pput_0624 | 148545874 | MerR family transcriptional regulator                                | 1  | 1   | 1  | 29   | 8.8  | 0.25  |
| Pput_0625 | 148545875 | heavy metal translocating P-type ATPase                              | 1  | 1   | 1  | 48   | 2    | 0.04  |
| Pput_0631 | 148545881 | adenosine deaminase                                                  | 2  | 7   | 5  | 295  | 14.8 | 0.82  |
| Pput_0632 | 148545882 | short chain dehydrogenase                                            | 2  | 8   | 4  | 282  | 20.2 | 1.31  |
| Pput_0634 | 148545884 | TetR family transcriptional regulator                                | 2  | 2   | 1  | 113  | 4.5  | 0.3   |
| Pput_0636 | 148545886 | beta alanine--pyruvate transaminase                                  | 1  | 6   | 6  | 289  | 24.8 | 0.56  |
| Pput_0637 | 148545887 | methylmalonate-semialdehyde dehydrogenase                            | 3  | 13  | 8  | 505  | 15.7 | 1.07  |
| Pput_0641 | 148545891 | 30S ribosomal protein S20                                            | 4  | 14  | 5  | 327  | 52.2 | 11.42 |
| Pput_0643 | 148545893 | bifunctional riboflavin kinase/FMN adenylyltransferase               | 3  | 7   | 5  | 242  | 17.7 | 0.87  |
| Pput_0644 | 148545894 | isoleucyl-tRNA synthetase                                            | 14 | 56  | 23 | 1630 | 24.8 | 2.45  |
| Pput_0647 | 148545897 | 4-hydroxy-3-methylbut-2-enyl diphosphate reductase                   | 2  | 3   | 3  | 119  | 7.3  | 0.34  |
| Pput_0659 | 148545909 | branched chain amino acid ABC transporter amino acid-binding protein | 1  | 1   | 1  | 41   | 2.5  | 0.09  |
| Pput_0662 | 148545912 | DNA uptake lipoprotein-like protein                                  | 2  | 5   | 4  | 235  | 13.9 | 0.53  |
| Pput_0663 | 148545913 | RluA family pseudouridine synthase                                   | 2  | 4   | 3  | 110  | 5.4  | 0.42  |
| Pput_0665 | 148545915 | ATPase                                                               | 32 | 174 | 44 | 6253 | 44   | 11.03 |
| Pput_0672 | 148545922 | dephospho-CoA kinase                                                 | 1  | 3   | 3  | 78   | 21.3 | 0.6   |
| Pput_0687 | 148545934 | lactate/malate dehydrogenase                                         | 2  | 15  | 8  | 572  | 32.7 | 2.67  |
| Pput_0692 | 148545938 | homocysteine S-methyltransferase                                     | 1  | 1   | 1  | 76   | 3.5  | 0.11  |
| Pput_0697 | 148545943 | AsnC family transcriptional regulator                                | 1  | 1   | 1  | 28   | 6.2  | 0.24  |
| Pput_0699 | 148545945 | aldehyde dehydrogenase                                               | 1  | 1   | 1  | 25   | 3    | 0.07  |
| Pput_0702 | 148545948 | serine hydroxymethyltransferase                                      | 23 | 55  | 16 | 1681 | 37.6 | 6.18  |
| Pput_0703 | 148545949 | diguanylate cyclase/phosphodiesterase with PAS/PAC and GAF sensor(s) | 1  | 1   | 1  | 30   | 0.6  | 0.03  |
| Pput_0705 | 148545951 | putative ABC transporter ATP-binding protein                         | 10 | 33  | 22 | 1140 | 43.1 | 3.27  |
| Pput_0706 | 148545952 | glutamate dehydrogenase                                              | 1  | 1   | 1  | 28   | 2.5  | 0.08  |
| Pput_0708 | 148545954 | hypothetical protein Pput_0708                                       | 4  | 9   | 4  | 351  | 37.3 | 3.22  |
| Pput_0710 | 148545956 | hypothetical protein Pput_0710                                       | 8  | 9   | 1  | 278  | 4.9  | 1.84  |
| Pput_0711 | 148545957 | ATP-dependent protease-like protein                                  | 3  | 18  | 15 | 578  | 19.5 | 0.91  |
| Pput_0714 | 148545960 | hypothetical protein Pput_0714                                       | 2  | 3   | 3  | 72   | 11.9 | 1.17  |
| Pput_0715 | 148545961 | peptidylprolyl isomerase, FKBP-type                                  | 2  | 7   | 5  | 279  | 19   | 1.55  |
| Pput_0717 | 148545963 | alkylphosphonate utilization operon protein PhnA                     | 1  | 1   | 1  | 38   | 9.7  | 0.32  |
| Pput_0718 | 148545964 | polyprenyl synthetase                                                | 1  | 6   | 6  | 322  | 18.9 | 0.83  |
| Pput_0720 | 148545966 | 50S ribosomal protein L21                                            | 6  | 51  | 10 | 1080 | 68.3 | 56.54 |
| Pput_0721 | 148545967 | 50S ribosomal protein L27                                            | 4  | 22  | 7  | 472  | 63.5 | 27.19 |
| Pput_0722 | 148545968 | GTPase ObgE                                                          | 1  | 1   | 1  | 26   | 2.9  | 0.08  |
| Pput_0723 | 148545969 | gamma-glutamyl kinase                                                | 1  | 2   | 2  | 157  | 6.7  | 0.2   |
| Pput_0724 | 148545970 | CreA family protein                                                  | 2  | 2   | 2  | 123  | 13.1 | 0.46  |
| Pput_0726 | 148545972 | hypothetical protein Pput_0726                                       | 1  | 1   | 1  | 46   | 4.7  | 0.14  |
| Pput_0738 | 148545984 | DNA-3-methyladenine glycosylase II                                   | 1  | 1   | 1  | 45   | 4.8  | 0.17  |
| Pput_0740 | 148545986 | MscS mechanosensitive ion channel                                    | 1  | 1   | 1  | 28   | 1.1  | 0.04  |
| Pput_0745 | 148545991 | isochorismatase hydrolase                                            | 2  | 10  | 7  | 275  | 44.7 | 2.49  |
| Pput_0746 | 148545992 | hypothetical protein Pput_0746                                       | 1  | 2   | 2  | 62   | 3.3  | 0.25  |
| Pput_0752 | 148545998 | sulfate transporter                                                  | 1  | 1   | 1  | 29   | 1.6  | 0.06  |
| Pput_0753 | 148545999 | GTP-dependent nucleic acid-binding protein EngD                      | 1  | 5   | 5  | 114  | 17.8 | 0.56  |
| Pput_0754 | 148546000 | peptidyl-tRNA hydrolase                                              | 2  | 7   | 5  | 237  | 26.8 | 1.92  |
| Pput_0755 | 148546001 | 50S ribosomal protein L25/general stress protein Ctc                 | 13 | 49  | 16 | 1506 | 67.5 | 23.89 |
| Pput_0756 | 148546002 | ribose-phosphate pyrophosphokinase                                   | 8  | 37  | 18 | 1602 | 54.2 | 9.51  |
| Pput_0758 | 148546004 | outer membrane lipoprotein LolB                                      | 2  | 5   | 3  | 181  | 15.6 | 0.95  |
| Pput_0759 | 148546005 | TPR repeat-containing protein                                        | 1  | 3   | 3  | 73   | 5.8  | 0.18  |
| Pput_0760 | 148546006 | glutamyl-tRNA reductase                                              | 1  | 1   | 1  | 92   | 4.9  | 0.08  |
| Pput_0761 | 148546007 | peptide chain release factor 1                                       | 1  | 1   | 1  | 78   | 4.7  | 0.09  |
| Pput_0763 | 148546009 | molybdopterin biosynthesis protein MoeB                              | 1  | 3   | 3  | 88   | 14.3 | 0.48  |
| Pput_0765 | 148546011 | hypothetical protein Pput_0765                                       | 1  | 1   | 1  | 70   | 6.5  | 0.23  |
| Pput_0768 | 148546014 | MerR family transcriptional regulator                                | 1  | 1   | 1  | 27   | 2.7  | 0.11  |
| Pput_0769 | 148546015 | hypothetical protein Pput_0769                                       | 1  | 1   | 1  | 32   | 1.6  | 0.11  |
| Pput_0770 | 148546016 | NAD/FAD-dependent oxidoreductase-like protein                        | 2  | 4   | 4  | 195  | 12.8 | 0.44  |
| Pput_0771 | 148546017 | NAD-dependent epimerase/dehydratase                                  | 1  | 5   | 5  | 184  | 21.9 | 0.71  |
| Pput_0772 | 148546018 | ferrochelatase                                                       | 2  | 2   | 1  | 114  | 3.3  | 0.2   |
| Pput_0774 | 148546020 | uracil phosphoribosyltransferase                                     | 1  | 6   | 5  | 201  | 32.1 | 1.15  |
| Pput_0775 | 148546021 | hypoxanthine-guanine phosphoribosyltransferase                       | 3  | 9   | 5  | 325  | 24.3 | 2.14  |
| Pput_0777 | 148546023 | hypothetical protein Pput_0777                                       | 1  | 1   | 1  | 31   | 7.7  | 0.23  |
| Pput_0778 | 148546024 | hypothetical protein Pput_0778                                       | 1  | 2   | 2  | 64   | 29.2 | 0.86  |
| Pput_0779 | 148546025 | malate:quinone oxidoreductase                                        | 4  | 20  | 10 | 479  | 23.5 | 1.67  |
| Pput_0780 | 148546026 | hypothetical protein Pput_0780                                       | 7  | 45  | 7  | 1543 | 40.7 | 15.38 |
| Pput_0783 | 148546029 | phospholipid/glycerol acyltransferase                                | 1  | 1   | 1  | 72   | 3.1  | 0.09  |
| Pput_0787 | 148546033 | peptidase M48, Ste24p                                                | 2  | 2   | 2  | 101  | 5.1  | 0.26  |

|           |           |                                                                      |    |    |    |      |      |        |
|-----------|-----------|----------------------------------------------------------------------|----|----|----|------|------|--------|
| Pput_0788 | 148546034 | hypothetical protein Pput_0788                                       | 1  | 1  | 1  | 27   | 4.6  | 0.19   |
| Pput_0790 | 148546036 | glycerate dehydrogenase                                              | 1  | 1  | 1  | 66   | 3.4  | 0.11   |
| Pput_0791 | 148546037 | acyl-CoA synthetase                                                  | 2  | 3  | 3  | 75   | 3.4  | 0.18   |
| Pput_0792 | 148546038 | hypothetical protein Pput_0792                                       | 2  | 13 | 9  | 414  | 15.9 | 0.81   |
| Pput_0793 | 148546039 | hypothetical protein Pput_0793                                       | 4  | 16 | 12 | 462  | 28   | 1.56   |
| Pput_0798 | 148546044 | OmpA/MotB domain-containing protein                                  | 8  | 40 | 9  | 1944 | 40.5 | 10.15  |
| Pput_0799 | 148546045 | phosphate acetyltransferase                                          | 1  | 2  | 2  | 42   | 5.2  | 0.1    |
| Pput_0801 | 148546047 | peptidylprolyl isomerase, FKBP-type                                  | 3  | 9  | 4  | 456  | 27.3 | 2.59   |
| Pput_0802 | 148546048 | peroxiredoxin                                                        | 2  | 2  | 2  | 81   | 5.6  | 0.44   |
| Pput_0803 | 148546049 | glycosyl transferase, group 1                                        | 1  | 1  | 1  | 28   | 2.5  | 0.08   |
| Pput_0809 | 148546054 | thioredoxin reductase                                                | 2  | 14 | 9  | 606  | 40.9 | 2.54   |
| Pput_0810 | 148546055 | nicotinate-nucleotide pyrophosphorylase                              | 3  | 7  | 4  | 268  | 20.6 | 0.98   |
| Pput_0815 | 148546060 | DNA-binding transcriptional regulator FruR                           | 1  | 4  | 4  | 169  | 12.7 | 0.45   |
| Pput_0816 | 148546061 | phosphoenolpyruvate-protein phosphotransferase                       | 3  | 4  | 4  | 111  | 3.5  | 0.15   |
| Pput_0817 | 148546062 | 1-phosphofructokinase                                                | 1  | 1  | 1  | 33   | 3.2  | 0.11   |
| Pput_0820 | 148546065 | hypothetical protein Pput_0820                                       | 3  | 12 | 6  | 617  | 36.7 | 4.24   |
| Pput_0831 | 148546076 | anaerobic nitric oxide reductase transcription regulator             | 1  | 1  | 1  | 56   | 1.7  | 0.06   |
| Pput_0835 | 148546079 | ubiquinol oxidase, subunit II                                        | 4  | 7  | 4  | 352  | 10.9 | 0.68   |
| Pput_0836 | 148546080 | cytochrome o ubiquinol oxidase, subunit I                            | 3  | 4  | 3  | 177  | 3.6  | 0.2    |
| Pput_0840 | 148546084 | aminotransferase                                                     | 1  | 2  | 2  | 89   | 8.5  | 0.17   |
| Pput_0843 | 148546087 | GCN5-related N-acetyltransferase                                     | 1  | 1  | 1  | 34   | 7.8  | 0.17   |
| Pput_0849 | 148546093 | tRNA 2-selenouridine synthase                                        | 1  | 1  | 1  | 65   | 2.7  | 0.09   |
| Pput_0850 | 148546094 | selenophosphate synthetase                                           | 3  | 7  | 5  | 205  | 14.2 | 0.8    |
| Pput_0851 | 148546095 | phosphonate ABC transporter, periplasmic phosphonate-binding protein | 2  | 5  | 5  | 155  | 18.3 | 0.7    |
| Pput_0862 | 148546106 | S-adenosylmethionine:tRNA ribosyltransferase-isomerase               | 1  | 1  | 1  | 39   | 2.3  | 0.1    |
| Pput_0863 | 148546107 | queuine tRNA-ribosyltransferase                                      | 1  | 2  | 2  | 163  | 9.8  | 0.18   |
| Pput_0864 | 148546108 | preprotein translocase subunit YajC                                  | 2  | 3  | 3  | 73   | 18.9 | 1.11   |
| Pput_0866 | 148546110 | preprotein translocase subunit SecF                                  | 1  | 1  | 1  | 51   | 3.3  | 0.12   |
| Pput_0867 | 148546111 | hypothetical protein Pput_0867                                       | 5  | 10 | 4  | 279  | 16.5 | 2.4    |
| Pput_0868 | 148546112 | inositol-phosphate phosphatase                                       | 2  | 11 | 10 | 275  | 41.9 | 2.43   |
| Pput_0869 | 148546113 | RNA methyltransferase                                                | 2  | 3  | 3  | 174  | 11.1 | 0.38   |
| Pput_0870 | 148546114 | serine O-acetyltransferase                                           | 1  | 6  | 5  | 186  | 23.8 | 1.12   |
| Pput_0871 | 148546115 | BadM/Rrf2 family transcriptional regulator                           | 2  | 7  | 5  | 234  | 19.2 | 1.68   |
| Pput_0872 | 148546116 | cysteine desulfurase                                                 | 4  | 4  | 3  | 148  | 2.2  | 0.32   |
| Pput_0873 | 148546117 | scaffold protein                                                     | 2  | 3  | 2  | 147  | 15.6 | 0.92   |
| Pput_0876 | 148546120 | chaperone protein HscA                                               | 1  | 4  | 4  | 144  | 6.9  | 0.24   |
| Pput_0879 | 148546123 | nucleoside-diphosphate kinase                                        | 4  | 52 | 11 | 1614 | 63.1 | 176.46 |
| Pput_0882 | 148546126 | helix-turn-helix domain-containing protein                           | 1  | 1  | 1  | 51   | 2.6  | 0.11   |
| Pput_0883 | 148546127 | 4-hydroxy-3-methylbut-2-en-1-yl diphosphate synthase                 | 1  | 5  | 4  | 163  | 17.9 | 0.57   |
| Pput_0884 | 148546128 | histidyl-tRNA synthetase                                             | 1  | 7  | 6  | 301  | 18.4 | 0.69   |
| Pput_0885 | 148546129 | hypothetical protein Pput_0885                                       | 2  | 5  | 5  | 196  | 26.3 | 1.04   |
| Pput_0886 | 148546130 | Pyrrolo-quinoline quinone                                            | 2  | 2  | 2  | 53   | 2.6  | 0.18   |
| Pput_0887 | 148546131 | GTP-binding protein EngA                                             | 2  | 9  | 6  | 228  | 10.7 | 0.71   |
| Pput_0888 | 148546132 | putative aminotransferase                                            | 1  | 1  | 1  | 41   | 2.4  | 0.09   |
| Pput_0889 | 148546133 | Nitrilase/cyanide hydratase and apolipoprotein N-acyltransferase     | 3  | 6  | 4  | 244  | 16.7 | 0.69   |
| Pput_0891 | 148546135 | TonB-dependent siderophore receptor                                  | 3  | 8  | 7  | 318  | 9    | 0.4    |
| Pput_0894 | 148546138 | ornithine decarboxylase                                              | 3  | 4  | 3  | 235  | 7.5  | 0.36   |
| Pput_0897 | 148546141 | TonB-dependent siderophore receptor                                  | 1  | 1  | 1  | 31   | 1.1  | 0.04   |
| Pput_0902 | 148546146 | peptide chain release factor 3                                       | 1  | 4  | 4  | 103  | 8.1  | 0.26   |
| Pput_0906 | 148546150 | helix-turn-helix domain-containing protein                           | 1  | 1  | 1  | 38   | 2.9  | 0.12   |
| Pput_0917 | 148546160 | dipeptide transporter ATP-binding subunit                            | 1  | 2  | 2  | 88   | 9    | 0.22   |
| Pput_0918 | 148546161 | oligopeptide/dipeptide ABC transporter, ATPase subunit               | 1  | 1  | 1  | 41   | 3.4  | 0.11   |
| Pput_0921 | 148546164 | extracellular solute-binding protein                                 | 1  | 1  | 1  | 29   | 0.9  | 0.06   |
| Pput_0923 | 148546166 | extracellular solute-binding protein                                 | 2  | 2  | 1  | 63   | 1.7  | 0.12   |
| Pput_0924 | 148546167 | extracellular solute-binding protein                                 | 2  | 7  | 6  | 270  | 12.9 | 0.49   |
| Pput_0925 | 148546168 | hypothetical protein Pput_0925                                       | 2  | 4  | 2  | 111  | 7.1  | 0.64   |
| Pput_0927 | 148546170 | two component Fis family transcriptional regulator                   | 3  | 12 | 4  | 438  | 23   | 3.1    |
| Pput_0932 | 148546175 | PfpI family intracellular peptidase                                  | 2  | 4  | 2  | 148  | 12   | 0.8    |
| Pput_0936 | 148546179 | tartrate/fumarate subfamily Fe-S type hydro-lyase alpha subunit      | 18 | 43 | 15 | 1748 | 35.7 | 4.2    |
| Pput_0938 | 148546181 | hypothetical protein Pput_0938                                       | 1  | 1  | 1  | 31   | 3.3  | 0.11   |
| Pput_0939 | 148546182 | PAP2 (acid phosphatase) superfamily protein-like protein             | 1  | 1  | 1  | 33   | 4.1  | 0.14   |
| Pput_0940 | 148546183 | two component transcriptional regulator                              | 1  | 5  | 4  | 100  | 20.3 | 1      |
| Pput_0941 | 148546184 | integral membrane sensor signal transduction histidine kinase        | 2  | 2  | 2  | 65   | 3.9  | 0.16   |
| Pput_0942 | 148546185 | methyltransferase type 11                                            | 4  | 24 | 16 | 546  | 72.6 | 12.4   |
| Pput_0943 | 148546186 | lipopolysaccharide kinase                                            | 2  | 12 | 9  | 369  | 37.1 | 2.56   |
| Pput_0948 | 148546191 | periplasmic lipoprotein-like protein                                 | 2  | 18 | 11 | 726  | 43.8 | 3.53   |
| Pput_0952 | 148546195 | hypothetical protein Pput_0952                                       | 16 | 44 | 12 | 1628 | 28.6 | 4.44   |
| Pput_0953 | 148546196 | diguanylate cyclase/phosphodiesterase                                | 1  | 1  | 1  | 31   | 1.3  | 0.05   |
| Pput_0954 | 148546197 | superoxide dismutase                                                 | 4  | 6  | 2  | 305  | 8.1  | 0.89   |
| Pput_0957 | 148546200 | NAD-dependent epimerase/dehydratase                                  | 1  | 1  | 1  | 33   | 2.4  | 0.1    |
| Pput_0958 | 148546201 | hypothetical protein Pput_0958                                       | 1  | 4  | 4  | 173  | 25.6 | 0.59   |
| Pput_0961 | 148546204 | hypothetical protein Pput_0961                                       | 1  | 1  | 1  | 47   | 5.7  | 0.17   |
| Pput_0964 | 148546207 | hypothetical protein Pput_0964                                       | 2  | 7  | 4  | 308  | 18.3 | 1      |
| Pput_0968 | 148546211 | CaCA family Na(+)/Ca(+) antiporter                                   | 1  | 1  | 1  | 29   | 2.6  | 0.1    |
| Pput_0970 | 148546213 | aspartyl/glutamyl-tRNA amidotransferase subunit B                    | 4  | 25 | 16 | 703  | 35.3 | 2.72   |
| Pput_0971 | 148546214 | aspartyl/glutamyl-tRNA amidotransferase subunit A                    | 2  | 13 | 11 | 456  | 29.8 | 1.24   |
| Pput_0972 | 148546215 | aspartyl/glutamyl-tRNA amidotransferase subunit C                    | 1  | 1  | 1  | 53   | 10.5 | 0.38   |
| Pput_0973 | 148546216 | rod shape-determining protein MreB                                   | 4  | 24 | 15 | 974  | 49.3 | 4.01   |
| Pput_0977 | 148546220 | ribonuclease                                                         | 2  | 3  | 2  | 92   | 4.1  | 0.21   |
| Pput_0978 | 148546221 | hypothetical protein Pput_0978                                       | 1  | 1  | 1  | 30   | 0.8  | 0.03   |
| Pput_0980 | 148546223 | peptidase U62, modulator of DNA gyrase                               | 1  | 1  | 1  | 74   | 3.5  | 0.07   |
| Pput_0981 | 148546224 | hypothetical protein Pput_0981                                       | 4  | 11 | 8  | 259  | 39.3 | 3.18   |
| Pput_0982 | 148546225 | peptidase U62, modulator of DNA gyrase                               | 3  | 8  | 6  | 281  | 8.7  | 0.66   |
| Pput_0984 | 148546227 | fumarate hydratase                                                   | 1  | 1  | 1  | 40   | 3.5  | 0.08   |
| Pput_0985 | 148546228 | superoxide dismutase                                                 | 1  | 1  | 1  | 52   | 5.8  | 0.14   |
| Pput_0987 | 148546230 | phosphotransferase system, phosphocarrier protein HPr                | 3  | 3  | 2  | 127  | 13.3 | 1.23   |
| Pput_0988 | 148546231 | hypothetical protein Pput_0988                                       | 2  | 6  | 5  | 147  | 9.9  | 0.81   |
| Pput_0989 | 148546232 | PTS IIA-like nitrogen-regulatory protein PtsN                        | 1  | 1  | 1  | 41   | 5.8  | 0.23   |
| Pput_0990 | 148546233 | sigma 54 modulation protein/ribosomal protein S30EA                  | 2  | 3  | 1  | 131  | 12.7 | 1.15   |

|           |           |                                                                         |    |     |    |      |      |       |
|-----------|-----------|-------------------------------------------------------------------------|----|-----|----|------|------|-------|
| Pput_0991 | 148546234 | RNA polymerase factor sigma-54                                          | 5  | 17  | 14 | 580  | 26.6 | 1.58  |
| Pput_0992 | 148546235 | ABC transporter related                                                 | 2  | 8   | 6  | 443  | 37.3 | 1.68  |
| Pput_0993 | 148546236 | cell envelope biogenesis YhbN                                           | 4  | 12  | 7  | 427  | 31.6 | 4.33  |
| Pput_0994 | 148546237 | hypothetical protein Pput_0994                                          | 2  | 7   | 7  | 194  | 30   | 1.88  |
| Pput_0995 | 148546238 | 3-deoxy-D-manno-octulosonate 8-phosphate phosphatase                    | 4  | 7   | 4  | 252  | 13.2 | 1.6   |
| Pput_0996 | 148546239 | KpsF/GutQ family protein                                                | 2  | 5   | 3  | 247  | 12   | 0.59  |
| Pput_0999 | 148546242 | hypothetical protein Pput_0999                                          | 2  | 4   | 2  | 143  | 15.6 | 1.04  |
| Pput_1000 | 148546243 | toluene tolerance family protein                                        | 2  | 7   | 4  | 232  | 15.8 | 1.37  |
| Pput_1003 | 148546246 | UDP-N-acetylglucosamine 1-carboxyvinyltransferase                       | 5  | 11  | 7  | 367  | 20.2 | 1.07  |
| Pput_1004 | 148546247 | ATP phosphoribosyltransferase catalytic subunit                         | 2  | 10  | 5  | 350  | 27.5 | 2.3   |
| Pput_1005 | 148546248 | histidinol dehydrogenase                                                | 6  | 22  | 12 | 671  | 32   | 2.23  |
| Pput_1006 | 148546249 | histidinol-phosphate aminotransferase                                   | 2  | 17  | 12 | 440  | 29.3 | 2.38  |
| Pput_1010 | 148546253 | hypothetical protein Pput_1010                                          | 2  | 7   | 4  | 195  | 21.5 | 1.94  |
| Pput_1012 | 148546255 | nucleoid-associated protein NdpA                                        | 2  | 4   | 3  | 104  | 6.9  | 0.42  |
| Pput_1013 | 148546256 | histone family protein DNA-binding protein                              | 2  | 9   | 5  | 324  | 40.9 | 7.78  |
| Pput_1015 | 148546258 | valyl-tRNA synthetase                                                   | 3  | 11  | 8  | 252  | 9.9  | 0.41  |
| Pput_1017 | 148546260 | DNA polymerase III subunit chi                                          | 1  | 1   | 1  | 33   | 8.5  | 0.23  |
| Pput_1018 | 148546261 | leucyl aminopeptidase                                                   | 9  | 42  | 20 | 1554 | 31.6 | 4.17  |
| Pput_1019 | 148546262 | permease YjgP/YjgQ family protein                                       | 1  | 1   | 1  | 28   | 2.9  | 0.09  |
| Pput_1020 | 148546263 | permease YjgP/YjgQ family protein                                       | 2  | 5   | 4  | 217  | 8.2  | 0.52  |
| Pput_1022 | 148546265 | cold-shock DNA-binding domain-containing protein                        | 2  | 5   | 4  | 123  | 46.4 | 5.16  |
| Pput_1023 | 148546266 | glycine cleavage system T protein                                       | 2  | 12  | 9  | 393  | 34.9 | 1.51  |
| Pput_1024 | 148546267 | L-serine dehydratase 1                                                  | 2  | 2   | 1  | 70   | 2    | 0.16  |
| Pput_1025 | 148546268 | glycine dehydrogenase                                                   | 1  | 1   | 1  | 59   | 0.9  | 0.04  |
| Pput_1035 | 148546278 | hypothetical protein Pput_1035                                          | 1  | 6   | 5  | 133  | 35.2 | 3.41  |
| Pput_1036 | 148546279 | carbamate kinase                                                        | 1  | 8   | 6  | 219  | 26.9 | 1.35  |
| Pput_1037 | 148546280 | ornithine carbamoyltransferase                                          | 15 | 48  | 19 | 1373 | 67   | 10.76 |
| Pput_1038 | 148546281 | arginine deiminase                                                      | 16 | 78  | 21 | 2855 | 47.7 | 11.73 |
| Pput_1047 | 148546290 | glyceraldehyde-3-phosphate dehydrogenase, type I                        | 18 | 47  | 11 | 2077 | 29.4 | 7.08  |
| Pput_1048 | 148546291 | phosphoglucanate dehydratase                                            | 24 | 69  | 18 | 2389 | 36.3 | 5.39  |
| Pput_1049 | 148546292 | glucokinase                                                             | 5  | 18  | 10 | 703  | 34.8 | 2.72  |
| Pput_1050 | 148546293 | two component transcriptional regulator                                 | 1  | 2   | 2  | 47   | 8.1  | 0.27  |
| Pput_1051 | 148546294 | integral membrane sensor signal transduction histidine kinase           | 1  | 1   | 1  | 40   | 2.5  | 0.07  |
| Pput_1052 | 148546295 | N-acetylglucosamine 2-epimerase                                         | 2  | 2   | 2  | 61   | 2.6  | 0.16  |
| Pput_1053 | 148546296 | extracellular solute-binding protein                                    | 14 | 98  | 37 | 3060 | 76.2 | 36.27 |
| Pput_1056 | 148546299 | ABC transporter related                                                 | 10 | 17  | 6  | 773  | 13.5 | 1.64  |
| Pput_1057 | 148546300 | carbohydrate-selective porin OprB                                       | 25 | 51  | 12 | 2420 | 20.4 | 4.24  |
| Pput_1059 | 148546302 | DNA-binding transcriptional regulator HexR                              | 1  | 4   | 4  | 198  | 22.1 | 0.57  |
| Pput_1060 | 148546303 | glucose-6-phosphate 1-dehydrogenase                                     | 19 | 65  | 23 | 1730 | 33.7 | 6.68  |
| Pput_1061 | 148546304 | 6-phosphogluconolactonase                                               | 3  | 29  | 12 | 806  | 59.1 | 14.16 |
| Pput_1062 | 148546305 | keto-hydroxyglutarate-aldolase/keto-deoxy-phosphoglucanate aldolase     | 9  | 51  | 11 | 1022 | 50.4 | 9.74  |
| Pput_1065 | 148546308 | 2-isopropylmalate synthase                                              | 2  | 11  | 9  | 384  | 14.7 | 0.76  |
| Pput_1071 | 148546314 | inosine 5'-monophosphate dehydrogenase                                  | 13 | 48  | 15 | 1994 | 36.2 | 5.08  |
| Pput_1072 | 148546315 | GMP synthase                                                            | 10 | 40  | 24 | 1142 | 45   | 4.13  |
| Pput_1076 | 148546319 | CMP/dCMP deaminase, zinc-binding                                        | 1  | 2   | 2  | 62   | 10.7 | 0.5   |
| Pput_1077 | 148546320 | lytic transglycosylase, catalytic                                       | 2  | 2   | 2  | 95   | 2.1  | 0.14  |
| Pput_1078 | 148546321 | phosphoribosylformylglycinamide synthase                                | 13 | 37  | 15 | 1087 | 5.6  | 1.03  |
| Pput_1080 | 148546323 | Sec-independent protein translocase, TatC subunit                       | 1  | 1   | 1  | 29   | 7.9  | 0.13  |
| Pput_1081 | 148546324 | twin-arginine translocation protein, TatB subunit                       | 1  | 1   | 1  | 30   | 10.4 | 0.38  |
| Pput_1084 | 148546327 | hypothetical protein Pput_1084                                          | 1  | 3   | 3  | 75   | 4.3  | 0.16  |
| Pput_1099 | 148546342 | membrane carboxypeptidase (penicillin-binding protein)-like protein     | 2  | 2   | 2  | 62   | 1.4  | 0.06  |
| Pput_1101 | 148546344 | glutamate synthase (NADPH)                                              | 1  | 3   | 3  | 118  | 7.4  | 0.2   |
| Pput_1109 | 148546352 | ABC transporter related                                                 | 2  | 15  | 10 | 510  | 38.1 | 3.36  |
| Pput_1110 | 148546353 | polar amino acid ABC transporter, inner membrane subunit                | 2  | 2   | 1  | 72   | 4    | 0.3   |
| Pput_1111 | 148546354 | polar amino acid ABC transporter, inner membrane subunit                | 3  | 4   | 2  | 208  | 5.2  | 0.57  |
| Pput_1112 | 148546355 | extracellular solute-binding protein                                    | 10 | 104 | 29 | 3278 | 75.1 | 214   |
| Pput_1115 | 148546358 | DeoR family transcriptional regulator                                   | 1  | 1   | 1  | 67   | 3.5  | 0.12  |
| Pput_1116 | 148546359 | glycerol kinase                                                         | 1  | 2   | 2  | 46   | 2.2  | 0.14  |
| Pput_1118 | 148546361 | ybaK/ebcC protein                                                       | 2  | 7   | 5  | 191  | 35.3 | 2.1   |
| Pput_1119 | 148546362 | ABC transporter related                                                 | 1  | 1   | 1  | 40   | 3.5  | 0.09  |
| Pput_1120 | 148546363 | ornithine carbamoyltransferase                                          | 4  | 22  | 9  | 503  | 29.1 | 3.46  |
| Pput_1122 | 148546365 | glutaredoxin-like protein                                               | 2  | 9   | 5  | 331  | 29.6 | 2.96  |
| Pput_1123 | 148546366 | bacterioferritin                                                        | 3  | 26  | 15 | 677  | 66.2 | 28.5  |
| Pput_1125 | 148546368 | alkyl hydroperoxide reductase/ Thiol specific antioxidant/ Mal allergen | 6  | 74  | 10 | 1945 | 59.5 | 15.49 |
| Pput_1126 | 148546369 | ribonuclease T                                                          | 1  | 1   | 1  | 46   | 9.4  | 0.15  |
| Pput_1127 | 148546370 | dihydroorotase                                                          | 2  | 11  | 8  | 289  | 20.1 | 1.36  |
| Pput_1129 | 148546372 | argininosuccinate synthase                                              | 4  | 31  | 18 | 1005 | 39.5 | 3.74  |
| Pput_1131 | 148546374 | two component LuxR family transcriptional regulator                     | 1  | 1   | 1  | 25   | 10.2 | 0.15  |
| Pput_1137 | 148546380 | methionyl-tRNA synthetase                                               | 3  | 13  | 10 | 345  | 11.5 | 0.73  |
| Pput_1138 | 148546381 | hypothetical protein Pput_1138                                          | 2  | 6   | 4  | 172  | 14.3 | 0.55  |
| Pput_1139 | 148546382 | cold-shock DNA-binding domain-containing protein                        | 4  | 7   | 2  | 351  | 20.3 | 5.1   |
| Pput_1140 | 148546383 | deoxycytidine triphosphate deaminase                                    | 4  | 12  | 8  | 421  | 39.9 | 3.11  |
| Pput_1143 | 148546386 | DEAD/DEAH box helicase domain-containing protein                        | 1  | 1   | 1  | 31   | 1.1  | 0.04  |
| Pput_1144 | 148546387 | succinylglutamate desuccinylase/aspartoacylase                          | 1  | 1   | 1  | 29   | 2.4  | 0.09  |
| Pput_1145 | 148546388 | ATP-dependent DNA ligase                                                | 1  | 1   | 1  | 29   | 1.4  | 0.06  |
| Pput_1147 | 148546390 | penicillin amidase                                                      | 4  | 6   | 4  | 237  | 4.6  | 0.25  |
| Pput_1150 | 148546393 | synthetase, putative                                                    | 3  | 5   | 4  | 173  | 15.3 | 0.67  |
| Pput_1152 | 148546395 | pyridoxal-5'-phosphate-dependent enzyme, beta subunit                   | 1  | 5   | 4  | 162  | 16.3 | 0.72  |
| Pput_1154 | 148546397 | water stress/hypersensitive response protein                            | 1  | 1   | 1  | 29   | 7.2  | 0.2   |
| Pput_1155 | 148546398 | hypothetical protein Pput_1155                                          | 2  | 5   | 3  | 127  | 12.7 | 1.31  |
| Pput_1156 | 148546399 | hypothetical protein Pput_1156                                          | 1  | 1   | 1  | 82   | 6.1  | 0.21  |
| Pput_1157 | 148546400 | OmpA/MotB domain-containing protein                                     | 10 | 26  | 7  | 948  | 37   | 5.9   |
| Pput_1158 | 148546401 | OmpA/MotB domain-containing protein                                     | 2  | 2   | 2  | 102  | 6.3  | 0.3   |
| Pput_1162 | 148546405 | Beta-agarase                                                            | 1  | 1   | 1  | 40   | 1.2  | 0.04  |
| Pput_1164 | 148546407 | OmpA/MotB domain-containing protein                                     | 1  | 1   | 1  | 33   | 3.1  | 0.11  |
| Pput_1165 | 148546408 | pyridoxamine 5'-phosphate oxidase                                       | 1  | 5   | 5  | 131  | 28.4 | 1.05  |
| Pput_1167 | 148546410 | 17 kDa surface antigen                                                  | 5  | 23  | 8  | 908  | 48.1 | 9.51  |
| Pput_1169 | 148546412 | FAD dependent oxidoreductase                                            | 1  | 2   | 2  | 64   | 3.9  | 0.13  |
| Pput_1170 | 148546413 | membrane protein-like protein                                           | 1  | 1   | 1  | 47   | 5.4  | 0.16  |

|           |           |                                                                         |    |    |    |      |      |       |
|-----------|-----------|-------------------------------------------------------------------------|----|----|----|------|------|-------|
| Pput_1171 | 148546414 | ABC transporter related                                                 | 2  | 5  | 5  | 165  | 20.6 | 0.89  |
| Pput_1172 | 148546415 | leucine/isoleucine/valine transporter ATP-binding subunit               | 1  | 4  | 4  | 145  | 22.7 | 0.65  |
| Pput_1173 | 148546416 | leucine/isoleucine/valine transporter permease subunit                  | 1  | 1  | 1  | 25   | 3.1  | 0.08  |
| Pput_1175 | 148546418 | extracellular ligand-binding receptor                                   | 1  | 24 | 16 | 740  | 59   | 6.36  |
| Pput_1177 | 148546420 | 3-hydroxyisobutyrate dehydrogenase                                      | 1  | 5  | 5  | 210  | 26.1 | 0.77  |
| Pput_1179 | 148546422 | ATP-dependent helicase HepA                                             | 9  | 12 | 5  | 440  | 3.4  | 0.39  |
| Pput_1180 | 148546423 | hypothetical protein Pput_1180                                          | 1  | 1  | 1  | 64   | 5.2  | 0.15  |
| Pput_1186 | 148546429 | secretion protein HlyD family protein                                   | 2  | 2  | 2  | 65   | 3.8  | 0.24  |
| Pput_1191 | 148546434 | acetolactate synthase                                                   | 4  | 24 | 12 | 919  | 23.8 | 1.99  |
| Pput_1194 | 148546437 | asparaginase/glutaminase                                                | 3  | 3  | 1  | 85   | 2.7  | 0.33  |
| Pput_1196 | 148546439 | glutathione S-transferase domain-containing protein                     | 2  | 3  | 2  | 191  | 12.4 | 0.54  |
| Pput_1198 | 148546441 | LysR family transcriptional regulator                                   | 1  | 4  | 3  | 126  | 11.1 | 0.39  |
| Pput_1207 | 148546450 | bifunctional antitoxin/transcriptional repressor RelB                   | 1  | 1  | 1  | 26   | 10.1 | 0.45  |
| Pput_1209 | 148546452 | ribonucleotide-diphosphate reductase subunit beta                       | 1  | 6  | 5  | 253  | 12.5 | 0.58  |
| Pput_1210 | 148546453 | ribonucleotide-diphosphate reductase subunit alpha                      | 2  | 23 | 18 | 824  | 23.1 | 1.13  |
| Pput_1214 | 148546457 | dienelactone hydrolase                                                  | 2  | 5  | 4  | 199  | 15.6 | 0.77  |
| Pput_1221 | 148546464 | hypothetical protein Pput_1221                                          | 3  | 5  | 1  | 160  | 5.2  | 1.2   |
| Pput_1231 | 148546474 | hypothetical protein Pput_1231                                          | 1  | 1  | 1  | 30   | 1    | 0.04  |
| Pput_1234 | 148546477 | prolyl-tRNA synthetase                                                  | 3  | 19 | 15 | 512  | 23.6 | 1.39  |
| Pput_1235 | 148546478 | outer membrane porin                                                    | 9  | 18 | 9  | 737  | 19.7 | 1.6   |
| Pput_1236 | 148546479 | histidine triad (HIT) protein                                           | 1  | 4  | 3  | 162  | 29.5 | 1.42  |
| Pput_1238 | 148546481 | cold-shock DNA-binding domain-containing protein                        | 1  | 2  | 2  | 77   | 12.2 | 0.39  |
| Pput_1239 | 148546482 | Ferritin, Dps family protein                                            | 4  | 28 | 10 | 999  | 71.3 | 13.3  |
| Pput_1242 | 148546485 | aspartyl-tRNA synthetase                                                | 10 | 51 | 23 | 1806 | 35.4 | 5.56  |
| Pput_1243 | 148546486 | hypothetical protein Pput_1243                                          | 2  | 4  | 3  | 165  | 13.3 | 0.63  |
| Pput_1247 | 148546490 | Po-Pal system-associated acyl-CoA thioesterase                          | 1  | 1  | 1  | 83   | 6.7  | 0.22  |
| Pput_1248 | 148546491 | Tol-Pal system, TolQ                                                    | 4  | 16 | 9  | 473  | 30.3 | 3.84  |
| Pput_1249 | 148546492 | biopolymer transport, TolR                                              | 2  | 3  | 2  | 105  | 15.3 | 0.78  |
| Pput_1251 | 148546494 | translocation protein TolB                                              | 8  | 18 | 8  | 690  | 19.1 | 1.65  |
| Pput_1252 | 148546495 | peptidoglycan-associated lipoprotein                                    | 7  | 58 | 10 | 1132 | 22.9 | 31.65 |
| Pput_1255 | 148546498 | exsB protein                                                            | 1  | 2  | 2  | 85   | 8.5  | 0.34  |
| Pput_1259 | 148546502 | hypothetical protein Pput_1259                                          | 3  | 3  | 2  | 82   | 1.2  | 0.21  |
| Pput_1260 | 148546503 | quinolinate synthetase                                                  | 1  | 2  | 2  | 67   | 10.2 | 0.2   |
| Pput_1262 | 148546505 | peptidase M48, Ste24p                                                   | 2  | 3  | 2  | 132  | 5.4  | 0.21  |
| Pput_1263 | 148546506 | SirA family protein                                                     | 1  | 1  | 1  | 35   | 12.7 | 0.47  |
| Pput_1265 | 148546508 | alkyl hydroperoxide reductase/ Thiol specific antioxidant/ Mal allergen | 2  | 7  | 6  | 173  | 38.9 | 2.61  |
| Pput_1266 | 148546509 | glycine cleavage system regulatory protein-like protein                 | 2  | 5  | 3  | 133  | 10.8 | 1.08  |
| Pput_1267 | 148546510 | dihydrodipicolinate synthase                                            | 3  | 17 | 11 | 738  | 39   | 3.03  |
| Pput_1268 | 148546511 | hypothetical protein Pput_1268                                          | 5  | 24 | 14 | 819  | 39.9 | 3.85  |
| Pput_1270 | 148546513 | phosphoribosylaminoimidazole-succinocarboxamide synthase                | 2  | 20 | 17 | 454  | 46.6 | 9.9   |
| Pput_1278 | 148546521 | hypothetical protein Pput_1278                                          | 3  | 3  | 1  | 156  | 23.8 | 1.83  |
| Pput_1279 | 148546522 | malate:quinone oxidoreductase                                           | 2  | 3  | 2  | 158  | 4.6  | 0.19  |
| Pput_1282 | 148546525 | FAD dependent oxidoreductase                                            | 1  | 1  | 1  | 28   | 2.2  | 0.08  |
| Pput_1289 | 148546532 | molybdenum cofactor biosynthesis protein B                              | 5  | 10 | 4  | 420  | 29.1 | 2.3   |
| Pput_1290 | 148546533 | hypothetical protein Pput_1290                                          | 2  | 2  | 2  | 54   | 2.3  | 0.22  |
| Pput_1294 | 148546537 | cystathionine gamma-lyase                                               | 1  | 2  | 2  | 82   | 4.8  | 0.18  |
| Pput_1297 | 148546540 | ribonuclease D                                                          | 2  | 10 | 8  | 332  | 14.1 | 1.04  |
| Pput_1299 | 148546542 | D-isomer specific 2-hydroxyacid dehydrogenase, NAD-binding              | 1  | 1  | 1  | 36   | 2.9  | 0.11  |
| Pput_1300 | 148546543 | nitroreductase                                                          | 2  | 4  | 3  | 156  | 18.8 | 0.79  |
| Pput_1302 | 148546545 | hypothetical protein Pput_1302                                          | 1  | 1  | 1  | 35   | 1.5  | 0.08  |
| Pput_1306 | 148546548 | oligopeptidase B                                                        | 2  | 4  | 4  | 133  | 5.6  | 0.2   |
| Pput_1308 | 148546550 | glutamine amidotransferase, class-II                                    | 1  | 2  | 2  | 78   | 8.2  | 0.28  |
| Pput_1310 | 148546552 | LysR family transcriptional regulator                                   | 1  | 1  | 1  | 74   | 3.6  | 0.11  |
| Pput_1316 | 148546558 | ATPase                                                                  | 2  | 17 | 12 | 483  | 36.7 | 3.2   |
| Pput_1318 | 148546560 | cysteine synthase A                                                     | 3  | 42 | 16 | 1161 | 55.2 | 14.55 |
| Pput_1319 | 148546561 | aspartyl/asparaginyl beta-hydroxylase                                   | 2  | 3  | 2  | 122  | 8    | 0.32  |
| Pput_1324 | 148546566 | bifunctional isocitrate dehydrogenase kinase/phosphatase protein        | 1  | 2  | 2  | 48   | 4.4  | 0.12  |
| Pput_1326 | 148546568 | RNA-binding S1 domain-containing protein                                | 1  | 2  | 2  | 70   | 9.4  | 0.26  |
| Pput_1327 | 148546569 | hypothetical protein Pput_1327                                          | 1  | 2  | 2  | 51   | 16.7 | 0.62  |
| Pput_1328 | 148546570 | CsbD family protein                                                     | 1  | 1  | 1  | 76   | 18.6 | 0.68  |
| Pput_1330 | 148546572 | peptide deformylase                                                     | 1  | 1  | 1  | 43   | 4.5  | 0.19  |
| Pput_1333 | 148546575 | hypothetical protein Pput_1333                                          | 5  | 13 | 5  | 510  | 19.9 | 4.05  |
| Pput_1334 | 148546576 | DGPFAETKE family protein                                                | 2  | 4  | 3  | 139  | 14.9 | 1.46  |
| Pput_1335 | 148546577 | activator of Hsp90 ATPase 1 family protein                              | 3  | 8  | 3  | 327  | 21.1 | 2.1   |
| Pput_1337 | 148546579 | dehydratase                                                             | 2  | 7  | 3  | 364  | 26.3 | 1.75  |
| Pput_1339 | 148546581 | acyl-CoA synthetase                                                     | 1  | 2  | 2  | 72   | 3.6  | 0.12  |
| Pput_1340 | 148546582 | acyl-CoA synthetase                                                     | 2  | 9  | 7  | 289  | 13.1 | 0.62  |
| Pput_1344 | 148546586 | ATP-dependent helicase HrpA                                             | 7  | 7  | 4  | 198  | 0.8  | 0.14  |
| Pput_1345 | 148546587 | 3-oxoacyl-(acyl carrier protein) synthase III                           | 3  | 11 | 9  | 423  | 31.3 | 1.31  |
| Pput_1349 | 148546591 | peptidyl-prolyl cis-trans isomerase, cyclophilin type                   | 1  | 2  | 2  | 78   | 10.3 | 0.42  |
| Pput_1351 | 148546593 | LysR family transcriptional regulator                                   | 2  | 7  | 6  | 244  | 21.5 | 0.92  |
| Pput_1365 | 148546605 | amidohydrolase 2                                                        | 1  | 1  | 1  | 27   | 4.9  | 0.12  |
| Pput_1366 | 148546606 | LysR family transcriptional regulator                                   | 1  | 1  | 1  | 26   | 3.1  | 0.12  |
| Pput_1370 | 148546610 | transcriptional regulator IclR-like protein                             | 2  | 2  | 2  | 54   | 1.8  | 0.14  |
| Pput_1374 | 148546614 | transposase, mutator type                                               | 1  | 1  | 1  | 29   | 2.3  | 0.08  |
| Pput_1378 | 148546618 | DEAD/DEAH box helicase domain-containing protein                        | 7  | 13 | 6  | 457  | 17   | 1.04  |
| Pput_1382 | 148546622 | hypothetical protein Pput_1382                                          | 2  | 5  | 4  | 222  | 42   | 1.82  |
| Pput_1390 | 148546630 | methyl-accepting chemotaxis sensory transducer                          | 1  | 1  | 1  | 38   | 1.5  | 0.06  |
| Pput_1391 | 148546631 | DTW domain-containing protein                                           | 1  | 1  | 1  | 39   | 5    | 0.17  |
| Pput_1392 | 148546632 | TolC family type I secretion outer membrane protein                     | 1  | 3  | 3  | 67   | 7.3  | 0.24  |
| Pput_1394 | 148546634 | yecA family protein                                                     | 2  | 4  | 2  | 126  | 6.7  | 0.55  |
| Pput_1395 | 148546635 | ATP-dependent DNA helicase RecQ                                         | 2  | 2  | 1  | 67   | 1.3  | 0.1   |
| Pput_1396 | 148546636 | MarR family transcriptional regulator                                   | 2  | 12 | 8  | 418  | 44.1 | 5.25  |
| Pput_1398 | 148546638 | hypothetical protein Pput_1398                                          | 3  | 3  | 1  | 97   | 12.9 | 1.14  |
| Pput_1403 | 148546643 | helix-turn-helix domain-containing protein                              | 1  | 2  | 2  | 87   | 6.2  | 0.2   |
| Pput_1405 | 148546645 | nitroreductase                                                          | 3  | 26 | 10 | 962  | 47   | 10.54 |
| Pput_1406 | 148546646 | integral membrane sensor signal transduction histidine kinase           | 1  | 1  | 1  | 28   | 2.2  | 0.08  |
| Pput_1407 | 148546647 | protein of unknown function, Spy-related                                | 1  | 4  | 4  | 79   | 31.2 | 1.42  |
| Pput_1408 | 148546648 | two component transcriptional regulator                                 | 1  | 2  | 2  | 44   | 7.6  | 0.33  |



|           |           |                                                                         |    |    |    |      |      |       |
|-----------|-----------|-------------------------------------------------------------------------|----|----|----|------|------|-------|
| Pput_1410 | 148546650 | YciI-like protein                                                       | 1  | 1  | 1  | 37   | 9.1  | 0.38  |
| Pput_1413 | 148546653 | Sua5/YciO/YrdC/YwIC family protein                                      | 1  | 2  | 2  | 43   | 13.1 | 0.33  |
| Pput_1419 | 148546659 | FAD linked oxidase domain-containing protein                            | 3  | 4  | 4  | 162  | 2.4  | 0.13  |
| Pput_1421 | 148546661 | hypothetical protein Pput_1421                                          | 1  | 1  | 1  | 36   | 0.6  | 0.02  |
| Pput_1423 | 148546663 | pterin-4- $\alpha$ -carbinolamine dehydratase                           | 3  | 13 | 8  | 354  | 56.8 | 10.23 |
| Pput_1428 | 229328219 | acetyl-CoA synthetase                                                   | 7  | 37 | 20 | 1399 | 32.8 | 3.63  |
| Pput_1429 | 148546669 | cationic amino acid ABC transporter, periplasmic binding protein        | 2  | 13 | 9  | 342  | 38.3 | 2.74  |
| Pput_1430 | 148546670 | polar amino acid ABC transporter, inner membrane subunit                | 1  | 1  | 1  | 37   | 6.1  | 0.15  |
| Pput_1432 | 148546672 | ABC transporter related                                                 | 2  | 4  | 3  | 126  | 11.8 | 0.59  |
| Pput_1433 | 148546673 | helix-turn-helix domain-containing protein                              | 2  | 2  | 2  | 62   | 2.5  | 0.2   |
| Pput_1434 | 148546674 | /acetylornithine transaminase protein                                   | 3  | 6  | 6  | 274  | 14.8 | 0.57  |
| Pput_1435 | 148546675 | arginine N-succinyltransferase                                          | 2  | 2  | 2  | 87   | 3.5  | 0.2   |
| Pput_1436 | 148546676 | arginine N-succinyltransferase                                          | 1  | 8  | 7  | 275  | 26.9 | 1.13  |
| Pput_1437 | 148546677 | succinylglutamic semialdehyde dehydrogenase                             | 2  | 4  | 4  | 138  | 8.2  | 0.3   |
| Pput_1438 | 148546678 | succinylarginine dihydrolase                                            | 2  | 10 | 7  | 332  | 15.4 | 0.89  |
| Pput_1439 | 148546679 | hypothetical protein Pput_1439                                          | 2  | 4  | 3  | 178  | 35.4 | 1.93  |
| Pput_1440 | 148546680 | succinylglutamate desuccinylase                                         | 6  | 18 | 10 | 756  | 35.5 | 2.59  |
| Pput_1441 | 148546681 | alanyl-tRNA synthetase                                                  | 23 | 54 | 19 | 2264 | 16.9 | 2.24  |
| Pput_1442 | 148546682 | aspartate kinase                                                        | 14 | 65 | 25 | 1961 | 50.9 | 9.35  |
| Pput_1443 | 148546683 | carbon storage regulator                                                | 2  | 2  | 1  | 81   | 19.4 | 1.2   |
| Pput_1446 | 148546686 | phosphonate metabolism protein/1,5-bisphosphokinase (PRPP-forming) PhnN | 1  | 2  | 2  | 77   | 10.7 | 0.39  |
| Pput_1447 | 148546687 | amino acid permease-associated region                                   | 1  | 1  | 1  | 29   | 1.3  | 0.07  |
| Pput_1450 | 148546690 | dihydrolipoamide dehydrogenase                                          | 1  | 2  | 2  | 119  | 5    | 0.16  |
| Pput_1451 | 148546691 | branched-chain $\alpha$ -keto acid dehydrogenase subunit E2             | 3  | 8  | 5  | 320  | 15.8 | 0.77  |
| Pput_1452 | 148546692 | transketolase, central region                                           | 3  | 4  | 3  | 131  | 6    | 0.4   |
| Pput_1453 | 148546693 | 3-methyl-2-oxobutanoate dehydrogenase (2-methylpropanoyl-transferring)  | 3  | 6  | 4  | 210  | 7.1  | 0.52  |
| Pput_1454 | 148546694 | AsnC family transcriptional regulator                                   | 3  | 4  | 2  | 145  | 13   | 0.88  |
| Pput_1457 | 148546697 | type IV pilus assembly PilZ                                             | 2  | 7  | 5  | 253  | 16.6 | 1.09  |
| Pput_1461 | 148546701 | putative CheW protein                                                   | 1  | 3  | 3  | 131  | 11   | 0.36  |
| Pput_1462 | 148546702 | protein-glutamate O-methyltransferase                                   | 1  | 1  | 1  | 35   | 2.9  | 0.12  |
| Pput_1471 | 148546710 | flagellar basal body L-ring protein                                     | 1  | 1  | 1  | 26   | 6.1  | 0.16  |
| Pput_1472 | 148546711 | flagellar basal body P-ring protein                                     | 1  | 1  | 1  | 26   | 2.7  | 0.1   |
| Pput_1473 | 148546712 | flagellar rod assembly protein/muramidase FlgJ                          | 2  | 2  | 2  | 62   | 1.6  | 0.18  |
| Pput_1475 | 148546714 | flagellar hook-associated protein FlgL                                  | 1  | 1  | 1  | 28   | 2.1  | 0.07  |
| Pput_1476 | 148546715 | glycosyl transferase family protein                                     | 1  | 1  | 1  | 28   | 0.8  | 0.03  |
| Pput_1477 | 148546716 | hypothetical protein Pput_1477                                          | 1  | 5  | 5  | 147  | 6.3  | 0.2   |
| Pput_1479 | 148546718 | glucose-1-phosphate cytidyllyltransferase                               | 2  | 2  | 2  | 68   | 5.1  | 0.26  |
| Pput_1481 | 148546720 | DegT/DnrJ/EryC1/StrS aminotransferase                                   | 1  | 2  | 2  | 56   | 3.9  | 0.16  |
| Pput_1483 | 148546722 | N-acetylneuraminic acid synthase domain-containing protein              | 2  | 2  | 2  | 65   | 2.7  | 0.18  |
| Pput_1484 | 148546723 | thiamine pyrophosphate binding domain-containing protein                | 1  | 3  | 3  | 99   | 6.4  | 0.18  |
| Pput_1486 | 148546725 | NAD-dependent epimerase/dehydratase                                     | 1  | 1  | 1  | 29   | 4.4  | 0.11  |
| Pput_1488 | 148546727 | Beta-ketoacyl-acyl-carrier-protein synthase I                           | 1  | 2  | 2  | 93   | 7.4  | 0.24  |
| Pput_1489 | 148546728 | flagellin                                                               | 4  | 11 | 8  | 453  | 33.2 | 2     |
| Pput_1492 | 148546731 | flagellar protein FlhS                                                  | 2  | 2  | 2  | 86   | 9.2  | 0.56  |
| Pput_1494 | 148546733 | sigma-54 dependent transcriptional regulator                            | 2  | 12 | 7  | 431  | 13   | 0.85  |
| Pput_1498 | 148546737 | flagellar MS-ring protein                                               | 1  | 1  | 1  | 41   | 1.5  | 0.06  |
| Pput_1499 | 148546738 | flagellar motor switch protein G                                        | 4  | 4  | 2  | 123  | 3.2  | 0.4   |
| Pput_1501 | 148546740 | flagellum-specific ATP synthase                                         | 1  | 2  | 2  | 39   | 7.1  | 0.16  |
| Pput_1507 | 148546746 | flagellar basal body-associated protein FlhL                            | 1  | 1  | 1  | 34   | 3    | 0.21  |
| Pput_1508 | 148546747 | flagellar motor switch protein FlhM                                     | 2  | 2  | 2  | 95   | 2.8  | 0.2   |
| Pput_1509 | 148546748 | flagellar motor switch protein                                          | 1  | 1  | 1  | 46   | 6.5  | 0.24  |
| Pput_1522 | 148546761 | GntR family transcriptional regulator                                   | 1  | 1  | 1  | 31   | 3.7  | 0.12  |
| Pput_1523 | 148546762 | flagellar biosynthesis protein FlhA                                     | 1  | 1  | 1  | 35   | 1.5  | 0.05  |
| Pput_1525 | 148546764 | cobyrinic acid a,c-diamide synthase                                     | 2  | 4  | 2  | 253  | 7.9  | 0.56  |
| Pput_1526 | 148546765 | flagellar biosynthesis sigma factor                                     | 2  | 2  | 2  | 79   | 4.5  | 0.28  |
| Pput_1527 | 148546766 | response regulator receiver protein                                     | 2  | 2  | 1  | 134  | 8.6  | 0.54  |
| Pput_1528 | 148546767 | chemotaxis phosphatase, CheZ                                            | 1  | 4  | 4  | 74   | 18.3 | 0.62  |
| Pput_1529 | 148546768 | CheA signal transduction histidine kinase                               | 1  | 2  | 2  | 53   | 2.5  | 0.1   |
| Pput_1530 | 148546769 | chemotaxis-specific methyltransferase                                   | 1  | 2  | 2  | 74   | 10.8 | 0.2   |
| Pput_1532 | 148546771 | flagellar motor protein MotD                                            | 1  | 1  | 1  | 26   | 3.5  | 0.12  |
| Pput_1535 | 148546774 | putative CheW protein                                                   | 5  | 12 | 5  | 415  | 25.2 | 3.51  |
| Pput_1537 | 148546776 | hypothetical protein Pput_1537                                          | 2  | 2  | 2  | 65   | 1.1  | 0.08  |
| Pput_1539 | 148546778 | hypothetical protein Pput_1539                                          | 1  | 1  | 1  | 26   | 1.7  | 0.07  |
| Pput_1543 | 148546782 | Heme exporter protein D (CcmD)                                          | 1  | 1  | 1  | 30   | 12.1 | 0.63  |
| Pput_1547 | 148546786 | cytochrome C biogenesis protein                                         | 1  | 2  | 2  | 83   | 17.7 | 0.47  |
| Pput_1549 | 148546788 | hypothetical protein Pput_1549                                          | 2  | 3  | 2  | 80   | 5.8  | 0.52  |
| Pput_1551 | 148546790 | D-isomer specific 2-hydroxyacid dehydrogenase, NAD-binding              | 2  | 6  | 5  | 211  | 23.1 | 0.83  |
| Pput_1552 | 148546791 | PhzF family phenazine biosynthesis protein                              | 1  | 7  | 6  | 306  | 34.7 | 1.39  |
| Pput_1553 | 148546792 | glutathione-dependent formaldehyde-activating, GFA                      | 1  | 1  | 1  | 39   | 7.4  | 0.25  |
| Pput_1559 | 148546798 | AsnC family transcriptional regulator                                   | 1  | 1  | 1  | 44   | 11   | 0.23  |
| Pput_1565 | 148546803 | sulfate ABC transporter, periplasmic sulfate-binding protein            | 1  | 2  | 2  | 133  | 8.4  | 0.22  |
| Pput_1570 | 148546808 | 2-hydroxy-3-oxopropionate reductase                                     | 2  | 5  | 4  | 182  | 16.2 | 0.7   |
| Pput_1574 | 148546812 | TetR family transcriptional regulator                                   | 3  | 8  | 5  | 314  | 28.1 | 1.87  |
| Pput_1576 | 148546814 | nucleoside-binding outer membrane protein-like protein                  | 1  | 1  | 1  | 25   | 1.9  | 0.13  |
| Pput_1580 | 148546818 | ureidoglycolate hydrolase                                               | 1  | 3  | 3  | 101  | 17.4 | 0.75  |
| Pput_1581 | 148546819 | hypothetical protein Pput_1581                                          | 1  | 1  | 1  | 33   | 5.3  | 0.2   |
| Pput_1582 | 148546820 | chitin deacetylase                                                      | 1  | 2  | 2  | 48   | 9.7  | 0.22  |
| Pput_1585 | 148546823 | GntR family transcriptional regulator                                   | 1  | 4  | 3  | 207  | 17.5 | 0.62  |
| Pput_1587 | 148546825 | guanine deaminase                                                       | 1  | 1  | 1  | 30   | 1.8  | 0.08  |
| Pput_1588 | 148546826 | xanthine dehydrogenase accessory protein XdhC                           | 1  | 1  | 1  | 31   | 4.3  | 0.12  |
| Pput_1589 | 148546827 | xanthine dehydrogenase, molybdopterin binding subunit                   | 1  | 1  | 1  | 34   | 1.1  | 0.04  |
| Pput_1591 | 148546829 | GntR family transcriptional regulator                                   | 1  | 6  | 6  | 144  | 25.6 | 1.33  |
| Pput_1592 | 148546830 | chromosome segregation protein SMC                                      | 2  | 2  | 2  | 61   | 0.6  | 0.06  |
| Pput_1593 | 148546831 | cell division protein ZipA                                              | 4  | 9  | 7  | 397  | 27.3 | 1.25  |
| Pput_1594 | 148546832 | NAD-dependent DNA ligase LigA                                           | 1  | 1  | 1  | 36   | 1.3  | 0.04  |
| Pput_1595 | 148546833 | MerR family transcriptional regulator                                   | 1  | 1  | 1  | 27   | 6.5  | 0.25  |
| Pput_1598 | 148546836 | extracellular solute-binding protein                                    | 1  | 1  | 1  | 29   | 3    | 0.12  |
| Pput_1600 | 148546838 | hypothetical protein Pput_1600                                          | 3  | 3  | 2  | 113  | 8.1  | 0.99  |
| Pput_1603 | 148546841 | CRP/FNR family transcriptional regulator                                | 1  | 1  | 1  | 31   | 3.3  | 0.14  |

|           |           |                                                                      |    |     |    |       |      |       |
|-----------|-----------|----------------------------------------------------------------------|----|-----|----|-------|------|-------|
| Pput_1604 | 148546842 | coproporphyrinogen III oxidase                                       | 2  | 3   | 2  | 78    | 4.3  | 0.21  |
| Pput_1607 | 148546845 | heavy metal translocating P-type ATPase                              | 1  | 1   | 1  | 33    | 1.2  | 0.04  |
| Pput_1608 | 148546846 | hypothetical protein Pput_1608                                       | 2  | 6   | 4  | 147   | 15.3 | 1.14  |
| Pput_1610 | 148546848 | cytochrome c oxidase, cbb3-type, subunit III                         | 4  | 5   | 3  | 172   | 4.3  | 0.52  |
| Pput_1612 | 148546850 | cytochrome c oxidase, cbb3-type, subunit II                          | 4  | 12  | 5  | 380   | 19.8 | 2.4   |
| Pput_1613 | 148546851 | cytochrome c oxidase, cbb3-type, subunit I                           | 2  | 2   | 1  | 124   | 2.5  | 0.14  |
| Pput_1615 | 148546853 | cytochrome c oxidase, cbb3-type, subunit III                         | 1  | 2   | 2  | 37    | 5.4  | 0.23  |
| Pput_1617 | 148546855 | cytochrome c oxidase, cbb3-type, subunit II                          | 3  | 9   | 4  | 227   | 14.4 | 1.81  |
| Pput_1619 | 148546857 | hypothetical protein Pput_1619                                       | 1  | 1   | 1  | 59    | 7    | 0.15  |
| Pput_1620 | 148546858 | hypothetical protein Pput_1620                                       | 2  | 2   | 1  | 124   | 11.7 | 0.76  |
| Pput_1621 | 148546859 | exonuclease, RNase T and DNA polymerase III                          | 1  | 1   | 1  | 43    | 6    | 0.18  |
| Pput_1624 | 148546862 | peptide synthase                                                     | 2  | 2   | 1  | 72    | 0.4  | 0.02  |
| Pput_1630 | 148546868 | aldehyde oxidase and xanthine dehydrogenase, molybdopterin binding   | 1  | 5   | 5  | 108   | 5.9  | 0.19  |
| Pput_1632 | 148546870 | gluconate 2-dehydrogenase acceptor subunit                           | 1  | 1   | 1  | 25    | 4.7  | 0.08  |
| Pput_1636 | 148546874 | GAD-like protein                                                     | 1  | 1   | 1  | 30    | 4.4  | 0.16  |
| Pput_1650 | 148546888 | electron-transferring-flavoprotein dehydrogenase                     | 3  | 9   | 6  | 259   | 11.4 | 0.6   |
| Pput_1651 | 148546889 | electron transfer flavoprotein, alpha/beta-subunit-like protein      | 6  | 38  | 17 | 1673  | 72.3 | 20.27 |
| Pput_1652 | 148546890 | electron transfer flavoprotein, alpha subunit-like protein           | 6  | 20  | 8  | 709   | 37.5 | 3.68  |
| Pput_1653 | 148546891 | amino acid ABC transporter periplasmic protein                       | 1  | 3   | 3  | 55    | 12.5 | 0.43  |
| Pput_1654 | 148546892 | hypothetical protein Pput_1654                                       | 1  | 1   | 1  | 66    | 8.5  | 0.3   |
| Pput_1655 | 148546893 | OmpA/MotB domain-containing protein                                  | 2  | 2   | 2  | 79    | 3.3  | 0.26  |
| Pput_1656 | 148546894 | GntR family transcriptional regulator                                | 2  | 2   | 2  | 78    | 2.4  | 0.14  |
| Pput_1659 | 148546897 | lipid-binding START domain-containing protein                        | 1  | 7   | 7  | 190   | 34.2 | 2     |
| Pput_1660 | 148546898 | type II citrate synthase                                             | 13 | 39  | 16 | 1310  | 46.9 | 4.5   |
| Pput_1661 | 148546899 | succinate dehydrogenase, cytochrome b556 subunit                     | 3  | 4   | 2  | 149   | 16.4 | 1.21  |
| Pput_1662 | 148546900 | succinate dehydrogenase, hydrophobic membrane anchor protein         | 8  | 9   | 2  | 484   | 15.6 | 2.69  |
| Pput_1663 | 148546901 | succinate dehydrogenase flavoprotein subunit                         | 21 | 106 | 27 | 3677  | 39.8 | 9.89  |
| Pput_1664 | 148546902 | succinate dehydrogenase iron-sulfur subunit                          | 10 | 39  | 13 | 1101  | 47.4 | 9.23  |
| Pput_1665 | 148546903 | 2-oxoglutarate dehydrogenase E1 component                            | 54 | 342 | 40 | 10446 | 26.3 | 14.94 |
| Pput_1666 | 148546904 | dihydrolipoamide succinyltransferase                                 | 21 | 86  | 27 | 2921  | 44.7 | 21.37 |
| Pput_1667 | 148546905 | dihydrolipoamide dehydrogenase                                       | 38 | 319 | 33 | 10109 | 63.8 | 60.14 |
| Pput_1668 | 148546906 | succinyl-CoA synthetase subunit beta                                 | 33 | 295 | 29 | 8639  | 70.1 | 56.4  |
| Pput_1669 | 148546907 | succinyl-CoA synthetase subunit alpha                                | 27 | 183 | 23 | 5178  | 70.1 | 80.53 |
| Pput_1678 | 148546916 | TonB-dependent siderophore receptor                                  | 1  | 1   | 1  | 25    | 1.3  | 0.04  |
| Pput_1684 | 148546922 | ABC transporter related                                              | 1  | 1   | 1  | 27    | 1.4  | 0.05  |
| Pput_1686 | 148546924 | hypothetical protein Pput_1686                                       | 6  | 24  | 6  | 957   | 75.6 | 32.24 |
| Pput_1687 | 148546925 | thioesterase superfamily protein                                     | 1  | 1   | 1  | 27    | 5.7  | 0.22  |
| Pput_1689 | 148546927 | heat shock protein 90                                                | 19 | 75  | 32 | 2809  | 48.4 | 6.81  |
| Pput_1690 | 148546928 | dienelactone hydrolase                                               | 5  | 27  | 10 | 1212  | 61.4 | 10.12 |
| Pput_1693 | 148546931 | 3-oxoacyl-(acyl carrier protein) synthase I                          | 3  | 20  | 13 | 769   | 45.3 | 3.32  |
| Pput_1694 | 148546932 | 3-hydroxydecanoyl-(acyl carrier protein) dehydratase                 | 7  | 29  | 10 | 832   | 39.8 | 12.74 |
| Pput_1695 | 148546933 | integral membrane sensor hybrid histidine kinase                     | 5  | 5   | 2  | 167   | 1.2  | 0.25  |
| Pput_1698 | 148546936 | NAD(P)H-dependent glycerol-3-phosphate dehydrogenase                 | 3  | 8   | 6  | 207   | 19.9 | 1     |
| Pput_1699 | 148546937 | hypothetical protein Pput_1699                                       | 2  | 2   | 1  | 122   | 20.9 | 0.62  |
| Pput_1704 | 148546942 | hypothetical protein Pput_1704                                       | 2  | 3   | 3  | 72    | 10.6 | 0.41  |
| Pput_1711 | 148546949 | two component transcriptional regulator                              | 1  | 1   | 1  | 29    | 5.6  | 0.15  |
| Pput_1712 | 148546950 | LysR family transcriptional regulator                                | 1  | 1   | 1  | 26    | 2.3  | 0.11  |
| Pput_1714 | 148546952 | TonB-dependent siderophore receptor                                  | 1  | 4   | 4  | 125   | 5.6  | 0.2   |
| Pput_1716 | 148546954 | binding-protein-dependent transport systems inner membrane component | 1  | 1   | 1  | 27    | 2.4  | 0.1   |
| Pput_1717 | 148546955 | binding-protein-dependent transport systems inner membrane component | 1  | 1   | 1  | 24    | 2.8  | 0.1   |
| Pput_1718 | 148546956 | extracellular solute-binding protein                                 | 1  | 2   | 2  | 30    | 3.3  | 0.11  |
| Pput_1721 | 148546959 | hydroxyacylglutathione hydrolase                                     | 1  | 1   | 1  | 60    | 4.6  | 0.13  |
| Pput_1723 | 148546961 | ribonuclease H                                                       | 1  | 1   | 1  | 51    | 6.8  | 0.23  |
| Pput_1725 | 148546963 | lysine decarboxylase                                                 | 1  | 3   | 3  | 79    | 4.7  | 0.14  |
| Pput_1727 | 148546965 | NADPH-dependent FMN reductase                                        | 6  | 18  | 6  | 630   | 25.8 | 4.31  |
| Pput_1734 | 148546972 | NADH dehydrogenase subunit N                                         | 1  | 1   | 1  | 31    | 1.8  | 0.07  |
| Pput_1739 | 148546977 | NADH dehydrogenase subunit I                                         | 7  | 49  | 10 | 1372  | 48.9 | 16.97 |
| Pput_1741 | 148546979 | NADH dehydrogenase subunit G                                         | 7  | 26  | 16 | 821   | 16.4 | 1.1   |
| Pput_1742 | 148546980 | NADH dehydrogenase I subunit F                                       | 2  | 13  | 11 | 390   | 29.4 | 1.38  |
| Pput_1743 | 148546981 | NADH dehydrogenase subunit E                                         | 1  | 2   | 2  | 72    | 10.3 | 0.47  |
| Pput_1744 | 148546982 | bifunctional NADH:ubiquinone oxidoreductase subunit C/D              | 16 | 57  | 21 | 1752  | 32   | 3.9   |
| Pput_1745 | 148546983 | NADH dehydrogenase subunit B                                         | 2  | 7   | 6  | 224   | 33.8 | 1.44  |
| Pput_1746 | 148546984 | NADH dehydrogenase subunit A                                         | 2  | 6   | 3  | 191   | 20.4 | 1.57  |
| Pput_1748 | 148546986 | isocitrate lyase                                                     | 16 | 54  | 19 | 1695  | 40.1 | 6.73  |
| Pput_1750 | 148546988 | hypothetical protein Pput_1750                                       | 1  | 1   | 1  | 28    | 2    | 0.09  |
| Pput_1753 | 148546991 | elongation factor G                                                  | 7  | 41  | 22 | 1181  | 27.7 | 2.53  |
| Pput_1754 | 148546992 | hypothetical protein Pput_1754                                       | 2  | 2   | 1  | 73    | 7.5  | 0.42  |
| Pput_1759 | 148546997 | hypothetical protein Pput_1759                                       | 1  | 1   | 1  | 31    | 4.2  | 0.21  |
| Pput_1760 | 148546998 | glutathione S-transferase domain-containing protein                  | 1  | 5   | 5  | 98    | 24.7 | 0.96  |
| Pput_1764 | 148547002 | helix-turn-helix domain-containing protein                           | 1  | 1   | 1  | 32    | 4.7  | 0.28  |
| Pput_1765 | 148547003 | two component LuxR family transcriptional regulator                  | 1  | 1   | 1  | 68    | 5.7  | 0.16  |
| Pput_1772 | 148547009 | putative prophage repressor                                          | 1  | 1   | 1  | 86    | 6    | 0.16  |
| Pput_1774 | 148547011 | carbamoyl-phosphate synthase L chain, ATP-binding                    | 1  | 3   | 3  | 93    | 5.7  | 0.17  |
| Pput_1776 | 148547013 | propionyl-CoA carboxylase                                            | 1  | 5   | 5  | 107   | 9.7  | 0.37  |
| Pput_1777 | 148547014 | acyl-CoA dehydrogenase domain-containing protein                     | 2  | 5   | 4  | 177   | 15.5 | 0.49  |
| Pput_1782 | 148547017 | hypothetical protein Pput_1782                                       | 1  | 1   | 1  | 24    | 4.5  | 0.09  |
| Pput_1783 | 148547018 | alpha amylase, catalytic region                                      | 1  | 1   | 1  | 43    | 1.2  | 0.05  |
| Pput_1785 | 148547020 | glycogen branching enzyme                                            | 1  | 3   | 3  | 100   | 5.7  | 0.14  |
| Pput_1788 | 148547023 | glycogen debranching enzyme GlgX                                     | 1  | 3   | 3  | 77    | 3.6  | 0.14  |
| Pput_1789 | 148547024 | hypothetical protein Pput_1789                                       | 2  | 5   | 3  | 113   | 27.3 | 2.91  |
| Pput_1790 | 148547025 | malto-oligosyltrehalose synthase                                     | 1  | 1   | 1  | 43    | 1    | 0.04  |
| Pput_1791 | 148547026 | 4-alpha-glucanotransferase                                           | 1  | 1   | 1  | 24    | 1.5  | 0.05  |
| Pput_1795 | 148547030 | 6-phosphogluconate dehydrogenase-like protein                        | 3  | 9   | 7  | 290   | 19.6 | 1.12  |
| Pput_1796 | 148547031 | glucose-6-phosphate 1-dehydrogenase                                  | 2  | 2   | 2  | 66    | 3.4  | 0.14  |
| Pput_1800 | 148547035 | dihydropyrimidine dehydrogenase                                      | 1  | 1   | 1  | 48    | 2.8  | 0.08  |
| Pput_1801 | 148547036 | putative oxidoreductase                                              | 16 | 16  | 1  | 548   | 2.5  | 1.12  |
| Pput_1802 | 148547037 | phenylhydantoinase                                                   | 2  | 4   | 3  | 123   | 7.1  | 0.29  |
| Pput_1804 | 148547039 | allantoate amidohydrolase                                            | 1  | 1   | 1  | 25    | 3.7  | 0.08  |
| Pput_1806 | 148547041 | Lipocalin family protein                                             | 5  | 23  | 13 | 511   | 40.3 | 7.18  |

|           |           |                                                                      |    |     |    |      |      |       |
|-----------|-----------|----------------------------------------------------------------------|----|-----|----|------|------|-------|
| Pput_1808 | 148547043 | enoyl-CoA hydratase                                                  | 1  | 2   | 2  | 95   | 9.3  | 0.26  |
| Pput_1809 | 148547044 | NADH pyrophosphatase                                                 | 1  | 2   | 2  | 85   | 8.3  | 0.25  |
| Pput_1812 | 148547047 | alpha/beta hydrolase fold                                            | 1  | 11  | 9  | 283  | 44.6 | 2.65  |
| Pput_1815 | 148547050 | GCN5-related N-acetyltransferase                                     | 2  | 2   | 1  | 102  | 6.3  | 0.48  |
| Pput_1816 | 148547051 | cupin 4 family protein                                               | 1  | 2   | 2  | 118  | 6.4  | 0.18  |
| Pput_1817 | 148547052 | adenylosuccinate lyase                                               | 4  | 19  | 14 | 485  | 40.3 | 2.2   |
| Pput_1818 | 148547053 | hypothetical protein Pput_1818                                       | 3  | 5   | 3  | 165  | 4.8  | 0.67  |
| Pput_1819 | 148547054 | tRNA-specific 2-thiouridylase MnmA                                   | 1  | 1   | 1  | 70   | 5.1  | 0.09  |
| Pput_1820 | 148547055 | NUDIX hydrolase                                                      | 2  | 3   | 2  | 114  | 14.4 | 0.74  |
| Pput_1821 | 148547056 | isocitrate dehydrogenase, NADP-dependent                             | 19 | 81  | 29 | 2334 | 35.7 | 6.16  |
| Pput_1822 | 148547057 | isocitrate dehydrogenase, NADP-dependent                             | 11 | 34  | 14 | 899  | 43.1 | 3.89  |
| Pput_1825 | 148547060 | ATP-dependent Clp protease, ATP-binding subunit clpA                 | 1  | 4   | 4  | 157  | 5.8  | 0.19  |
| Pput_1826 | 148547061 | translation initiation factor IF-1                                   | 2  | 4   | 3  | 83   | 25   | 2.46  |
| Pput_1830 | 148547065 | outer-membrane lipoprotein carrier protein                           | 1  | 2   | 2  | 88   | 11.6 | 0.36  |
| Pput_1831 | 148547066 | recombination factor protein RarA                                    | 3  | 4   | 2  | 99   | 2    | 0.24  |
| Pput_1833 | 148547068 | seryl-tRNA synthetase                                                | 8  | 20  | 9  | 607  | 14.3 | 1.7   |
| Pput_1834 | 148547069 | uroporphyrin-III C-methyltransferase                                 | 1  | 6   | 6  | 261  | 16.2 | 0.54  |
| Pput_1835 | 148547070 | glutathione S-transferase-like protein                               | 2  | 3   | 2  | 125  | 6.9  | 0.31  |
| Pput_1836 | 148547071 | hypothetical protein Pput_1836                                       | 2  | 2   | 2  | 73   | 3.9  | 0.2   |
| Pput_1840 | 148547075 | sulfur transfer complex subunit TusD                                 | 1  | 1   | 1  | 30   | 7    | 0.25  |
| Pput_1845 | 148547079 | LysR family transcriptional regulator                                | 1  | 1   | 1  | 33   | 4.5  | 0.12  |
| Pput_1849 | 148547083 | pyruvate kinase                                                      | 1  | 1   | 1  | 38   | 2.5  | 0.07  |
| Pput_1853 | 148547086 | short chain dehydrogenase                                            | 1  | 1   | 1  | 30   | 3.6  | 0.14  |
| Pput_1866 | 148547097 | TetR family transcriptional regulator                                | 1  | 1   | 1  | 29   | 7    | 0.17  |
| Pput_1868 | 148547099 | Na <sup>+</sup> /H <sup>+</sup> antiporter NhaA                      | 1  | 1   | 1  | 27   | 3.3  | 0.08  |
| Pput_1876 | 148547106 | oligogalacturonate-specific porin                                    | 1  | 1   | 1  | 26   | 4.6  | 0.13  |
| Pput_1877 | 148547107 | mandelate racemase/muconate lactonizing protein                      | 1  | 1   | 1  | 28   | 2.1  | 0.09  |
| Pput_1885 | 148547115 | GntR domain-containing protein                                       | 1  | 1   | 1  | 34   | 4    | 0.14  |
| Pput_1889 | 148547119 | aldehyde oxidase and xanthine dehydrogenase, molybdopterin binding   | 2  | 6   | 1  | 74   | 0.7  | 0.06  |
| Pput_1891 | 148547121 | MarR family transcriptional regulator                                | 1  | 2   | 2  | 113  | 11.4 | 0.49  |
| Pput_1892 | 148547122 | hypothetical protein Pput_1892                                       | 2  | 2   | 1  | 62   | 2.6  | 0.2   |
| Pput_1898 | 148547128 | outer membrane porin                                                 | 2  | 2   | 1  | 53   | 1.9  | 0.16  |
| Pput_1902 | 148547132 | diguanylate cyclase                                                  | 1  | 1   | 1  | 36   | 1.9  | 0.07  |
| Pput_1909 | 148547139 | short chain dehydrogenase                                            | 1  | 1   | 1  | 35   | 3.5  | 0.14  |
| Pput_1910 | 148547140 | aminoglycoside phosphotransferase                                    | 1  | 1   | 1  | 27   | 3.9  | 0.09  |
| Pput_1911 | 148547141 | sterol-binding domain-containing protein                             | 1  | 4   | 2  | 274  | 24.8 | 1.45  |
| Pput_1913 | 148547143 | putative periplasmic protease                                        | 2  | 7   | 7  | 236  | 15.3 | 0.82  |
| Pput_1932 | 148547157 | alcohol dehydrogenase                                                | 9  | 45  | 13 | 2138 | 44.6 | 8.13  |
| Pput_1934 | 148547159 | DoxX family protein                                                  | 1  | 1   | 1  | 44   | 5.8  | 0.23  |
| Pput_1938 | 148547163 | carbon storage regulator                                             | 2  | 8   | 6  | 215  | 44.6 | 15.88 |
| Pput_1942 | 148547167 | molybdenum ABC transporter, periplasmic molybdate-binding protein    | 1  | 1   | 1  | 51   | 5.6  | 0.14  |
| Pput_1945 | 148547170 | hypothetical protein Pput_1945                                       | 2  | 4   | 2  | 116  | 24   | 1.73  |
| Pput_1948 | 148547173 | cytochrome c, class I                                                | 1  | 1   | 1  | 31   | 3.3  | 0.11  |
| Pput_1949 | 148547174 | UTP-glucose-1-phosphate uridylyltransferase                          | 1  | 14  | 11 | 468  | 42.3 | 3.93  |
| Pput_1950 | 148547175 | glutathione reductase                                                | 1  | 4   | 4  | 184  | 13.1 | 0.34  |
| Pput_1955 | 148547180 | extracellular solute-binding protein                                 | 2  | 11  | 8  | 465  | 28.7 | 1.72  |
| Pput_1956 | 148547181 | GTP cyclohydrolase II-like protein                                   | 1  | 1   | 1  | 30   | 2.9  | 0.09  |
| Pput_1958 | 148547183 | alpha/beta hydrolase domain-containing protein                       | 1  | 1   | 1  | 31   | 2.1  | 0.1   |
| Pput_1961 | 148547186 | MbtH domain-containing protein                                       | 1  | 1   | 1  | 37   | 9.6  | 0.48  |
| Pput_1963 | 148547188 | isochorismatase hydrolase                                            | 3  | 10  | 5  | 426  | 30.6 | 2.57  |
| Pput_1964 | 148547189 | hypothetical protein Pput_1964                                       | 1  | 1   | 1  | 27   | 2.6  | 0.1   |
| Pput_1978 | 148547201 | phage integrase family protein                                       | 1  | 1   | 1  | 26   | 2.9  | 0.14  |
| Pput_1980 | 148547203 | glutathione-dependent formaldehyde-activating, GFA                   | 5  | 6   | 1  | 170  | 6.3  | 1.2   |
| Pput_1987 | 148547209 | GntR family transcriptional regulator                                | 2  | 2   | 1  | 84   | 2.1  | 0.18  |
| Pput_1989 | 148547211 | alginate lyase 2                                                     | 1  | 1   | 1  | 75   | 6.3  | 0.16  |
| Pput_1991 | 148547213 | putative phage repressor                                             | 1  | 1   | 1  | 43   | 3.1  | 0.12  |
| Pput_1995 | 148547217 | shikimate 5-dehydrogenase                                            | 2  | 2   | 2  | 100  | 3.7  | 0.26  |
| Pput_1996 | 148547218 | hypothetical protein Pput_1996                                       | 1  | 2   | 2  | 56   | 28.8 | 1.11  |
| Pput_1997 | 148547219 | lactoylglutathione lyase                                             | 2  | 3   | 2  | 95   | 4    | 0.61  |
| Pput_1998 | 148547220 | hypothetical protein Pput_1998                                       | 3  | 20  | 10 | 502  | 57.5 | 24.66 |
| Pput_2000 | 148547222 | precorrin 6A synthase                                                | 1  | 1   | 1  | 36   | 3.2  | 0.14  |
| Pput_2004 | 148547226 | CheB methyltransferase                                               | 1  | 1   | 1  | 36   | 2.6  | 0.19  |
| Pput_2008 | 148547230 | 3-hydroxybutyryl-CoA dehydrogenase                                   | 1  | 1   | 1  | 62   | 3.5  | 0.13  |
| Pput_2009 | 148547231 | beta-ketothiolase                                                    | 1  | 4   | 4  | 134  | 11.7 | 0.42  |
| Pput_2015 | 148547237 | hypothetical protein Pput_2015                                       | 2  | 5   | 4  | 214  | 34.8 | 2.02  |
| Pput_2016 | 148547238 | glycolate oxidase iron-sulfur subunit                                | 2  | 2   | 1  | 57   | 2.2  | 0.16  |
| Pput_2017 | 148547239 | glycolate oxidase FAD binding subunit                                | 1  | 1   | 1  | 53   | 3.4  | 0.1   |
| Pput_2019 | 148547241 | DNA-binding transcriptional regulator GlcC                           | 1  | 1   | 1  | 43   | 3.5  | 0.13  |
| Pput_2021 | 148547243 | glutathione S-transferase domain-containing protein                  | 1  | 1   | 1  | 57   | 4.3  | 0.16  |
| Pput_2022 | 148547244 | peptidoglycan glycosyltransferase                                    | 1  | 1   | 1  | 24   | 1.3  | 0.05  |
| Pput_2024 | 148547246 | outer membrane porin                                                 | 1  | 1   | 1  | 33   | 1.2  | 0.08  |
| Pput_2048 | 148547270 | ethanolamine utilisation protein, EutH                               | 1  | 1   | 1  | 25   | 2.2  | 0.09  |
| Pput_2054 | 148547276 | muconolactone Delta-isomerase                                        | 2  | 2   | 1  | 52   | 14.6 | 0.72  |
| Pput_2057 | 148547279 | diguanylate cyclase/phosphodiesterase with PAS/PAC and GAF sensor(s) | 1  | 1   | 1  | 27   | 1.6  | 0.05  |
| Pput_2061 | 148547283 | catalase/peroxidase HPI                                              | 24 | 131 | 37 | 3232 | 51.8 | 9.75  |
| Pput_2062 | 148547284 | creatinase                                                           | 1  | 1   | 1  | 40   | 4.2  | 0.08  |
| Pput_2067 | 148547289 | hypothetical protein Pput_2067                                       | 3  | 11  | 9  | 373  | 14.7 | 0.91  |
| Pput_2071 | 148547293 | helix-turn-helix domain-containing protein                           | 1  | 1   | 1  | 34   | 2.1  | 0.1   |
| Pput_2080 | 148547302 | NUDIX hydrolase                                                      | 1  | 1   | 1  | 27   | 5.9  | 0.18  |
| Pput_2081 | 148547303 | GntR family transcriptional regulator                                | 1  | 5   | 5  | 89   | 23.6 | 0.87  |
| Pput_2086 | 148547308 | hypothetical protein Pput_2086                                       | 1  | 1   | 1  | 32   | 8.1  | 0.18  |
| Pput_2087 | 148547309 | luciferase family protein                                            | 1  | 2   | 2  | 49   | 7.8  | 0.2   |
| Pput_2088 | 148547310 | flavin reductase domain-containing protein                           | 1  | 1   | 1  | 25   | 5    | 0.22  |
| Pput_2090 | 148547311 | permease for cytosine/purine, uracil, thiamine, allantoin            | 1  | 1   | 1  | 29   | 1.9  | 0.07  |
| Pput_2091 | 148547312 | methyl-accepting chemotaxis sensory transducer                       | 1  | 1   | 1  | 27   | 1.7  | 0.06  |
| Pput_2104 | 148547325 | 3-demethylubiquinone-9 3-methyltransferase                           | 2  | 8   | 6  | 163  | 29.6 | 2.8   |
| Pput_2109 | 148547330 | extracellular solute-binding protein                                 | 1  | 1   | 1  | 28   | 6.1  | 0.13  |
| Pput_2111 | 148547332 | aldehyde oxidase and xanthine dehydrogenase, molybdopterin binding   | 2  | 16  | 11 | 396  | 16.1 | 0.85  |
| Pput_2113 | 148547334 | hypothetical protein Pput_2113                                       | 1  | 2   | 2  | 104  | 3.6  | 0.09  |

|           |           |                                                                       |    |    |    |      |      |       |
|-----------|-----------|-----------------------------------------------------------------------|----|----|----|------|------|-------|
| Pput_2130 | 148547351 | ImcF domain-containing protein                                        | 1  | 1  | 1  | 27   | 0.7  | 0.03  |
| Pput_2131 | 148547352 | ABC transporter related                                               | 1  | 1  | 1  | 29   | 1.5  | 0.06  |
| Pput_2139 | 148547360 | cellulose synthase subunit BcsC                                       | 2  | 2  | 2  | 55   | 0.8  | 0.06  |
| Pput_2144 | 148547365 | response regulator receiver/ANTAR domain-containing protein           | 1  | 1  | 1  | 28   | 5.7  | 0.18  |
| Pput_2148 | 148547369 | GntR family transcriptional regulator                                 | 1  | 1  | 1  | 25   | 1.8  | 0.07  |
| Pput_2155 | 148547376 | UspA domain-containing protein                                        | 2  | 10 | 7  | 412  | 29.6 | 1.69  |
| Pput_2164 | 148547385 | phosphate ABC transporter, periplasmic phosphate-binding protein      | 4  | 32 | 15 | 1145 | 49   | 6.73  |
| Pput_2167 | 148547388 | phosphate ABC transporter, ATPase subunit                             | 1  | 2  | 2  | 70   | 11.9 | 0.28  |
| Pput_2170 | 148547391 | hypothetical protein Pput_2170                                        | 1  | 1  | 1  | 36   | 3.5  | 0.09  |
| Pput_2172 | 148547393 | PAS/PAC sensor hybrid histidine kinase                                | 1  | 1  | 1  | 27   | 1.2  | 0.05  |
| Pput_2173 | 148547394 | two component LuxR family transcriptional regulator                   | 1  | 1  | 1  | 58   | 3.6  | 0.16  |
| Pput_2181 | 148547402 | malate/L-lactate dehydrogenase                                        | 3  | 4  | 3  | 158  | 7.3  | 0.42  |
| Pput_2182 | 148547403 | aromatic amino acid aminotransferase                                  | 5  | 17 | 11 | 740  | 34.7 | 2.12  |
| Pput_2185 | 148547406 | redoxin domain-containing protein                                     | 3  | 10 | 5  | 411  | 23.5 | 2.75  |
| Pput_2186 | 148547407 | RND family efflux transporter MFP subunit                             | 1  | 1  | 1  | 32   | 2.1  | 0.08  |
| Pput_2193 | 148547414 | phosphoglucumutase                                                    | 2  | 5  | 5  | 228  | 7    | 0.33  |
| Pput_2202 | 148547423 | hypothetical protein Pput_2202                                        | 1  | 1  | 1  | 24   | 10.7 | 0.16  |
| Pput_2211 | 148547432 | SCP-like extracellular protein                                        | 1  | 1  | 1  | 26   | 2.8  | 0.12  |
| Pput_2212 | 148547433 | cell wall hydrolase, SleB                                             | 2  | 5  | 3  | 98   | 16.3 | 0.97  |
| Pput_2216 | 148547437 | substrate-binding region of ABC-type glycine betaine transport system | 1  | 2  | 2  | 105  | 10.7 | 0.21  |
| Pput_2219 | 148547440 | anti-FecI sigma factor, FecR                                          | 2  | 2  | 2  | 103  | 3.6  | 0.2   |
| Pput_2221 | 148547442 | acyl-CoA synthetase                                                   | 1  | 1  | 1  | 28   | 1.9  | 0.06  |
| Pput_2223 | 148547444 | response regulator receiver protein                                   | 1  | 1  | 1  | 28   | 7.1  | 0.17  |
| Pput_2224 | 148547445 | MarR family transcriptional regulator                                 | 2  | 2  | 1  | 72   | 5.7  | 0.44  |
| Pput_2227 | 148547448 | short-chain dehydrogenase/reductase SDR                               | 1  | 6  | 5  | 162  | 21.8 | 1.26  |
| Pput_2234 | 148547455 | hydroxymethylglutaryl-CoA lyase                                       | 1  | 6  | 6  | 201  | 22.7 | 0.97  |
| Pput_2235 | 148547456 | MerR family transcriptional regulator                                 | 1  | 1  | 1  | 31   | 11.4 | 0.25  |
| Pput_2243 | 148547464 | hypothetical protein Pput_2243                                        | 2  | 10 | 6  | 416  | 24.4 | 1.59  |
| Pput_2247 | 148547468 | TetR family transcriptional regulator                                 | 1  | 1  | 1  | 42   | 6.6  | 0.14  |
| Pput_2249 | 148547470 | hypothetical protein Pput_2249                                        | 1  | 2  | 2  | 77   | 12.2 | 0.5   |
| Pput_2258 | 148547479 | hypothetical protein Pput_2258                                        | 1  | 1  | 1  | 35   | 3.7  | 0.12  |
| Pput_2264 | 148547485 | branched-chain amino acid aminotransferase                            | 11 | 62 | 16 | 1784 | 47.2 | 8.33  |
| Pput_2265 | 148547486 | ABC transporter related                                               | 1  | 1  | 1  | 27   | 1.9  | 0.06  |
| Pput_2268 | 148547489 | cobalamin biosynthesis protein CobW                                   | 1  | 1  | 1  | 41   | 2.5  | 0.1   |
| Pput_2274 | 148547495 | peptidase U32                                                         | 1  | 2  | 2  | 28   | 3.3  | 0.1   |
| Pput_2275 | 148547496 | endoribonuclease L-PSP                                                | 1  | 2  | 2  | 86   | 18.3 | 0.66  |
| Pput_2279 | 148547500 | acyl-CoA dehydrogenase domain-containing protein                      | 2  | 8  | 7  | 261  | 17.2 | 0.91  |
| Pput_2280 | 148547501 | enoyl-CoA hydratase/isomerase                                         | 1  | 2  | 2  | 113  | 6.4  | 0.2   |
| Pput_2287 | 148547508 | response regulator receiver protein                                   | 1  | 1  | 1  | 31   | 6.3  | 0.19  |
| Pput_2304 | 148547525 | FAD dependent oxidoreductase                                          | 1  | 1  | 1  | 26   | 2.6  | 0.08  |
| Pput_2306 | 148547527 | aldehyde dehydrogenase                                                | 2  | 3  | 2  | 139  | 3.8  | 0.21  |
| Pput_2307 | 148547528 | hypothetical protein Pput_2307                                        | 1  | 1  | 1  | 27   | 2.2  | 0.06  |
| Pput_2319 | 148547540 | hypothetical protein Pput_2319                                        | 1  | 1  | 1  | 25   | 2.5  | 0.08  |
| Pput_2320 | 148547541 | glyoxalase/bleomycin resistance protein/dioxygenase                   | 3  | 10 | 7  | 213  | 47.8 | 3.49  |
| Pput_2321 | 148547542 | aldehyde dehydrogenase                                                | 6  | 26 | 13 | 811  | 23   | 2.11  |
| Pput_2329 | 148547550 | 4-hydroxyphenylpyruvate dioxygenase                                   | 1  | 9  | 9  | 276  | 28.8 | 1.23  |
| Pput_2331 | 148547552 | ThiJ/PfpI domain-containing protein                                   | 1  | 5  | 5  | 148  | 23.2 | 1.01  |
| Pput_2338 | 148547559 | type II secretion system protein                                      | 1  | 1  | 1  | 27   | 2    | 0.09  |
| Pput_2341 | 148547562 | integral membrane sensor signal transduction histidine kinase         | 1  | 1  | 1  | 27   | 2.9  | 0.07  |
| Pput_2342 | 148547563 | integral membrane sensor signal transduction histidine kinase         | 1  | 1  | 1  | 31   | 2.4  | 0.07  |
| Pput_2343 | 148547564 | two component, sigma54 specific, Fis family transcriptional regulator | 1  | 1  | 1  | 40   | 1.1  | 0.07  |
| Pput_2345 | 148547566 | gluconate transporter                                                 | 5  | 5  | 1  | 224  | 3.6  | 0.4   |
| Pput_2346 | 148547567 | carbohydrate kinase                                                   | 5  | 10 | 3  | 441  | 13.4 | 2.25  |
| Pput_2347 | 148547568 | Lacl family transcriptional regulator                                 | 1  | 3  | 3  | 147  | 12.1 | 0.34  |
| Pput_2348 | 148547569 | methyl-accepting chemotaxis sensory transducer                        | 2  | 2  | 1  | 56   | 2    | 0.16  |
| Pput_2349 | 148547570 | Hpt sensor hybrid histidine kinase                                    | 1  | 1  | 1  | 26   | 1    | 0.03  |
| Pput_2356 | 148547577 | GCN5-related N-acetyltransferase                                      | 2  | 2  | 1  | 114  | 6.9  | 0.42  |
| Pput_2358 | 148547579 | alpha/beta hydrolase fold                                             | 1  | 2  | 2  | 73   | 6.6  | 0.25  |
| Pput_2371 | 148547592 | Rhs element Vgr protein                                               | 2  | 2  | 2  | 58   | 1.1  | 0.08  |
| Pput_2375 | 148547596 | gluconate 2-dehydrogenase acceptor subunit                            | 2  | 5  | 3  | 193  | 16.1 | 0.83  |
| Pput_2376 | 148547597 | gluconate 2-dehydrogenase acceptor subunit                            | 3  | 15 | 13 | 374  | 21.7 | 1.12  |
| Pput_2377 | 148547598 | gluconate 2-dehydrogenase acceptor subunit                            | 1  | 4  | 4  | 211  | 16.3 | 0.38  |
| Pput_2378 | 148547599 | regulatory protein, Lacl                                              | 2  | 11 | 8  | 312  | 20.9 | 1.44  |
| Pput_2380 | 148547601 | ribokinase-like domain-containing protein                             | 1  | 1  | 1  | 53   | 2.8  | 0.11  |
| Pput_2382 | 148547603 | gluconate 2-dehydrogenase                                             | 3  | 19 | 12 | 612  | 35   | 3.43  |
| Pput_2385 | 148547606 | surface antigen (D15)                                                 | 5  | 5  | 2  | 224  | 1.7  | 0.2   |
| Pput_2388 | 148547609 | aldo/keto reductase                                                   | 1  | 2  | 2  | 99   | 6.9  | 0.21  |
| Pput_2394 | 148547615 | putative GAF sensor protein                                           | 2  | 2  | 2  | 67   | 1.9  | 0.08  |
| Pput_2400 | 148547621 | p-hydroxycinnamoyl CoA hydratase/lyase                                | 1  | 1  | 1  | 54   | 3.3  | 0.12  |
| Pput_2410 | 148547631 | TonB-dependent receptor                                               | 1  | 1  | 1  | 30   | 1.3  | 0.05  |
| Pput_2412 | 148547633 | TonB-dependent siderophore receptor                                   | 1  | 9  | 9  | 308  | 13.4 | 0.51  |
| Pput_2414 | 148547635 | LysR family transcriptional regulator                                 | 1  | 1  | 1  | 25   | 4.4  | 0.11  |
| Pput_2419 | 148547639 | TonB-dependent siderophore receptor                                   | 2  | 2  | 2  | 53   | 2.3  | 0.1   |
| Pput_2422 | 148547642 | 3-oxoacyl-(acyl carrier protein) synthase II                          | 1  | 2  | 1  | 37   | 2.1  | 0.08  |
| Pput_2425 | 148547645 | TetR family transcriptional regulator                                 | 2  | 5  | 4  | 201  | 16.7 | 1.03  |
| Pput_2443 | 148547662 | hypothetical protein Pput_2443                                        | 3  | 17 | 9  | 667  | 73.3 | 21.09 |
| Pput_2450 | 148547668 | phosphoribosyltransferase                                             | 2  | 2  | 1  | 74   | 4.2  | 0.36  |
| Pput_2455 | 148547672 | hypothetical protein Pput_2455                                        | 1  | 1  | 1  | 99   | 14.3 | 0.41  |
| Pput_2456 | 148547673 | transport-associated                                                  | 1  | 2  | 2  | 41   | 7    | 0.35  |
| Pput_2460 | 148547677 | heat shock protein Hsp20                                              | 2  | 26 | 14 | 614  | 78.5 | 15.91 |
| Pput_2463 | 148547680 | GCN5-related N-acetyltransferase                                      | 6  | 11 | 2  | 581  | 17.5 | 1.96  |
| Pput_2467 | 148547684 | beta-lactamase domain-containing protein                              | 1  | 2  | 2  | 79   | 5.9  | 0.15  |
| Pput_2468 | 148547685 | UspA domain-containing protein                                        | 1  | 3  | 3  | 100  | 10.1 | 0.37  |
| Pput_2469 | 148547686 | GCN5-related N-acetyltransferase                                      | 2  | 3  | 2  | 152  | 11   | 0.58  |
| Pput_2470 | 148547687 | UspA domain-containing protein                                        | 5  | 11 | 4  | 286  | 12.3 | 1.36  |
| Pput_2473 | 148547690 | PaaX family transcriptional regulator                                 | 1  | 2  | 2  | 49   | 5.4  | 0.21  |
| Pput_2474 | 148547691 | phenylacetic acid degradation protein PaaY                            | 1  | 1  | 1  | 33   | 5.5  | 0.18  |
| Pput_2479 | 148547696 | beta-ketoadipyl CoA thiolase                                          | 1  | 1  | 1  | 30   | 2.2  | 0.09  |
| Pput_2489 | 148547706 | bifunctional aldehyde dehydrogenase/enoyl-CoA hydratase               | 1  | 5  | 5  | 119  | 9.1  | 0.28  |

|           |           |                                                                      |   |    |    |      |      |       |
|-----------|-----------|----------------------------------------------------------------------|---|----|----|------|------|-------|
| Pput_2490 | 148547707 | hypothetical protein Pput_2490                                       | 1 | 1  | 1  | 42   | 12.4 | 0.4   |
| Pput_2493 | 148547710 | peptidase S14, ClpP                                                  | 2 | 3  | 2  | 169  | 10.4 | 0.6   |
| Pput_2494 | 148547711 | hypothetical protein Pput_2494                                       | 1 | 1  | 1  | 26   | 3.3  | 0.11  |
| Pput_2501 | 148547718 | ATP-dependent DNA ligase                                             | 4 | 4  | 2  | 115  | 0.6  | 0.16  |
| Pput_2504 | 148547721 | methyltransferase type 12                                            | 1 | 1  | 1  | 33   | 4.5  | 0.16  |
| Pput_2506 | 148547723 | Ku family containing protein                                         | 2 | 5  | 5  | 99   | 15.8 | 0.71  |
| Pput_2511 | 148547728 | hypothetical protein Pput_2511                                       | 1 | 1  | 1  | 25   | 13.3 | 0.68  |
| Pput_2518 | 148547735 | GCN5-related N-acetyltransferase                                     | 1 | 1  | 1  | 28   | 6    | 0.21  |
| Pput_2527 | 148547744 | N-isopropylammelide isopropylaminohydrolase                          | 4 | 5  | 4  | 184  | 4.6  | 0.41  |
| Pput_2531 | 148547748 | TenA family transcription regulator                                  | 2 | 3  | 2  | 131  | 4.9  | 0.44  |
| Pput_2541 | 148547758 | FAD-dependent pyridine nucleotide-disulphide oxidoreductase          | 1 | 1  | 1  | 49   | 3.6  | 0.07  |
| Pput_2542 | 148547759 | aldo/keto reductase                                                  | 1 | 6  | 6  | 122  | 17.9 | 0.79  |
| Pput_2543 | 148547760 | N-ethylmaleimide reductase                                           | 2 | 2  | 1  | 53   | 4.1  | 0.2   |
| Pput_2548 | 148547765 | benzoate transporter                                                 | 1 | 1  | 1  | 40   | 1.5  | 0.09  |
| Pput_2549 | 148547766 | catechol 1,2-dioxygenase                                             | 1 | 1  | 1  | 31   | 3    | 0.11  |
| Pput_2553 | 148547770 | benzoate 1,2-dioxygenase                                             | 3 | 4  | 3  | 152  | 10.6 | 0.84  |
| Pput_2557 | 148547774 | histidinol-phosphate phosphatase, putative                           | 1 | 2  | 2  | 105  | 8.4  | 0.29  |
| Pput_2558 | 148547775 | UspA domain-containing protein                                       | 1 | 5  | 3  | 123  | 12.5 | 0.72  |
| Pput_2559 | 148547776 | TonB-dependent siderophore receptor                                  | 2 | 2  | 2  | 77   | 1.3  | 0.1   |
| Pput_2560 | 148547777 | hypothetical protein Pput_2560                                       | 2 | 3  | 3  | 133  | 5.8  | 0.67  |
| Pput_2563 | 148547780 | aldehyde dehydrogenase                                               | 1 | 1  | 1  | 27   | 1.7  | 0.08  |
| Pput_2569 | 148547786 | hypothetical protein Pput_2569                                       | 1 | 10 | 7  | 212  | 24.4 | 2.67  |
| Pput_2573 | 148547790 | WecB/TagA/CpsF family glycosyl transferase                           | 1 | 1  | 1  | 50   | 4    | 0.13  |
| Pput_2574 | 148547791 | glycosyl transferase family protein                                  | 3 | 4  | 2  | 112  | 4.6  | 0.36  |
| Pput_2575 | 148547792 | glycosyl transferase, group 1                                        | 6 | 9  | 6  | 279  | 6.8  | 0.75  |
| Pput_2577 | 148547794 | glycosyl transferase family protein                                  | 1 | 1  | 1  | 26   | 2.8  | 0.1   |
| Pput_2580 | 148547797 | hexapaptide repeat-containing transferase                            | 1 | 1  | 1  | 24   | 4.8  | 0.15  |
| Pput_2581 | 148547798 | GMC oxidoreductase                                                   | 2 | 2  | 1  | 58   | 3.1  | 0.14  |
| Pput_2585 | 148547802 | hypothetical protein Pput_2585                                       | 1 | 1  | 1  | 47   | 1.2  | 0.04  |
| Pput_2587 | 148547804 | non-specific protein-tyrosine kinase                                 | 2 | 2  | 1  | 58   | 3.4  | 0.26  |
| Pput_2589 | 148547806 | hypothetical protein Pput_2589                                       | 1 | 1  | 1  | 53   | 3    | 0.09  |
| Pput_2591 | 148547808 | XRE family transcriptional regulator                                 | 1 | 2  | 2  | 72   | 11.1 | 0.42  |
| Pput_2598 | 148547815 | error-prone DNA polymerase                                           | 1 | 1  | 1  | 30   | 1.3  | 0.03  |
| Pput_2606 | 148547823 | short-chain dehydrogenase/reductase SDR                              | 1 | 1  | 1  | 33   | 3.6  | 0.13  |
| Pput_2609 | 148547826 | amidase                                                              | 1 | 1  | 1  | 27   | 1.6  | 0.07  |
| Pput_2614 | 148547831 | hypothetical protein Pput_2614                                       | 1 | 6  | 6  | 135  | 23.2 | 1.47  |
| Pput_2622 | 148547838 | hypothetical protein Pput_2622                                       | 2 | 3  | 2  | 86   | 9.5  | 0.6   |
| Pput_2623 | 148547839 | hypothetical protein Pput_2623                                       | 1 | 1  | 1  | 34   | 2    | 0.07  |
| Pput_2627 | 148547843 | ATPase                                                               | 2 | 2  | 1  | 59   | 0.9  | 0.08  |
| Pput_2631 | 148547847 | ImcF domain-containing protein                                       | 1 | 1  | 1  | 25   | 1.8  | 0.03  |
| Pput_2634 | 148547850 | hypothetical protein Pput_2634                                       | 5 | 22 | 10 | 790  | 40.1 | 9.46  |
| Pput_2635 | 148547851 | ImpA domain-containing protein                                       | 1 | 1  | 1  | 37   | 5.8  | 0.09  |
| Pput_2638 | 148547854 | secretion protein HlyD family protein                                | 1 | 1  | 1  | 30   | 1.9  | 0.09  |
| Pput_2645 | 148547861 | PpiC-type peptidyl-prolyl cis-trans isomerase                        | 2 | 4  | 2  | 138  | 31.2 | 2.13  |
| Pput_2646 | 148547862 | extracellular solute-binding protein                                 | 1 | 1  | 1  | 35   | 1.7  | 0.05  |
| Pput_2648 | 148547864 | binding-protein-dependent transport systems inner membrane component | 1 | 1  | 1  | 27   | 2.4  | 0.1   |
| Pput_2652 | 148547868 | ecotin                                                               | 2 | 7  | 5  | 238  | 22.6 | 2.53  |
| Pput_2653 | 148547869 | acetoacetyl-CoA synthetase                                           | 1 | 2  | 2  | 81   | 3.5  | 0.1   |
| Pput_2677 | 148547893 | alcohol dehydrogenase                                                | 1 | 1  | 1  | 30   | 1.5  | 0.1   |
| Pput_2687 | 148547903 | hypothetical protein Pput_2687                                       | 1 | 1  | 1  | 24   | 7.4  | 0.15  |
| Pput_2691 | 148547907 | shikimate 5-dehydrogenase                                            | 1 | 1  | 1  | 27   | 3.3  | 0.13  |
| Pput_2694 | 148547910 | hypothetical protein Pput_2694                                       | 1 | 1  | 1  | 25   | 7.6  | 0.26  |
| Pput_2705 | 148547921 | HxlR family transcriptional regulator                                | 1 | 1  | 1  | 58   | 7.5  | 0.24  |
| Pput_2710 | 148547926 | alcohol dehydrogenase                                                | 1 | 1  | 1  | 25   | 3    | 0.11  |
| Pput_2713 | 148547929 | uncharacterized peroxidase-related enzyme                            | 1 | 1  | 1  | 30   | 5.8  | 0.22  |
| Pput_2721 | 148547937 | TetR family transcriptional regulator                                | 1 | 1  | 1  | 33   | 4.6  | 0.18  |
| Pput_2722 | 148547938 | hypothetical protein Pput_2722                                       | 1 | 2  | 2  | 44   | 10.8 | 0.44  |
| Pput_2725 | 148547941 | meta-pathway phenol degradation-like protein                         | 4 | 4  | 1  | 110  | 5.2  | 0.48  |
| Pput_2734 | 148547950 | integral membrane sensor signal transduction histidine kinase        | 1 | 1  | 1  | 27   | 4.5  | 0.08  |
| Pput_2743 | 148547959 | integral membrane sensor signal transduction histidine kinase        | 1 | 1  | 1  | 26   | 2.2  | 0.06  |
| Pput_2752 | 148547968 | hypothetical protein Pput_2752                                       | 1 | 1  | 1  | 50   | 6.7  | 0.17  |
| Pput_2755 | 148547970 | ABC transporter related                                              | 1 | 1  | 1  | 24   | 2.8  | 0.06  |
| Pput_2758 | 148547973 | putative glutathione S-transferase YghU                              | 2 | 7  | 4  | 251  | 22.9 | 1.11  |
| Pput_2760 | 148547974 | amidase                                                              | 2 | 5  | 4  | 170  | 8.8  | 0.33  |
| Pput_2762 | 148547976 | pyridoxal-5--phosphate-dependent enzyme, beta subunit                | 1 | 2  | 2  | 70   | 8.9  | 0.25  |
| Pput_2763 | 148547977 | carboxynorspermidine decarboxylase                                   | 2 | 2  | 2  | 57   | 2.7  | 0.18  |
| Pput_2764 | 148547978 | saccharopine dehydrogenase                                           | 3 | 17 | 13 | 486  | 38.9 | 2.26  |
| Pput_2765 | 148547979 | methyltransferase type 12                                            | 2 | 8  | 4  | 258  | 11.5 | 0.94  |
| Pput_2767 | 148547981 | malate:quinone oxidoreductase                                        | 2 | 6  | 5  | 152  | 12.4 | 0.41  |
| Pput_2774 | 148547988 | trehalose synthase                                                   | 1 | 2  | 2  | 73   | 3.5  | 0.1   |
| Pput_2775 | 148547989 | riboflavin synthase subunit alpha                                    | 2 | 3  | 2  | 157  | 9.6  | 0.53  |
| Pput_2778 | 148547992 | delta-aminolevulinic acid dehydratase                                | 6 | 24 | 13 | 606  | 42.3 | 3.96  |
| Pput_2779 | 148547993 | protein of unknown function RIO1                                     | 2 | 2  | 1  | 68   | 3.4  | 0.22  |
| Pput_2783 | 148547997 | DNA-binding transcriptional regulator CsiR                           | 1 | 2  | 2  | 62   | 10.5 | 0.27  |
| Pput_2784 | 148547998 | two component transcriptional regulator                              | 1 | 4  | 4  | 230  | 26.1 | 0.76  |
| Pput_2786 | 148548000 | cysteinyl-tRNA synthetase                                            | 2 | 11 | 8  | 307  | 18.5 | 1.07  |
| Pput_2787 | 148548001 | glutaminyl-tRNA synthetase                                           | 6 | 18 | 11 | 709  | 18.3 | 1.26  |
| Pput_2788 | 148548002 | peptidyl-prolyl cis-trans isomerase, cyclophilin type                | 4 | 33 | 10 | 1053 | 33.2 | 16.34 |
| Pput_2790 | 148548004 | peptidase S45, penicillin amidase                                    | 1 | 1  | 1  | 26   | 1    | 0.04  |
| Pput_2799 | 148548013 | GCN5-related N-acetyltransferase                                     | 2 | 3  | 2  | 109  | 8.8  | 0.48  |
| Pput_2800 | 148548014 | exonuclease III                                                      | 1 | 8  | 8  | 169  | 27.4 | 1.5   |
| Pput_2808 | 148548022 | DSBA oxidoreductase                                                  | 1 | 1  | 1  | 51   | 4.4  | 0.17  |
| Pput_2820 | 148548034 | NADH:flavin oxidoreductase/NADH oxidase                              | 1 | 1  | 1  | 25   | 1.7  | 0.05  |
| Pput_2821 | 148548035 | XRE family transcriptional regulator                                 | 1 | 1  | 1  | 34   | 11.1 | 0.17  |
| Pput_2828 | 148548042 | methyl-accepting chemotaxis sensory transducer                       | 3 | 4  | 3  | 185  | 3.7  | 0.25  |
| Pput_2838 | 148548052 | protein of unknown function DUF899, thioredoxin family protein       | 2 | 13 | 9  | 386  | 42.1 | 3.34  |
| Pput_2840 | 148548054 | urease accessory protein UreG                                        | 1 | 1  | 1  | 28   | 5.3  | 0.17  |
| Pput_2843 | 148548057 | urease accessory protein UreE                                        | 1 | 1  | 1  | 24   | 10.2 | 0.21  |
| Pput_2844 | 148548058 | urease subunit alpha                                                 | 1 | 4  | 4  | 99   | 8.6  | 0.27  |

|           |           |                                                                                         |    |    |    |      |      |       |
|-----------|-----------|-----------------------------------------------------------------------------------------|----|----|----|------|------|-------|
| Pput_2851 | 148548065 | VRR-NUC domain-containing protein                                                       | 1  | 1  | 1  | 26   | 2.2  | 0.06  |
| Pput_2856 | 148548070 | LysR family transcriptional regulator                                                   | 1  | 1  | 1  | 28   | 3.1  | 0.1   |
| Pput_2862 | 148548076 | alcohol dehydrogenase                                                                   | 3  | 6  | 4  | 113  | 11.8 | 0.65  |
| Pput_2863 | 148548077 | LysR family transcriptional regulator                                                   | 2  | 2  | 2  | 82   | 4.6  | 0.22  |
| Pput_2866 | 148548079 | regulatory protein, IclR                                                                | 2  | 2  | 2  | 60   | 3.5  | 0.28  |
| Pput_2869 | 148548082 | RND efflux system outer membrane lipoprotein                                            | 1  | 1  | 1  | 30   | 2.9  | 0.07  |
| Pput_2873 | 148548086 | 4-hydroxy-2-ketovaleate aldolase                                                        | 1  | 1  | 1  | 28   | 5.1  | 0.1   |
| Pput_2874 | 148548087 | acetaldehyde dehydrogenase                                                              | 2  | 2  | 2  | 101  | 3.8  | 0.22  |
| Pput_2883 | 148548096 | membrane protein involved in aromatic hydrocarbon degradation                           | 12 | 12 | 1  | 345  | 2    | 0.96  |
| Pput_2888 | 148548100 | 4-hydroxy-2-ketovaleate aldolase                                                        | 1  | 1  | 1  | 87   | 3.1  | 0.1   |
| Pput_2891 | 148548103 | alpha/beta hydrolase fold                                                               | 1  | 1  | 1  | 62   | 4.2  | 0.12  |
| Pput_2892 | 148548104 | TetR family transcriptional regulator                                                   | 1  | 1  | 1  | 24   | 3.4  | 0.16  |
| Pput_2897 | 148548109 | aromatic-ring-hydroxylating dioxygenase, beta subunit                                   | 2  | 2  | 1  | 51   | 9.4  | 0.36  |
| Pput_2904 | 148548116 | aldehyde dehydrogenase                                                                  | 1  | 1  | 1  | 41   | 3    | 0.07  |
| Pput_2908 | 148548120 | TetR family transcriptional regulator                                                   | 1  | 2  | 2  | 94   | 9.7  | 0.35  |
| Pput_2931 | 148548141 | hypothetical protein Pput_2931                                                          | 1  | 1  | 1  | 33   | 6.7  | 0.14  |
| Pput_2954 | 148548164 | hypothetical protein Pput_2954                                                          | 1  | 1  | 1  | 24   | 2.9  | 0.08  |
| Pput_2960 | 148548170 | hypothetical protein Pput_2960                                                          | 2  | 5  | 4  | 222  | 40.5 | 2.08  |
| Pput_2963 | 148548173 | ATPase involved in DNA repair-like protein                                              | 1  | 1  | 1  | 26   | 0.9  | 0.04  |
| Pput_2972 | 148548182 | short-chain dehydrogenase/reductase SDR                                                 | 1  | 1  | 1  | 72   | 4.9  | 0.14  |
| Pput_2981 | 148548191 | acyl-CoA dehydrogenase type 2                                                           | 1  | 1  | 1  | 29   | 2.8  | 0.08  |
| Pput_2984 | 148548194 | ABC-type branched-chain amino acid transport systems periplasmic component-like protein | 2  | 2  | 2  | 53   | 2    | 0.16  |
| Pput_2987 | 148548197 | ABC transporter related                                                                 | 1  | 1  | 1  | 25   | 4.3  | 0.12  |
| Pput_3001 | 148548211 | ABC-type branched-chain amino acid transport systems periplasmic component-like protein | 1  | 1  | 1  | 30   | 2.9  | 0.08  |
| Pput_3002 | 148548212 | ABC-type branched-chain amino acid transport systems periplasmic component-like protein | 16 | 16 | 1  | 476  | 2.8  | 1.12  |
| Pput_3007 | 148548217 | hypothetical protein Pput_3007                                                          | 2  | 2  | 2  | 58   | 1.7  | 0.14  |
| Pput_3008 | 148548218 | UspA domain-containing protein                                                          | 1  | 2  | 2  | 91   | 8.1  | 0.24  |
| Pput_3013 | 148548223 | MerR family transcriptional regulator                                                   | 1  | 2  | 2  | 53   | 7.8  | 0.25  |
| Pput_3014 | 148548224 | putative PAS/PAC sensor protein                                                         | 2  | 5  | 5  | 201  | 18.9 | 1.33  |
| Pput_3022 | 148548232 | deoxyribodipyrimidine photolyase-related protein                                        | 1  | 1  | 1  | 26   | 1.8  | 0.06  |
| Pput_3024 | 148548234 | hypothetical protein Pput_3024                                                          | 1  | 2  | 1  | 28   | 6.2  | 0.19  |
| Pput_3026 | 148548236 | hypothetical protein Pput_3026                                                          | 1  | 1  | 1  | 28   | 6.1  | 0.21  |
| Pput_3032 | 148548242 | hemerythrin HHE cation binding domain-containing protein                                | 2  | 3  | 2  | 67   | 13   | 0.71  |
| Pput_3034 | 148548244 | regulatory protein, ArsR                                                                | 4  | 4  | 1  | 109  | 6.2  | 0.92  |
| Pput_3039 | 148548249 | two component transcriptional regulator                                                 | 1  | 1  | 1  | 26   | 4.1  | 0.15  |
| Pput_3040 | 148548250 | hypothetical protein Pput_3040                                                          | 2  | 10 | 5  | 258  | 23   | 1.94  |
| Pput_3041 | 148548251 | short chain dehydrogenase                                                               | 2  | 17 | 10 | 437  | 36.9 | 3.44  |
| Pput_3042 | 148548252 | hypothetical protein Pput_3042                                                          | 5  | 21 | 9  | 586  | 42.9 | 5.71  |
| Pput_3043 | 148548253 | AMP-dependent synthetase and ligase                                                     | 2  | 4  | 3  | 171  | 4.5  | 0.3   |
| Pput_3044 | 148548254 | hypothetical protein Pput_3044                                                          | 1  | 1  | 1  | 35   | 6.2  | 0.15  |
| Pput_3052 | 148548262 | redoxin domain-containing protein                                                       | 2  | 2  | 1  | 107  | 10.2 | 0.42  |
| Pput_3062 | 148548272 | hypothetical protein Pput_3062                                                          | 1  | 1  | 1  | 31   | 3.9  | 0.15  |
| Pput_3077 | 148548287 | outer membrane porin                                                                    | 1  | 1  | 1  | 28   | 3.6  | 0.08  |
| Pput_3083 | 148548293 | aldehyde dehydrogenase                                                                  | 5  | 41 | 15 | 1463 | 29.4 | 4.48  |
| Pput_3084 | 148548294 | Pyrrolo-quinoline quinone                                                               | 3  | 12 | 9  | 437  | 15.6 | 0.79  |
| Pput_3085 | 148548295 | beta-lactamase domain-containing protein                                                | 1  | 1  | 1  | 27   | 2.9  | 0.11  |
| Pput_3088 | 148548298 | cytochrome c, class I                                                                   | 1  | 1  | 1  | 33   | 6.2  | 0.22  |
| Pput_3092 | 148548302 | integral membrane sensor signal transduction histidine kinase                           | 1  | 1  | 1  | 27   | 5.6  | 0.08  |
| Pput_3093 | 148548303 | ABC-type branched-chain amino acid transport systems periplasmic component-like protein | 2  | 3  | 2  | 114  | 6.5  | 0.27  |
| Pput_3094 | 148548304 | YVTN beta-propeller repeat-containing protein                                           | 1  | 1  | 1  | 42   | 3.6  | 0.1   |
| Pput_3095 | 148548305 | ABC transporter related                                                                 | 1  | 2  | 2  | 57   | 7.7  | 0.3   |
| Pput_3100 | 148548310 | galactarate dehydratase                                                                 | 2  | 2  | 2  | 64   | 1.7  | 0.14  |
| Pput_3101 | 148548311 | aldehyde dehydrogenase                                                                  | 1  | 1  | 1  | 71   | 2.1  | 0.07  |
| Pput_3102 | 148548312 | GntR domain-containing protein                                                          | 1  | 2  | 2  | 67   | 7.6  | 0.29  |
| Pput_3108 | 148548318 | hypothetical protein Pput_3108                                                          | 2  | 4  | 4  | 176  | 10.4 | 0.8   |
| Pput_3109 | 148548319 | TonB-dependent siderophore receptor                                                     | 1  | 4  | 4  | 220  | 6.5  | 0.2   |
| Pput_3126 | 148548336 | metal dependent phosphohydrolase                                                        | 1  | 1  | 1  | 31   | 0.7  | 0.03  |
| Pput_3131 | 148548341 | aldehyde dehydrogenase                                                                  | 1  | 1  | 1  | 26   | 2.7  | 0.07  |
| Pput_3132 | 148548342 | hydroxydechloroatrazine ethylaminohydrolase                                             | 1  | 1  | 1  | 27   | 2.6  | 0.07  |
| Pput_3133 | 148548343 | GCN5-related N-acetyltransferase                                                        | 4  | 7  | 2  | 250  | 11   | 1.62  |
| Pput_3138 | 148548348 | hypothetical protein Pput_3138                                                          | 2  | 2  | 2  | 121  | 8.5  | 0.4   |
| Pput_3142 | 148548352 | hypothetical protein Pput_3142                                                          | 1  | 1  | 1  | 56   | 10.2 | 0.23  |
| Pput_3143 | 148548353 | LysR family transcriptional regulator                                                   | 1  | 1  | 1  | 30   | 3.2  | 0.11  |
| Pput_3144 | 148548354 | glyoxalase/bleomycin resistance protein/dioxygenase                                     | 2  | 2  | 1  | 83   | 6.3  | 0.56  |
| Pput_3146 | 148548356 | general substrate transporter                                                           | 1  | 2  | 2  | 62   | 4.3  | 0.13  |
| Pput_3148 | 148548358 | alpha/beta hydrolase fold                                                               | 1  | 1  | 1  | 29   | 2.9  | 0.11  |
| Pput_3151 | 148548361 | pirin domain-containing protein                                                         | 1  | 4  | 4  | 171  | 15.1 | 0.74  |
| Pput_3156 | 148548366 | HlyD family type I secretion membrane fusion protein                                    | 1  | 1  | 1  | 29   | 4.5  | 0.08  |
| Pput_3161 | 148548371 | 4-hydroxyphenylpyruvate dioxygenase                                                     | 1  | 6  | 6  | 246  | 10.4 | 0.36  |
| Pput_3163 | 148548373 | aromatic-L-amino-acid decarboxylase                                                     | 1  | 1  | 1  | 26   | 1    | 0.07  |
| Pput_3165 | 148548375 | hypothetical protein Pput_3165                                                          | 2  | 6  | 4  | 184  | 16.5 | 0.9   |
| Pput_3170 | 148548380 | trans-aconitate 2-methyltransferase                                                     | 1  | 2  | 2  | 74   | 11.6 | 0.28  |
| Pput_3176 | 148548384 | hypothetical protein Pput_3176                                                          | 1  | 1  | 1  | 26   | 2.7  | 0.18  |
| Pput_3177 | 148548385 | short-chain dehydrogenase/reductase SDR                                                 | 2  | 7  | 6  | 235  | 27.5 | 1.33  |
| Pput_3181 | 148548389 | glutathione S-transferase domain-containing protein                                     | 1  | 1  | 1  | 37   | 5.8  | 0.16  |
| Pput_3183 | 148548391 | LysR family transcriptional regulator                                                   | 1  | 1  | 1  | 68   | 4.3  | 0.12  |
| Pput_3187 | 148548395 | D-isomer specific 2-hydroxyacid dehydrogenase, NAD-binding                              | 2  | 2  | 2  | 55   | 3.4  | 0.22  |
| Pput_3200 | 148548408 | protocatechuate 4,5-dioxygenase                                                         | 3  | 3  | 1  | 90   | 2.1  | 0.24  |
| Pput_3218 | 148548426 | MerR family transcriptional regulator                                                   | 1  | 3  | 3  | 146  | 35.6 | 1.1   |
| Pput_3219 | 148548427 | integration host factor subunit alpha                                                   | 2  | 9  | 6  | 292  | 40   | 5.66  |
| Pput_3220 | 148548428 | phenylalanyl-tRNA synthetase subunit beta                                               | 9  | 22 | 10 | 560  | 7.6  | 0.95  |
| Pput_3221 | 148548429 | phenylalanyl-tRNA synthetase subunit alpha                                              | 8  | 18 | 11 | 542  | 26.9 | 2.34  |
| Pput_3222 | 148548430 | 50S ribosomal protein L20                                                               | 13 | 83 | 9  | 1768 | 38.1 | 29.51 |
| Pput_3223 | 148548431 | 50S ribosomal protein L35                                                               | 2  | 4  | 3  | 144  | 32.8 | 3.42  |
| Pput_3224 | 148548432 | translation initiation factor IF-3                                                      | 6  | 34 | 10 | 1000 | 48.1 | 14.9  |
| Pput_3225 | 148548433 | threonyl-tRNA synthetase                                                                | 8  | 28 | 15 | 803  | 25.5 | 1.7   |
| Pput_3227 | 148548435 | cold-shock DNA-binding domain-containing protein                                        | 2  | 9  | 5  | 261  | 50   | 20.07 |
| Pput_3228 | 148548436 | hypothetical protein Pput_3228                                                          | 5  | 11 | 5  | 499  | 39.6 | 5.5   |
| Pput_3230 | 148548438 | inosine/uridine-preferring nucleoside hydrolase                                         | 2  | 2  | 1  | 79   | 3    | 0.22  |

|           |           |                                                                         |    |     |    |      |      |        |
|-----------|-----------|-------------------------------------------------------------------------|----|-----|----|------|------|--------|
| Pput_3231 | 148548439 | D-ribose pyranase                                                       | 1  | 3   | 3  | 125  | 22   | 1.07   |
| Pput_3232 | 148548440 | ribokinase                                                              | 1  | 1   | 1  | 50   | 3.3  | 0.12   |
| Pput_3233 | 148548441 | alanine racemase                                                        | 1  | 2   | 2  | 70   | 6.2  | 0.21   |
| Pput_3235 | 148548443 | ABC transporter related                                                 | 4  | 4   | 3  | 115  | 1.9  | 0.28   |
| Pput_3236 | 148548444 | monosaccharide-transporting ATPase                                      | 1  | 1   | 1  | 32   | 3.1  | 0.11   |
| Pput_3244 | 148548452 | sporulation domain-containing protein                                   | 2  | 7   | 5  | 248  | 30.2 | 1.74   |
| Pput_3246 | 148548454 | hypothetical protein Pput_3246                                          | 2  | 6   | 3  | 203  | 12.3 | 0.98   |
| Pput_3251 | 148548459 | serine/threonine transporter SstT                                       | 1  | 1   | 1  | 25   | 3.5  | 0.09   |
| Pput_3252 | 148548460 | hypothetical protein Pput_3252                                          | 2  | 9   | 8  | 319  | 47.2 | 2.45   |
| Pput_3255 | 148548463 | alkyl hydroperoxide reductase subunit F                                 | 1  | 1   | 1  | 28   | 3.3  | 0.07   |
| Pput_3256 | 148548464 | alkyl hydroperoxide reductase/ Thiol specific antioxidant/ Mal allergen | 1  | 10  | 9  | 323  | 55.1 | 3.64   |
| Pput_3258 | 148548466 | acyl-CoA dehydrogenase domain-containing protein                        | 1  | 1   | 1  | 77   | 2.7  | 0.08   |
| Pput_3259 | 148548467 | LysR family transcriptional regulator                                   | 1  | 8   | 7  | 204  | 26.7 | 1.26   |
| Pput_3271 | 148548479 | 2~-5~ RNA ligase                                                        | 2  | 5   | 4  | 170  | 21.5 | 1.09   |
| Pput_3272 | 148548480 | aspartyl/asparaginyl beta-hydroxylase                                   | 1  | 1   | 1  | 63   | 7    | 0.11   |
| Pput_3273 | 148548481 | alkylhydroperoxidase                                                    | 1  | 3   | 3  | 79   | 26.3 | 1.39   |
| Pput_3281 | 148548489 | hypothetical protein Pput_3281                                          | 1  | 1   | 1  | 46   | 5    | 0.21   |
| Pput_3285 | 148548493 | CzcA family heavy metal efflux protein                                  | 3  | 3   | 3  | 81   | 1    | 0.09   |
| Pput_3292 | 148548500 | two component transcriptional regulator                                 | 1  | 1   | 1  | 41   | 4.1  | 0.13   |
| Pput_3299 | 148548507 | hypothetical protein Pput_3299                                          | 1  | 8   | 6  | 342  | 44.3 | 3.28   |
| Pput_3315 | 148548523 | hypothetical protein Pput_3315                                          | 1  | 1   | 1  | 27   | 6.3  | 0.23   |
| Pput_3317 | 148548525 | HesB/Yadr/YfhF-family protein                                           | 1  | 1   | 1  | 26   | 4.6  | 0.18   |
| Pput_3319 | 148548527 | fatty acid cistrans isomerase                                           | 3  | 4   | 3  | 108  | 2.1  | 0.16   |
| Pput_3320 | 148548528 | B12-dependent methionine synthase                                       | 2  | 2   | 1  | 78   | 0.9  | 0.06   |
| Pput_3324 | 148548532 | sulfite reductase (ferredoxin)                                          | 5  | 31  | 19 | 1045 | 34.5 | 2.61   |
| Pput_3325 | 148548533 | hypothetical protein Pput_3325                                          | 2  | 5   | 3  | 176  | 18.3 | 1.28   |
| Pput_3326 | 148548534 | leucine-rich repeat-containing protein                                  | 4  | 4   | 2  | 142  | 0.7  | 0.08   |
| Pput_3327 | 148548535 | 2,5-diketo-D-gluconate reductase B                                      | 2  | 2   | 2  | 100  | 4.1  | 0.26   |
| Pput_3331 | 148548539 | peptidase M14, carboxypeptidase A                                       | 2  | 2   | 1  | 63   | 1.8  | 0.18   |
| Pput_3339 | 148548547 | multi-sensor signal transduction histidine kinase                       | 1  | 1   | 1  | 24   | 0.9  | 0.04   |
| Pput_3340 | 148548548 | response regulator receiver protein                                     | 2  | 5   | 5  | 133  | 22.2 | 1.35   |
| Pput_3341 | 148548549 | multi-sensor hybrid histidine kinase                                    | 2  | 3   | 3  | 87   | 2.3  | 0.13   |
| Pput_3345 | 148548553 | AMP-dependent synthetase and ligase                                     | 1  | 5   | 3  | 279  | 6.2  | 0.23   |
| Pput_3347 | 148548555 | CBS domain-containing protein                                           | 1  | 1   | 1  | 43   | 2.1  | 0.09   |
| Pput_3353 | 148548561 | phage integrase family protein                                          | 1  | 1   | 1  | 29   | 2    | 0.08   |
| Pput_3398 | 148548606 | putative phage repressor                                                | 1  | 2   | 2  | 113  | 8.6  | 0.25   |
| Pput_3399 | 148548607 | hypothetical protein Pput_3399                                          | 1  | 2   | 2  | 80   | 12   | 0.38   |
| Pput_3400 | 148548608 | hypothetical protein Pput_3400                                          | 1  | 2   | 2  | 58   | 11.9 | 0.57   |
| Pput_3412 | 148548620 | hypothetical protein Pput_3412                                          | 2  | 2   | 2  | 61   | 4.7  | 0.4    |
| Pput_3420 | 148548628 | hypothetical protein Pput_3420                                          | 1  | 1   | 1  | 38   | 17   | 0.36   |
| Pput_3428 | 148548636 | putative 6-pyruvoyl tetrahydropterin synthase                           | 1  | 1   | 1  | 71   | 11.9 | 0.29   |
| Pput_3431 | 161936356 | bifunctional aconitate hydratase 2/2-methylisocitrate dehydratase       | 31 | 163 | 40 | 6768 | 44.3 | 9.37   |
| Pput_3432 | 148548640 | 2-methylcitrate dehydratase                                             | 3  | 6   | 5  | 179  | 4.3  | 0.42   |
| Pput_3433 | 148548641 | putative AcnD-accessory protein PrpF                                    | 1  | 4   | 4  | 140  | 11.9 | 0.41   |
| Pput_3434 | 148548642 | aconitate hydratase                                                     | 15 | 33  | 19 | 1115 | 22.1 | 1.63   |
| Pput_3435 | 148548643 | methylcitrate synthase                                                  | 5  | 26  | 17 | 689  | 53.1 | 5.41   |
| Pput_3436 | 148548644 | 2-methylisocitrate lyase                                                | 3  | 10  | 7  | 424  | 22.3 | 1.68   |
| Pput_3437 | 148548645 | GntR family transcriptional regulator                                   | 2  | 2   | 2  | 96   | 5    | 0.28   |
| Pput_3438 | 148548646 | hypothetical protein Pput_3438                                          | 1  | 4   | 4  | 116  | 25   | 0.99   |
| Pput_3439 | 148548647 | hypothetical protein Pput_3439                                          | 4  | 5   | 3  | 222  | 4.7  | 0.34   |
| Pput_3442 | 148548650 | phosphoadenosine phosphosulfate reductase                               | 2  | 3   | 3  | 132  | 13.5 | 0.42   |
| Pput_3443 | 148548651 | transcriptional regulator CysB                                          | 15 | 41  | 13 | 1288 | 29.3 | 6.27   |
| Pput_3444 | 148548652 | UspA domain-containing protein                                          | 2  | 2   | 2  | 123  | 8.5  | 0.42   |
| Pput_3445 | 148548653 | 2-dehydropanoate 2-reductase                                            | 1  | 1   | 1  | 53   | 2.6  | 0.1    |
| Pput_3446 | 148548654 | phospho-2-dehydro-3-deoxyheptonate aldolase                             | 3  | 9   | 7  | 301  | 20.7 | 1.09   |
| Pput_3448 | 148548656 | outer membrane lipoprotein OprI                                         | 30 | 219 | 10 | 8361 | 55.4 | 723.82 |
| Pput_3449 | 148548657 | Erk/YbiS/YcfS/YnhG family protein                                       | 1  | 1   | 1  | 32   | 2.8  | 0.11   |
| Pput_3454 | 148548662 | transcription elongation factor GreB                                    | 1  | 2   | 2  | 31   | 12.3 | 0.45   |
| Pput_3460 | 148548668 | hypothetical protein Pput_3460                                          | 2  | 4   | 3  | 149  | 17.2 | 1.26   |
| Pput_3461 | 148548669 | Acyl-CoA thioesterase-like protein                                      | 1  | 4   | 4  | 128  | 21.9 | 0.64   |
| Pput_3462 | 148548670 | CHAD domain-containing protein                                          | 1  | 5   | 4  | 94   | 19.3 | 0.83   |
| Pput_3463 | 148548671 | hypothetical protein Pput_3463                                          | 4  | 6   | 4  | 325  | 37   | 2.88   |
| Pput_3465 | 148548673 | PpiC-type peptidyl-prolyl cis-trans isomerase                           | 2  | 10  | 8  | 263  | 14.3 | 0.64   |
| Pput_3466 | 148548674 | histone family protein DNA-binding protein                              | 3  | 32  | 8  | 874  | 60   | 65.07  |
| Pput_3467 | 148548675 | ATP-dependent protease La                                               | 7  | 29  | 22 | 680  | 18.7 | 1.59   |
| Pput_3468 | 148548676 | ATP-dependent protease ATP-binding subunit ClpX                         | 4  | 24  | 13 | 863  | 30.2 | 2.53   |
| Pput_3469 | 148548677 | ATP-dependent Clp protease proteolytic subunit                          | 6  | 25  | 7  | 715  | 27.7 | 6.12   |
| Pput_3470 | 148548678 | trigger factor                                                          | 21 | 73  | 23 | 2370 | 49.7 | 10.94  |
| Pput_3472 | 148548680 | methylenetetrahydrofolate dehydrogenase (NADP(+))                       | 1  | 5   | 4  | 190  | 22.1 | 0.73   |
| Pput_3473 | 148548681 | extracellular solute-binding protein                                    | 2  | 22  | 15 | 651  | 29.4 | 1.68   |
| Pput_3489 | 148548697 | methyl-accepting chemotaxis sensory transducer                          | 1  | 3   | 3  | 166  | 8.9  | 0.18   |
| Pput_3502 | 148548710 | peptidase M24                                                           | 2  | 4   | 3  | 171  | 5    | 0.24   |
| Pput_3503 | 148548711 | hypothetical protein Pput_3503                                          | 1  | 1   | 1  | 33   | 6.2  | 0.09   |
| Pput_3507 | 148548715 | isochorismatase hydrolase                                               | 2  | 2   | 1  | 96   | 6.6  | 0.4    |
| Pput_3508 | 148548716 | XRE family transcriptional regulator                                    | 1  | 1   | 1  | 89   | 7    | 0.18   |
| Pput_3517 | 148548725 | hypothetical protein Pput_3517                                          | 3  | 10  | 4  | 306  | 13   | 2.49   |
| Pput_3520 | 148548728 | integrase catalytic subunit                                             | 2  | 2   | 2  | 57   | 2    | 0.16   |
| Pput_3521 | 148548729 | enoyl-CoA hydratase/isomerase                                           | 2  | 10  | 7  | 496  | 30   | 2.29   |
| Pput_3523 | 148548731 | acetyl-CoA acetyltransferase                                            | 3  | 3   | 2  | 109  | 2.3  | 0.27   |
| Pput_3524 | 148548732 | short-chain dehydrogenase/reductase SDR                                 | 1  | 6   | 6  | 209  | 29.8 | 1.26   |
| Pput_3525 | 148548733 | AMP-dependent synthetase and ligase                                     | 1  | 1   | 1  | 62   | 2.2  | 0.06   |
| Pput_3536 | 148548743 | alpha/beta hydrolase fold                                               | 2  | 2   | 1  | 104  | 3.9  | 0.2    |
| Pput_3546 | 148548753 | water stress/hypersensitive response protein                            | 2  | 3   | 3  | 96   | 12.6 | 0.71   |
| Pput_3548 | 148548755 | protein of unknown function DUF883, ElaB                                | 1  | 1   | 1  | 57   | 7.7  | 0.26   |
| Pput_3549 | 148548756 | tRNA--hydroxylase                                                       | 1  | 1   | 1  | 53   | 6.3  | 0.16   |
| Pput_3550 | 148548757 | UspA domain-containing protein                                          | 3  | 22  | 10 | 457  | 35.5 | 3.63   |
| Pput_3552 | 148548759 | formate dehydrogenase, alpha subunit                                    | 9  | 16  | 10 | 487  | 7.1  | 0.51   |
| Pput_3553 | 148548760 | NADH dehydrogenase (quinone)                                            | 1  | 1   | 1  | 57   | 2.7  | 0.07   |
| Pput_3555 | 148548762 | ProQ activator of osmoprotectant transporter ProP                       | 2  | 5   | 4  | 175  | 20.8 | 1.19   |

|           |           |                                                                      |    |     |    |      |      |       |
|-----------|-----------|----------------------------------------------------------------------|----|-----|----|------|------|-------|
| Pput_3556 | 148548763 | XRE family transcriptional regulator                                 | 1  | 2   | 2  | 59   | 10.9 | 0.41  |
| Pput_3557 | 148548764 | putative aminotransferase                                            | 2  | 2   | 2  | 117  | 3.3  | 0.14  |
| Pput_3573 | 148548779 | tRNA-dihydrouridine synthase A                                       | 1  | 2   | 1  | 74   | 5.4  | 0.21  |
| Pput_3574 | 161936355 | transaldolase B                                                      | 2  | 23  | 14 | 751  | 51.9 | 4.97  |
| Pput_3576 | 148548782 | anti-sigma-factor antagonist                                         | 3  | 5   | 3  | 284  | 11.3 | 1.18  |
| Pput_3577 | 148548783 | response regulator receiver protein                                  | 2  | 2   | 2  | 85   | 5.9  | 0.18  |
| Pput_3578 | 148548784 | type IV pilus assembly PilZ                                          | 2  | 4   | 3  | 169  | 30.3 | 1.89  |
| Pput_3579 | 148548785 | VacJ family lipoprotein                                              | 3  | 15  | 10 | 559  | 43   | 3.9   |
| Pput_3582 | 148548788 | 7-cyano-7-deazaguanine reductase                                     | 1  | 3   | 3  | 68   | 15.2 | 0.41  |
| Pput_3584 | 148548790 | two component heavy metal response transcriptional regulator         | 1  | 1   | 1  | 66   | 6.2  | 0.15  |
| Pput_3585 | 148548791 | heavy metal sensor signal transduction histidine kinase              | 4  | 4   | 2  | 132  | 2.7  | 0.32  |
| Pput_3587 | 148548793 | lipoprotein releasing system, ATP-binding protein                    | 2  | 4   | 2  | 124  | 10.3 | 0.67  |
| Pput_3590 | 148548796 | glycerophosphoryl diester phosphodiesterase                          | 2  | 12  | 7  | 397  | 21.4 | 2.5   |
| Pput_3591 | 148548797 | soluble pyridine nucleotide transhydrogenase                         | 8  | 27  | 13 | 891  | 36.4 | 2.64  |
| Pput_3593 | 148548799 | glyceraldehyde-3-phosphate dehydrogenase                             | 33 | 125 | 25 | 4348 | 46.8 | 13.04 |
| Pput_3597 | 148548803 | beta-hexosaminidase                                                  | 2  | 9   | 5  | 361  | 14.9 | 1.1   |
| Pput_3598 | 148548804 | TetR family transcriptional regulator                                | 1  | 3   | 3  | 110  | 12.8 | 0.5   |
| Pput_3599 | 148548805 | LexA repressor                                                       | 1  | 2   | 1  | 63   | 5.9  | 0.37  |
| Pput_3602 | 148548808 | hypothetical protein Pput_3602                                       | 1  | 1   | 1  | 35   | 3.5  | 0.15  |
| Pput_3603 | 148548809 | DNA topoisomerase I                                                  | 3  | 22  | 20 | 579  | 20   | 1.18  |
| Pput_3604 | 148548810 | hypothetical protein Pput_3604                                       | 2  | 3   | 2  | 94   | 20.5 | 1.41  |
| Pput_3605 | 148548811 | 3-ketoacyl-CoA thiolase                                              | 1  | 5   | 5  | 163  | 12.5 | 0.54  |
| Pput_3606 | 148548812 | multifunctional fatty acid oxidation complex subunit alpha           | 3  | 26  | 16 | 951  | 21.4 | 1.65  |
| Pput_3608 | 148548814 | UspA domain-containing protein                                       | 4  | 17  | 6  | 467  | 32.2 | 7.57  |
| Pput_3609 | 148548815 | ABC transporter related                                              | 1  | 2   | 2  | 106  | 3.9  | 0.11  |
| Pput_3612 | 148548818 | putative CheW protein                                                | 1  | 2   | 2  | 76   | 6.1  | 0.23  |
| Pput_3619 | 148548825 | molybdenum cofactor biosynthesis protein B                           | 7  | 14  | 5  | 627  | 19   | 3.23  |
| Pput_3620 | 148548826 | hypothetical protein Pput_3620                                       | 1  | 1   | 1  | 33   | 12.3 | 0.5   |
| Pput_3624 | 148548830 | erythronate-4-phosphate dehydrogenase                                | 3  | 5   | 4  | 153  | 10.5 | 0.47  |
| Pput_3626 | 148548832 | putative RNA 2~-O-ribose methyltransferase                           | 1  | 1   | 1  | 61   | 4.2  | 0.09  |
| Pput_3627 | 148548833 | aconitate hydratase                                                  | 20 | 36  | 11 | 1152 | 10.7 | 1.49  |
| Pput_3628 | 148548834 | methyl-accepting chemotaxis sensory transducer                       | 2  | 3   | 3  | 92   | 3.6  | 0.2   |
| Pput_3630 | 148548836 | hypothetical protein Pput_3630                                       | 2  | 2   | 1  | 53   | 13.7 | 0.68  |
| Pput_3634 | 148548840 | protein of unknown function DUF883, ElaB                             | 2  | 2   | 1  | 116  | 10.6 | 0.7   |
| Pput_3637 | 148548843 | deoxyguanosinetriphosphate triphosphohydrolase-like protein          | 1  | 1   | 1  | 51   | 2.1  | 0.07  |
| Pput_3639 | 148548845 | PAS/PAC sensor hybrid histidine kinase                               | 1  | 1   | 1  | 27   | 0.8  | 0.03  |
| Pput_3640 | 148548846 | hypothetical protein Pput_3640                                       | 3  | 3   | 1  | 127  | 7.9  | 0.9   |
| Pput_3641 | 148548847 | D-alanyl-D-alanine carboxypeptidase/D-alanyl-D-alanine-endopeptidase | 1  | 1   | 1  | 29   | 3.1  | 0.07  |
| Pput_3643 | 229328218 | 23S rRNA m(2)G2445 methyltransferase                                 | 2  | 14  | 12 | 362  | 19.3 | 0.73  |
| Pput_3644 | 148548850 | ribosome modulation factor                                           | 3  | 10  | 6  | 295  | 54.9 | 12.87 |
| Pput_3645 | 148548851 | dihydroorotate dehydrogenase 2                                       | 1  | 2   | 2  | 40   | 4.9  | 0.2   |
| Pput_3651 | 148548857 | OmpF family protein                                                  | 20 | 88  | 18 | 2998 | 42.2 | 16.86 |
| Pput_3653 | 148548859 | TM helix repeat-containing protein                                   | 2  | 3   | 2  | 86   | 9.1  | 0.41  |
| Pput_3654 | 148548860 | hypothetical protein Pput_3654                                       | 1  | 1   | 1  | 30   | 14.4 | 0.42  |
| Pput_3655 | 148548861 | Mg2+ transporter protein, CorA family protein                        | 1  | 1   | 1  | 48   | 4.8  | 0.1   |
| Pput_3656 | 148548862 | ribonuclease activity regulator protein RraA                         | 4  | 24  | 9  | 812  | 33.7 | 11.43 |
| Pput_3658 | 148548864 | phosphoenolpyruvate synthase                                         | 17 | 56  | 22 | 1754 | 22.1 | 2.91  |
| Pput_3659 | 148548865 | hypothetical protein Pput_3659                                       | 1  | 3   | 3  | 88   | 15.1 | 0.41  |
| Pput_3660 | 148548866 | NAD-glutamate dehydrogenase                                          | 14 | 30  | 19 | 969  | 2.1  | 0.61  |
| Pput_3663 | 148548869 | diaminopimelate decarboxylase                                        | 2  | 2   | 1  | 108  | 2.9  | 0.16  |
| Pput_3675 | 148548881 | secretion protein HlyD family protein                                | 1  | 1   | 1  | 26   | 2.6  | 0.09  |
| Pput_3677 | 148548883 | GntR family transcriptional regulator                                | 1  | 1   | 1  | 31   | 3.5  | 0.13  |
| Pput_3680 | 148548886 | MerR family transcriptional regulator                                | 1  | 1   | 1  | 27   | 6    | 0.23  |
| Pput_3684 | 148548890 | sodium:dicarboxylate symporter                                       | 2  | 2   | 1  | 58   | 1.6  | 0.16  |
| Pput_3689 | 148548895 | HAD family hydrolase                                                 | 4  | 4   | 1  | 99   | 1.3  | 0.2   |
| Pput_3693 | 148548899 | acyl-CoA dehydrogenase domain-containing protein                     | 1  | 2   | 2  | 69   | 3.7  | 0.12  |
| Pput_3710 | 148548916 | ATPase                                                               | 2  | 3   | 2  | 202  | 7.2  | 0.33  |
| Pput_3715 | 148548921 | hypothetical protein Pput_3715                                       | 1  | 1   | 1  | 40   | 1.5  | 0.06  |
| Pput_3721 | 148548927 | hypothetical protein Pput_3721                                       | 2  | 5   | 4  | 125  | 11.3 | 0.51  |
| Pput_3725 | 148548931 | aminopeptidase N                                                     | 3  | 14  | 11 | 455  | 13.2 | 0.63  |
| Pput_3732 | 148548938 | cytochrome B561                                                      | 2  | 3   | 2  | 137  | 6.1  | 0.6   |
| Pput_3734 | 148548940 | NADH:flavin oxidoreductase/NADH oxidase                              | 2  | 2   | 2  | 67   | 2.2  | 0.1   |
| Pput_3735 | 148548941 | AraC-like transcriptional regulator                                  | 1  | 2   | 2  | 64   | 7.3  | 0.23  |
| Pput_3738 | 148548944 | short-chain dehydrogenase/reductase SDR                              | 1  | 2   | 2  | 114  | 17.6 | 0.31  |
| Pput_3740 | 148548946 | helix-turn-helix domain-containing protein                           | 1  | 1   | 1  | 36   | 4    | 0.11  |
| Pput_3743 | 148548949 | short-chain dehydrogenase/reductase SDR                              | 1  | 1   | 1  | 29   | 7.1  | 0.14  |
| Pput_3747 | 148548953 | pili assembly chaperone                                              | 1  | 1   | 1  | 31   | 3.8  | 0.15  |
| Pput_3750 | 148548956 | response regulator receiver modulated diguanylate phosphodiesterase  | 1  | 1   | 1  | 29   | 3.3  | 0.08  |
| Pput_3752 | 148548958 | two component LuxR family transcriptional regulator                  | 1  | 1   | 1  | 28   | 4.2  | 0.16  |
| Pput_3755 | 148548961 | fimbrial biogenesis outer membrane usher protein                     | 1  | 1   | 1  | 30   | 1.4  | 0.04  |
| Pput_3760 | 148548966 | O-succinylhomoserine sulphydrylase                                   | 3  | 8   | 5  | 289  | 15.4 | 0.82  |
| Pput_3761 | 148548967 | amidophosphoribosyltransferase                                       | 8  | 18  | 6  | 678  | 13.8 | 1.37  |
| Pput_3763 | 148548969 | sporulation domain-containing protein                                | 1  | 2   | 2  | 87   | 10.7 | 0.36  |
| Pput_3765 | 148548971 | acetyl-CoA carboxylase subunit beta                                  | 2  | 28  | 11 | 895  | 34.3 | 4.5   |
| Pput_3766 | 148548972 | N-(5~-phosphoribosyl)anthranilate isomerase                          | 1  | 3   | 3  | 135  | 18   | 0.61  |
| Pput_3768 | 148548974 | peptidoglycan-binding LysM                                           | 1  | 1   | 1  | 27   | 0.9  | 0.04  |
| Pput_3770 | 148548976 | aspartate-semialdehyde dehydrogenase                                 | 2  | 17  | 15 | 527  | 53.5 | 3.17  |
| Pput_3771 | 148548977 | 3-isopropylmalate dehydrogenase                                      | 2  | 8   | 7  | 430  | 24.4 | 1     |
| Pput_3772 | 148548978 | methyltransferase type 11                                            | 1  | 5   | 5  | 199  | 21.7 | 0.87  |
| Pput_3773 | 148548979 | isopropylmalate isomerase small subunit                              | 4  | 14  | 9  | 432  | 48.1 | 3.53  |
| Pput_3774 | 148548980 | isopropylmalate isomerase large subunit                              | 4  | 22  | 15 | 503  | 28.1 | 2.25  |
| Pput_3777 | 148548983 | heat shock protein Hsp20                                             | 4  | 32  | 12 | 914  | 70.7 | 32.88 |
| Pput_3780 | 148548986 | thioesterase superfamily protein                                     | 1  | 2   | 2  | 86   | 18.1 | 0.52  |
| Pput_3783 | 148548989 | glutamyl-tRNA synthetase                                             | 6  | 20  | 11 | 500  | 15   | 1.61  |
| Pput_3784 | 148548990 | secretion protein HlyD family protein                                | 1  | 1   | 1  | 28   | 3.6  | 0.09  |
| Pput_3786 | 148548992 | excinuclease ABC subunit B                                           | 1  | 4   | 4  | 104  | 6.9  | 0.21  |
| Pput_3787 | 148548993 | aromatic amino acid aminotransferase                                 | 7  | 21  | 12 | 882  | 32.7 | 2.31  |
| Pput_3789 | 148548995 | hypothetical protein Pput_3789                                       | 2  | 10  | 7  | 401  | 41.1 | 2.66  |
| Pput_3790 | 148548996 | hypothetical protein Pput_3790                                       | 2  | 6   | 3  | 211  | 10.4 | 1.2   |



|           |           |                                                                  |    |     |    |      |      |       |
|-----------|-----------|------------------------------------------------------------------|----|-----|----|------|------|-------|
| Pput_3793 | 148548999 | TatD family hydrolase                                            | 1  | 2   | 2  | 63   | 10   | 0.28  |
| Pput_3795 | 148549001 | thymidylate kinase                                               | 2  | 4   | 3  | 240  | 12.9 | 0.72  |
| Pput_3798 | 229328217 | 3-oxoacyl-(acyl carrier protein) synthase II                     | 1  | 2   | 2  | 71   | 7.2  | 0.18  |
| Pput_3799 | 148549005 | acyl carrier protein                                             | 2  | 5   | 4  | 208  | 47.4 | 4.06  |
| Pput_3800 | 148549006 | 3-ketoacyl-(acyl-carrier-protein) reductase                      | 8  | 36  | 9  | 1338 | 45.1 | 11.44 |
| Pput_3801 | 148549007 | malonyl CoA-acyl carrier protein transacylase                    | 1  | 4   | 3  | 190  | 16.7 | 0.54  |
| Pput_3802 | 148549008 | putative glycerol-3-phosphate acyltransferase PlsX               | 1  | 2   | 2  | 79   | 8    | 0.23  |
| Pput_3803 | 148549009 | 50S ribosomal protein L32                                        | 4  | 9   | 3  | 280  | 53.3 | 8.74  |
| Pput_3804 | 148549010 | hypothetical protein Pput_3804                                   | 1  | 3   | 3  | 154  | 20.6 | 0.71  |
| Pput_3805 | 148549011 | Maf-like protein                                                 | 1  | 2   | 2  | 45   | 13   | 0.39  |
| Pput_3806 | 148549012 | signal peptide peptidase SppA, 36K type                          | 1  | 5   | 5  | 233  | 18.8 | 0.63  |
| Pput_3808 | 148549014 | RluA family pseudouridine synthase                               | 2  | 6   | 6  | 218  | 14.1 | 0.72  |
| Pput_3809 | 148549015 | ribonuclease                                                     | 21 | 78  | 21 | 1985 | 15.7 | 2.64  |
| Pput_3810 | 148549016 | UDP-N-acetylenolpyruvoylglucosamine reductase                    | 1  | 2   | 2  | 64   | 6.2  | 0.21  |
| Pput_3811 | 148549017 | protein tyrosine phosphatase                                     | 1  | 1   | 1  | 66   | 7.1  | 0.23  |
| Pput_3812 | 148549018 | 3-deoxy-manno-octulosonate cytidyltransferase                    | 1  | 2   | 2  | 59   | 7.5  | 0.29  |
| Pput_3816 | 148549022 | MotA/TolQ/ExbB proton channel                                    | 1  | 2   | 2  | 106  | 8    | 0.34  |
| Pput_3820 | 148549026 | ABC transporter related                                          | 1  | 2   | 2  | 36   | 10.3 | 0.23  |
| Pput_3821 | 148549027 | glutathione S-transferase domain-containing protein              | 1  | 2   | 1  | 58   | 6.8  | 0.35  |
| Pput_3822 | 148549028 | acyl-CoA dehydrogenase                                           | 3  | 11  | 9  | 265  | 9.4  | 0.5   |
| Pput_3829 | 148549035 | YD repeat-/RHS repeat-containing protein                         | 1  | 1   | 1  | 25   | 0.6  | 0.03  |
| Pput_3837 | 148549043 | hypothetical protein Pput_3837                                   | 1  | 1   | 1  | 31   | 3.6  | 0.12  |
| Pput_3838 | 148549044 | GAF domain-containing protein                                    | 4  | 5   | 2  | 243  | 15   | 1.16  |
| Pput_3839 | 148549045 | hypothetical protein Pput_3839                                   | 2  | 9   | 8  | 383  | 34.2 | 1.45  |
| Pput_3840 | 148549046 | histidine kinase                                                 | 1  | 1   | 1  | 29   | 1    | 0.04  |
| Pput_3841 | 148549047 | glutathione peroxidase                                           | 3  | 10  | 4  | 336  | 27.2 | 2.75  |
| Pput_3842 | 148549048 | methionine sulfoxide reductase B                                 | 2  | 9   | 5  | 164  | 27.5 | 3.54  |
| Pput_3843 | 148549049 | aminotransferase AlaT                                            | 8  | 21  | 9  | 764  | 22.8 | 2.24  |
| Pput_3844 | 148549050 | heat shock protein HtpX                                          | 2  | 5   | 4  | 252  | 15.6 | 0.68  |
| Pput_3845 | 148549051 | thiopurine S-methyltransferase                                   | 2  | 5   | 4  | 179  | 19.9 | 0.93  |
| Pput_3847 | 148549053 | DEAD/DEAH box helicase domain-containing protein                 | 3  | 19  | 13 | 654  | 26.7 | 1.35  |
| Pput_3849 | 148549055 | phospho-2-dehydro-3-deoxyheptonate aldolase                      | 2  | 9   | 5  | 281  | 11.4 | 0.69  |
| Pput_3853 | 148549059 | LysR family transcriptional regulator                            | 2  | 2   | 2  | 59   | 2.8  | 0.22  |
| Pput_3855 | 148549061 | OsmC family protein                                              | 3  | 22  | 10 | 640  | 44.4 | 12.59 |
| Pput_3856 | 148549062 | elongation factor P                                              | 4  | 43  | 10 | 1075 | 37   | 9.15  |
| Pput_3860 | 148549066 | 3-ketoacyl-(acyl-carrier-protein) reductase                      | 1  | 2   | 2  | 91   | 8    | 0.32  |
| Pput_3863 | 148549069 | hypothetical protein Pput_3863                                   | 1  | 1   | 1  | 32   | 7.9  | 0.29  |
| Pput_3865 | 148549071 | enoyl-CoA hydratase                                              | 1  | 2   | 2  | 56   | 7.9  | 0.33  |
| Pput_3866 | 148549072 | 1-acyl-sn-glycerol-3-phosphate acyltransferase                   | 1  | 1   | 1  | 33   | 2.1  | 0.14  |
| Pput_3868 | 148549074 | amidotransferase                                                 | 1  | 1   | 1  | 50   | 4.5  | 0.14  |
| Pput_3872 | 148549078 | sulfatase                                                        | 2  | 4   | 3  | 251  | 5.5  | 0.2   |
| Pput_3875 | 148549081 | hypothetical protein Pput_3875                                   | 1  | 1   | 1  | 32   | 5.1  | 0.2   |
| Pput_3878 | 148549084 | hypothetical protein Pput_3878                                   | 1  | 5   | 4  | 147  | 24.2 | 1.46  |
| Pput_3880 | 148549086 | chorismate synthase                                              | 1  | 5   | 5  | 216  | 16.8 | 0.58  |
| Pput_3884 | 148549090 | N5-glutamine S-adenosyl-L-methionine-dependent methyltransferase | 1  | 7   | 6  | 237  | 17.9 | 1.07  |
| Pput_3885 | 148549091 | isochorismatase hydrolase                                        | 3  | 7   | 4  | 315  | 17.9 | 1.49  |
| Pput_3887 | 148549093 | Smr protein/MutS2                                                | 2  | 4   | 4  | 67   | 16.1 | 0.83  |
| Pput_3888 | 148549094 | GTP cyclohydrolase I                                             | 6  | 15  | 5  | 466  | 14.9 | 3.45  |
| Pput_3889 | 148549095 | glutaredoxin                                                     | 1  | 1   | 1  | 29   | 7.3  | 0.28  |
| Pput_3890 | 148549096 | glutathione S-transferase domain-containing protein              | 1  | 1   | 1  | 59   | 6    | 0.16  |
| Pput_3894 | 148549100 | short chain dehydrogenase                                        | 2  | 2   | 1  | 100  | 3.2  | 0.28  |
| Pput_3895 | 148549101 | alcohol dehydrogenase                                            | 3  | 14  | 8  | 410  | 20.4 | 1.81  |
| Pput_3896 | 148549102 | orotidine 5~-phosphate decarboxylase                             | 3  | 5   | 4  | 206  | 18.9 | 0.83  |
| Pput_3897 | 148549103 | hypothetical protein Pput_3897                                   | 4  | 7   | 2  | 315  | 40   | 4.92  |
| Pput_3904 | 148549110 | lipopolysaccharide biosynthesis protein                          | 1  | 4   | 4  | 259  | 13   | 0.41  |
| Pput_3905 | 148549111 | polysaccharide export protein                                    | 1  | 1   | 1  | 65   | 3.7  | 0.1   |
| Pput_3908 | 148549114 | 2-dehydro-3-deoxyphosphooctonate aldolase                        | 2  | 8   | 6  | 166  | 22.9 | 1.26  |
| Pput_3911 | 148549117 | hypothetical protein Pput_3911                                   | 1  | 1   | 1  | 28   | 1.4  | 0.09  |
| Pput_3917 | 148549123 | capsule polysaccharide biosynthesis protein                      | 1  | 1   | 1  | 29   | 2.1  | 0.05  |
| Pput_3922 | 148549128 | glycosyl transferase family protein                              | 2  | 3   | 3  | 105  | 5.8  | 0.34  |
| Pput_3923 | 148549129 | dTDP-4-dehydrorhamnose 3,5-epimerase                             | 1  | 4   | 4  | 144  | 20.4 | 0.98  |
| Pput_3925 | 148549131 | ABC transporter related                                          | 1  | 1   | 1  | 27   | 1.1  | 0.07  |
| Pput_3926 | 148549132 | glycosyl transferase family protein                              | 1  | 1   | 1  | 27   | 0.8  | 0.02  |
| Pput_3928 | 148549134 | DegT/DnrJ/EryC1/StrS aminotransferase                            | 2  | 8   | 6  | 250  | 19   | 0.89  |
| Pput_3929 | 148549135 | glycosyl transferase family protein                              | 1  | 2   | 2  | 89   | 6.4  | 0.22  |
| Pput_3930 | 148549136 | WxcM domain-containing protein                                   | 2  | 5   | 3  | 212  | 7.3  | 0.58  |
| Pput_3933 | 148549139 | glucose-1-phosphate thymidyltransferase                          | 3  | 8   | 7  | 222  | 12.8 | 1.07  |
| Pput_3934 | 148549140 | dTDP-4-dehydrorhamnose reductase                                 | 1  | 3   | 3  | 79   | 9    | 0.39  |
| Pput_3935 | 148549141 | dTDP-glucose 4,6-dehydratase                                     | 1  | 6   | 6  | 152  | 27.7 | 0.7   |
| Pput_3938 | 148549144 | NAD-dependent epimerase/dehydratase                              | 1  | 1   | 1  | 43   | 5.4  | 0.11  |
| Pput_3941 | 148549147 | integration host factor subunit beta                             | 2  | 2   | 1  | 123  | 10.2 | 0.72  |
| Pput_3942 | 148549148 | 30S ribosomal protein S1                                         | 28 | 177 | 41 | 5418 | 48   | 22.6  |
| Pput_3943 | 148549149 | cytidylate kinase                                                | 1  | 4   | 4  | 134  | 16   | 0.79  |
| Pput_3944 | 148549150 | 3-phosphoshikimate 1-carboxyvinyltransferase                     | 3  | 10  | 8  | 390  | 11.8 | 0.53  |
| Pput_3945 | 148549151 | chorismate mutase                                                | 2  | 8   | 7  | 185  | 22.3 | 0.94  |
| Pput_3946 | 148549152 | phosphoserine aminotransferase                                   | 2  | 14  | 11 | 428  | 27.8 | 2.01  |
| Pput_3947 | 148549153 | DNA gyrase subunit A                                             | 8  | 27  | 14 | 927  | 14.1 | 1.18  |
| Pput_3949 | 148549155 | 3-demethylubiquinone-9 3-methyltransferase                       | 3  | 11  | 6  | 457  | 25.4 | 2.09  |
| Pput_3950 | 148549156 | phosphoglycolate phosphatase                                     | 1  | 1   | 1  | 98   | 6.3  | 0.15  |
| Pput_3951 | 148549157 | short chain dehydrogenase                                        | 1  | 3   | 3  | 89   | 15.4 | 0.5   |
| Pput_3955 | 148549161 | DSBA oxidoreductase                                              | 2  | 2   | 1  | 111  | 5.2  | 0.34  |
| Pput_3957 | 148549163 | BolA family protein                                              | 3  | 3   | 1  | 157  | 15.3 | 1.11  |
| Pput_3958 | 148549164 | hypothetical protein Pput_3958                                   | 3  | 15  | 9  | 488  | 39.7 | 5.18  |
| Pput_3959 | 148549165 | fumarate hydratase                                               | 2  | 7   | 5  | 197  | 6    | 0.48  |
| Pput_3962 | 148549168 | hypothetical protein Pput_3962                                   | 2  | 15  | 13 | 539  | 36.2 | 1.32  |
| Pput_3964 | 148549170 | asparagine synthase (glutamine-hydrolyzing)                      | 1  | 1   | 1  | 41   | 1.3  | 0.06  |
| Pput_3965 | 148549171 | glutathione synthase                                             | 1  | 2   | 2  | 36   | 3.8  | 0.12  |
| Pput_3967 | 148549173 | hypothetical protein Pput_3967                                   | 1  | 1   | 1  | 27   | 18.7 | 0.47  |
| Pput_3969 | 148549175 | short chain dehydrogenase                                        | 3  | 3   | 2  | 89   | 3.7  | 0.39  |

|           |           |                                                                         |    |     |    |      |      |        |
|-----------|-----------|-------------------------------------------------------------------------|----|-----|----|------|------|--------|
| Pput_3976 | 148549182 | acetate permease                                                        | 9  | 14  | 2  | 784  | 4    | 0.89   |
| Pput_3977 | 148549183 | hypothetical protein Pput_3977                                          | 2  | 2   | 2  | 96   | 12.6 | 0.68   |
| Pput_3978 | 148549184 | substrate-binding region of ABC-type glycine betaine transport system   | 1  | 10  | 7  | 428  | 30.1 | 1.81   |
| Pput_3982 | 148549188 | VacJ family lipoprotein                                                 | 1  | 2   | 2  | 43   | 9.1  | 0.26   |
| Pput_3983 | 148549189 | patatin                                                                 | 1  | 1   | 1  | 29   | 1.6  | 0.09   |
| Pput_3985 | 148549191 | septum formation inhibitor                                              | 1  | 2   | 2  | 40   | 7.1  | 0.3    |
| Pput_3986 | 148549192 | septum site-determining protein MinD                                    | 3  | 20  | 13 | 600  | 49.3 | 4.92   |
| Pput_3987 | 148549193 | cell division topological specificity factor MinE                       | 3  | 9   | 4  | 200  | 29.8 | 6.39   |
| Pput_3989 | 148549195 | putative aminopeptidase 2                                               | 1  | 5   | 5  | 111  | 11.7 | 0.46   |
| Pput_3993 | 148549199 | ABC-type Fe3+ transport system periplasmic component-like protein       | 1  | 6   | 6  | 108  | 22.6 | 0.74   |
| Pput_3994 | 148549200 | type I phosphodiesterase/nucleotide pyrophosphatase                     | 1  | 1   | 1  | 46   | 3.3  | 0.12   |
| Pput_3997 | 148549203 | ABC transporter related                                                 | 1  | 1   | 1  | 63   | 4.3  | 0.1    |
| Pput_3998 | 148549204 | HAD family hydrolase                                                    | 1  | 1   | 1  | 84   | 8.3  | 0.15   |
| Pput_3999 | 148549205 | quinone oxidoreductase putative, PIG3                                   | 2  | 12  | 7  | 370  | 26.9 | 1.56   |
| Pput_4000 | 148549206 | carboxyl-terminal protease                                              | 3  | 8   | 6  | 248  | 7    | 0.4    |
| Pput_4002 | 148549208 | hypothetical protein Pput_4002                                          | 1  | 1   | 1  | 41   | 7.4  | 0.28   |
| Pput_4005 | 148549211 | peptidylprolyl isomerase, FKBP-type                                     | 2  | 20  | 14 | 731  | 49.6 | 11.85  |
| Pput_4006 | 148549212 | LysR family transcriptional regulator                                   | 2  | 3   | 3  | 94   | 7.7  | 0.34   |
| Pput_4016 | 148549222 | molybdopterin oxidoreductase                                            | 1  | 1   | 1  | 26   | 1    | 0.03   |
| Pput_4017 | 148549223 | methionine aminopeptidase, type I                                       | 1  | 1   | 1  | 51   | 3.4  | 0.13   |
| Pput_4018 | 148549224 | recombination associated protein                                        | 5  | 16  | 10 | 683  | 35.5 | 2.23   |
| Pput_4026 | 148549232 | hypothetical protein Pput_4026                                          | 1  | 1   | 1  | 29   | 1.6  | 0.07   |
| Pput_4030 | 148549236 | membrane protein involved in aromatic hydrocarbon degradation           | 1  | 3   | 3  | 81   | 7    | 0.26   |
| Pput_4033 | 148549239 | glutathione peroxidase                                                  | 3  | 3   | 2  | 119  | 5.5  | 0.57   |
| Pput_4040 | 148549246 | nicotinate-nucleotide--dimethylbenzimidazole phosphoribosyltransferase  | 1  | 1   | 1  | 52   | 2.8  | 0.1    |
| Pput_4047 | 148549253 | cob(I)tyrinic acid a,c-diamide adenosyltransferase                      | 3  | 14  | 8  | 383  | 44.3 | 4.06   |
| Pput_4050 | 148549256 | DNA replication initiation factor                                       | 1  | 3   | 3  | 91   | 17   | 0.49   |
| Pput_4052 | 148549258 | hypothetical protein Pput_4052                                          | 1  | 2   | 2  | 82   | 8.5  | 0.21   |
| Pput_4053 | 148549259 | phosphoribosylaminoimidazole synthetase                                 | 1  | 5   | 4  | 140  | 15.1 | 0.61   |
| Pput_4054 | 148549260 | phosphoribosylglycinamide formyltransferase                             | 1  | 2   | 2  | 98   | 11.1 | 0.35   |
| Pput_4055 | 148549261 | hypothetical protein Pput_4055                                          | 2  | 11  | 10 | 277  | 39.4 | 2.99   |
| Pput_4060 | 148549266 | hypothetical protein Pput_4060                                          | 2  | 14  | 12 | 336  | 48   | 7.31   |
| Pput_4061 | 148549267 | nucleoside triphosphate pyrophosphohydrolase                            | 1  | 1   | 1  | 37   | 4.7  | 0.12   |
| Pput_4062 | 148549268 | (p)ppGpp synthetase I, SpoT/RelA                                        | 5  | 15  | 13 | 442  | 17.2 | 0.75   |
| Pput_4063 | 148549269 | 23S rRNA 5-methyluridine methyltransferase                              | 5  | 5   | 2  | 167  | 2.7  | 0.4    |
| Pput_4064 | 148549270 | cysteine synthase B                                                     | 1  | 5   | 5  | 198  | 15.4 | 0.7    |
| Pput_4068 | 148549274 | D-isomer specific 2-hydroxyacid dehydrogenase, NAD-binding              | 2  | 3   | 2  | 128  | 8.2  | 0.32   |
| Pput_4069 | 148549275 | hypothetical protein Pput_4069                                          | 1  | 1   | 1  | 52   | 6.2  | 0.24   |
| Pput_4071 | 148549277 | alkyl hydroperoxide reductase/ Thiol specific antioxidant/ Mal allergen | 2  | 3   | 2  | 193  | 20.8 | 0.75   |
| Pput_4072 | 148549278 | arsenate reductase                                                      | 1  | 1   | 1  | 46   | 7.7  | 0.31   |
| Pput_4073 | 148549279 | flavodoxin/nitric oxide synthase                                        | 2  | 7   | 6  | 240  | 29.9 | 1.88   |
| Pput_4075 | 148549281 | 3-methyladenine DNA glycosylase-like protein                            | 2  | 3   | 2  | 94   | 9    | 0.47   |
| Pput_4076 | 148549282 | PP-loop domain-containing protein                                       | 1  | 2   | 2  | 48   | 8.4  | 0.26   |
| Pput_4079 | 148549285 | oxidoreductase FAD/NAD(P)-binding subunit                               | 2  | 14  | 9  | 213  | 45.2 | 3.85   |
| Pput_4081 | 148549287 | diacylglycerol kinase                                                   | 1  | 2   | 2  | 98   | 19.8 | 0.69   |
| Pput_4082 | 148549288 | two component LuxR family transcriptional regulator                     | 2  | 8   | 7  | 291  | 36.6 | 1.62   |
| Pput_4084 | 148549290 | hypothetical protein Pput_4084                                          | 3  | 4   | 4  | 168  | 18   | 1.07   |
| Pput_4088 | 148549294 | recombinase A                                                           | 1  | 6   | 6  | 256  | 19.7 | 0.77   |
| Pput_4091 | 148549297 | hypothetical protein Pput_4091                                          | 1  | 1   | 1  | 30   | 4.1  | 0.11   |
| Pput_4118 | 148549324 | HNH endonuclease                                                        | 1  | 1   | 1  | 28   | 8.9  | 0.35   |
| Pput_4120 | 148549326 | hypothetical protein Pput_4120                                          | 1  | 1   | 1  | 33   | 8.5  | 0.46   |
| Pput_4130 | 148549336 | phage replication protein O                                             | 1  | 1   | 1  | 25   | 3.2  | 0.12   |
| Pput_4131 | 148549337 | putative phage repressor                                                | 1  | 2   | 2  | 56   | 5.9  | 0.27   |
| Pput_4150 | 148549356 | phage integrase family protein                                          | 1  | 1   | 1  | 31   | 3.7  | 0.1    |
| Pput_4152 | 148549358 | DNA mismatch repair protein MutS                                        | 1  | 2   | 2  | 118  | 2.6  | 0.08   |
| Pput_4155 | 148549361 | peptidase M23B                                                          | 1  | 2   | 2  | 55   | 8.4  | 0.29   |
| Pput_4156 | 148549362 | protein-L-isoaspartate O-methyltransferase                              | 1  | 2   | 2  | 45   | 8.5  | 0.33   |
| Pput_4157 | 148549363 | stationary phase survival protein SurE                                  | 2  | 2   | 1  | 111  | 3.2  | 0.28   |
| Pput_4159 | 148549365 | 2-C-methyl-D-erythritol 2,4-cyclodiphosphate synthase                   | 2  | 3   | 1  | 198  | 8.9  | 0.74   |
| Pput_4160 | 148549366 | S-formylglutathione hydrolase                                           | 2  | 5   | 4  | 107  | 12.3 | 0.68   |
| Pput_4161 | 148549367 | S-(hydroxymethyl)glutathione dehydrogenase                              | 1  | 4   | 4  | 145  | 15.9 | 0.43   |
| Pput_4163 | 148549369 | 2-C-methyl-D-erythritol 4-phosphate cytidylyltransferase                | 1  | 1   | 1  | 86   | 8.5  | 0.15   |
| Pput_4165 | 148549371 | phosphopyruvate hydratase                                               | 15 | 45  | 16 | 2155 | 54.5 | 5.33   |
| Pput_4166 | 148549372 | 2-dehydro-3-deoxyphosphooctonate aldolase                               | 2  | 6   | 5  | 229  | 18.5 | 0.89   |
| Pput_4167 | 148549373 | CTP synthetase                                                          | 16 | 49  | 18 | 1473 | 35.8 | 4.02   |
| Pput_4169 | 148549375 | tRNA(Ile)-lysine synthetase                                             | 1  | 1   | 1  | 30   | 2.1  | 0.08   |
| Pput_4170 | 148549376 | acetyl-CoA carboxylase carboxyltransferase subunit alpha                | 2  | 21  | 14 | 789  | 52.1 | 4.89   |
| Pput_4173 | 148549379 | lipid-A-disaccharide synthase                                           | 1  | 2   | 2  | 86   | 7.5  | 0.19   |
| Pput_4174 | 148549380 | UDP-N-acetylglucosamine acyltransferase                                 | 1  | 3   | 3  | 84   | 14   | 0.46   |
| Pput_4175 | 148549381 | (3R)-hydroxymyristoyl-ACP dehydratase                                   | 2  | 10  | 4  | 337  | 27.4 | 3.66   |
| Pput_4176 | 148549382 | UDP-3-O-[3-hydroxymyristoyl] glucosamine N-acyltransferase              | 1  | 1   | 1  | 52   | 4.3  | 0.1    |
| Pput_4177 | 148549383 | outer membrane chaperone Skp (OmpH)                                     | 5  | 31  | 16 | 665  | 64.7 | 28.01  |
| Pput_4178 | 148549384 | surface antigen (D15)                                                   | 1  | 22  | 17 | 596  | 21.6 | 1.41   |
| Pput_4182 | 148549388 | undecaprenyl diphosphate synthase                                       | 1  | 3   | 3  | 149  | 13.5 | 0.46   |
| Pput_4183 | 148549389 | ribosome recycling factor                                               | 4  | 26  | 15 | 737  | 68.6 | 28.2   |
| Pput_4184 | 148549390 | uridylylate kinase                                                      | 2  | 6   | 4  | 209  | 24.3 | 1.09   |
| Pput_4185 | 148549391 | elongation factor Ts                                                    | 22 | 194 | 30 | 4828 | 66.2 | 216.26 |
| Pput_4186 | 148549392 | 30S ribosomal protein S2                                                | 20 | 84  | 17 | 2024 | 59.2 | 44.39  |
| Pput_4187 | 148549393 | methionine aminopeptidase                                               | 2  | 20  | 11 | 463  | 33.1 | 4.79   |
| Pput_4188 | 148549394 | PfI uridylyl-transferase                                                | 2  | 3   | 3  | 155  | 2.4  | 0.11   |
| Pput_4193 | 148549399 | arsenate reductase and related                                          | 2  | 2   | 2  | 68   | 11.9 | 0.58   |
| Pput_4194 | 148549400 | tetrahydrodipicolinate N-succinyltransferase-like protein               | 6  | 18  | 8  | 777  | 25   | 2.44   |
| Pput_4199 | 148549405 | succinyl-diaminopimelate desuccinylase                                  | 1  | 1   | 1  | 31   | 3.4  | 0.09   |
| Pput_4201 | 148549407 | hypothetical protein Pput_4201                                          | 1  | 1   | 1  | 35   | 8.8  | 0.27   |
| Pput_4202 | 148549408 | cold-shock DNA-binding domain-containing protein                        | 1  | 2   | 2  | 78   | 40.6 | 1.34   |
| Pput_4204 | 148549410 | hypothetical protein Pput_4204                                          | 1  | 1   | 1  | 34   | 15.9 | 0.27   |
| Pput_4208 | 148549414 | TetR family transcriptional regulator                                   | 2  | 3   | 2  | 148  | 4.7  | 0.51   |
| Pput_4209 | 148549415 | hypothetical protein Pput_4209                                          | 1  | 1   | 1  | 55   | 5.4  | 0.14   |
| Pput_4212 | 148549418 | PEP phosphonomutase and related enzymes-like protein                    | 2  | 5   | 4  | 229  | 13.8 | 0.72   |

|           |           |                                                                             |    |     |    |       |      |        |
|-----------|-----------|-----------------------------------------------------------------------------|----|-----|----|-------|------|--------|
| Pput_4216 | 148549422 | adenylate kinase                                                            | 2  | 17  | 11 | 549   | 58.8 | 7.52   |
| Pput_4217 | 148549423 | phosphoenolpyruvate carboxylase                                             | 2  | 12  | 12 | 347   | 12.7 | 0.55   |
| Pput_4218 | 148549424 | hypothetical protein Pput_4218                                              | 1  | 5   | 3  | 145   | 34.2 | 1.24   |
| Pput_4219 | 148549425 | hypothetical protein Pput_4219                                              | 2  | 3   | 3  | 107   | 15.2 | 0.91   |
| Pput_4220 | 148549426 | OmpA/MotB domain-containing protein                                         | 1  | 15  | 15 | 458   | 64.6 | 5.31   |
| Pput_4221 | 148549427 | hypothetical protein Pput_4221                                              | 1  | 1   | 1  | 58    | 9.3  | 0.33   |
| Pput_4224 | 148549430 | hypothetical protein Pput_4224                                              | 2  | 9   | 5  | 323   | 30.2 | 2.59   |
| Pput_4225 | 148549431 | TetR family transcriptional regulator                                       | 1  | 1   | 1  | 37    | 3.4  | 0.15   |
| Pput_4226 | 148549432 | lysyl-tRNA synthetase                                                       | 5  | 24  | 17 | 818   | 34.4 | 2.45   |
| Pput_4227 | 148549433 | peptide chain release factor 2                                              | 1  | 3   | 3  | 91    | 11.5 | 0.37   |
| Pput_4228 | 148549434 | response regulator receiver modulated diguanylate cyclase                   | 1  | 2   | 2  | 41    | 8.4  | 0.21   |
| Pput_4230 | 148549436 | CheA signal transduction histidine kinase                                   | 1  | 2   | 2  | 57    | 2.7  | 0.09   |
| Pput_4233 | 148549439 | putative CheW protein                                                       | 1  | 1   | 1  | 52    | 5.4  | 0.21   |
| Pput_4234 | 148549440 | methyl-accepting chemotaxis sensory transducer                              | 2  | 4   | 3  | 124   | 5.7  | 0.26   |
| Pput_4235 | 148549441 | hypothetical protein Pput_4235                                              | 1  | 6   | 6  | 196   | 22.6 | 1.41   |
| Pput_4236 | 148549442 | extracellular solute-binding protein                                        | 1  | 10  | 9  | 353   | 37.9 | 1.16   |
| Pput_4237 | 148549443 | spermidine/putrescine ABC transporter ATPase subunit                        | 1  | 3   | 3  | 94    | 9.9  | 0.33   |
| Pput_4240 | 161936354 | gamma-aminobutyraldehyde dehydrogenase                                      | 1  | 10  | 8  | 434   | 23.2 | 1.02   |
| Pput_4243 | 148549449 | NADH:flavin oxidoreductase/NADH oxidase                                     | 3  | 20  | 18 | 663   | 50.5 | 3.5    |
| Pput_4245 | 148549451 | YaeQ family protein                                                         | 2  | 7   | 4  | 298   | 20   | 1.63   |
| Pput_4246 | 148549452 | L-carnitine dehydratase/bile acid-inducible protein F                       | 1  | 1   | 1  | 25    | 4    | 0.09   |
| Pput_4250 | 148549456 | threonine synthase                                                          | 2  | 17  | 8  | 731   | 20.7 | 1.15   |
| Pput_4251 | 148549457 | homoserine dehydrogenase                                                    | 4  | 16  | 8  | 677   | 22.6 | 1.64   |
| Pput_4252 | 148549458 | thiol:disulfide interchange protein DsbC                                    | 1  | 1   | 1  | 37    | 3.2  | 0.14   |
| Pput_4256 | 148549462 | 50S ribosomal protein L19                                                   | 6  | 85  | 17 | 2664  | 83.6 | 481.95 |
| Pput_4257 | 148549463 | tRNA (guanine-N(1))-methyltransferase                                       | 1  | 2   | 2  | 29    | 6.8  | 0.29   |
| Pput_4258 | 148549464 | 16S rRNA-processing protein RimM                                            | 2  | 3   | 3  | 99    | 10.7 | 0.61   |
| Pput_4259 | 148549465 | 30S ribosomal protein S16                                                   | 3  | 25  | 5  | 777   | 61.4 | 30.96  |
| Pput_4260 | 148549466 | signal recognition particle protein                                         | 3  | 5   | 5  | 158   | 7.9  | 0.41   |
| Pput_4264 | 148549470 | phosphoribosylglycinamide formyltransferase 2                               | 1  | 3   | 3  | 166   | 9.7  | 0.29   |
| Pput_4267 | 148549473 | hexapeptide repeat-containing transferase                                   | 2  | 11  | 5  | 414   | 28.7 | 4.94   |
| Pput_4271 | 148549477 | polypeptide-transport-associated domain-containing protein                  | 1  | 1   | 1  | 26    | 1.3  | 0.06   |
| Pput_4277 | 148549483 | Pyrrolo-quinoline quinone                                                   | 8  | 16  | 11 | 548   | 10.1 | 0.74   |
| Pput_4278 | 148549484 | ATP-dependent protease La                                                   | 16 | 47  | 20 | 1663  | 21.6 | 2.28   |
| Pput_4281 | 148549487 | putative methyltransferase                                                  | 2  | 2   | 2  | 61    | 4.1  | 0.2    |
| Pput_4285 | 148549491 | pyridoxine 5~-phosphate synthase                                            | 1  | 9   | 7  | 342   | 36.7 | 2.4    |
| Pput_4287 | 148549493 | GTP-binding protein Era                                                     | 1  | 12  | 11 | 284   | 41.7 | 2.52   |
| Pput_4288 | 148549494 | ribonuclease III                                                            | 1  | 1   | 1  | 43    | 3.9  | 0.15   |
| Pput_4289 | 148549495 | signal peptidase I                                                          | 2  | 7   | 7  | 171   | 20.8 | 1.07   |
| Pput_4290 | 148549496 | GTP-binding protein LepA                                                    | 2  | 8   | 7  | 237   | 14.1 | 0.53   |
| Pput_4291 | 148549497 | protease Do                                                                 | 7  | 28  | 9  | 836   | 16.6 | 2.33   |
| Pput_4292 | 148549498 | sigma E regulatory protein, MucB/RseB                                       | 2  | 9   | 8  | 379   | 28.3 | 1.36   |
| Pput_4293 | 148549499 | anti sigma-E protein, RseA                                                  | 1  | 2   | 2  | 80    | 8.2  | 0.4    |
| Pput_4294 | 148549500 | RNA polymerase sigma factor AlgU                                            | 1  | 5   | 4  | 196   | 26.9 | 1.21   |
| Pput_4295 | 148549501 | L-aspartate oxidase                                                         | 1  | 4   | 4  | 126   | 8.8  | 0.27   |
| Pput_4297 | 148549503 | hypothetical protein Pput_4297                                              | 1  | 2   | 2  | 54    | 20.2 | 0.93   |
| Pput_4298 | 148549504 | glycine cleavage T protein (aminomethyl transferase)                        | 3  | 8   | 4  | 335   | 16.6 | 1.05   |
| Pput_4301 | 148549507 | two component transcriptional regulator                                     | 1  | 1   | 1  | 48    | 4    | 0.15   |
| Pput_4303 | 148549509 | hypothetical protein Pput_4303                                              | 2  | 2   | 1  | 99    | 3.7  | 0.22   |
| Pput_4308 | 148549514 | uracil-DNA glycosylase                                                      | 1  | 1   | 1  | 26    | 5.2  | 0.15   |
| Pput_4309 | 148549515 | enoyl-CoA hydratase/isomerase                                               | 4  | 10  | 5  | 292   | 11.7 | 0.9    |
| Pput_4318 | 148549523 | hypothetical protein Pput_4318                                              | 3  | 3   | 1  | 111   | 1.2  | 0.24   |
| Pput_4319 | 148549524 | hypothetical protein Pput_4319                                              | 2  | 2   | 1  | 65    | 5.4  | 0.32   |
| Pput_4320 | 148549525 | glycoside hydrolase family 3 protein                                        | 1  | 1   | 1  | 83    | 1.8  | 0.04   |
| Pput_4325 | 148549530 | hypothetical protein Pput_4325                                              | 1  | 3   | 3  | 144   | 16.9 | 0.61   |
| Pput_4328 | 148549533 | AraC-like transcriptional regulator                                         | 1  | 1   | 1  | 28    | 3.6  | 0.11   |
| Pput_4329 | 148549534 | hypothetical protein Pput_4329                                              | 1  | 1   | 1  | 26    | 3.1  | 0.06   |
| Pput_4332 | 148549537 | NAD-dependent epimerase/dehydratase                                         | 1  | 3   | 3  | 108   | 20.6 | 0.62   |
| Pput_4333 | 148549538 | LysR family transcriptional regulator                                       | 1  | 1   | 1  | 26    | 2.3  | 0.11   |
| Pput_4334 | 148549539 | PEP phosphonmutase and related enzymes-like protein                         | 1  | 4   | 4  | 148   | 19   | 0.57   |
| Pput_4336 | 148549541 | TetR family transcriptional regulator                                       | 2  | 4   | 4  | 114   | 15.2 | 0.72   |
| Pput_4337 | 148549542 | RND family efflux transporter MFP subunit                                   | 2  | 8   | 7  | 229   | 24.2 | 0.93   |
| Pput_4338 | 148549543 | hydrophobe/amphiphile efflux-1 (HAE1) family protein                        | 3  | 3   | 3  | 155   | 1.1  | 0.09   |
| Pput_4339 | 148549544 | RND efflux system outer membrane lipoprotein                                | 6  | 37  | 18 | 1318  | 38   | 4.02   |
| Pput_4341 | 148549546 | hypothetical protein Pput_4341                                              | 1  | 1   | 1  | 60    | 6.9  | 0.2    |
| Pput_4343 | 148549548 | 3-oxoadipate enol-lactonase                                                 | 1  | 6   | 5  | 243   | 22.1 | 1.1    |
| Pput_4345 | 148549550 | major facilitator superfamily metabolite/H(+) symporter                     | 1  | 1   | 1  | 32    | 2.6  | 0.08   |
| Pput_4348 | 148549553 | beta-ketoadipate pathway transcription regulator                            | 3  | 8   | 6  | 279   | 22   | 1.19   |
| Pput_4351 | 148549556 | protein of unknown function DUF853, NPT hydrolase putative                  | 3  | 6   | 4  | 200   | 6.7  | 0.45   |
| Pput_4352 | 148549557 | methyl-accepting chemotaxis sensory transducer                              | 3  | 4   | 4  | 258   | 4.6  | 0.21   |
| Pput_4354 | 148549559 | hypothetical protein Pput_4354                                              | 1  | 1   | 1  | 71    | 6.7  | 0.13   |
| Pput_4356 | 148549561 | formyltetrahydrofolate deformylase                                          | 3  | 9   | 4  | 389   | 17.3 | 1.23   |
| Pput_4357 | 148549562 | hypothetical protein Pput_4357                                              | 5  | 48  | 16 | 1238  | 75.2 | 112.12 |
| Pput_4359 | 148549564 | exonuclease I                                                               | 2  | 2   | 1  | 77    | 1.9  | 0.14   |
| Pput_4362 | 148549567 | pyruvate kinase                                                             | 22 | 62  | 19 | 1728  | 44.6 | 6.47   |
| Pput_4363 | 148549568 | chaperonin GroEL                                                            | 51 | 878 | 52 | 27043 | 61.9 | 217.83 |
| Pput_4364 | 148549569 | co-chaperonin GroES                                                         | 4  | 10  | 6  | 353   | 54.6 | 5.26   |
| Pput_4365 | 148549570 | FxsA                                                                        | 3  | 9   | 5  | 247   | 25.5 | 2.88   |
| Pput_4366 | 148549571 | pyridoxamine 5~-phosphate oxidase-related, FMN-binding                      | 1  | 6   | 6  | 126   | 35   | 1.18   |
| Pput_4367 | 148549572 | hypothetical protein Pput_4367                                              | 1  | 1   | 1  | 33    | 2.4  | 0.1    |
| Pput_4372 | 148549577 | putative nucleotide-binding protein                                         | 5  | 25  | 15 | 730   | 52.2 | 14.9   |
| Pput_4375 | 148549580 | ATP--cobalamin adenosyltransferase                                          | 3  | 5   | 3  | 285   | 20.7 | 1.05   |
| Pput_4377 | 148549582 | glutathione S-transferase domain-containing protein                         | 2  | 7   | 5  | 208   | 21.9 | 1.48   |
| Pput_4378 | 148549583 | bifunctional ornithine acetyltransferase/N-acetylglutamate synthase protein | 7  | 18  | 7  | 747   | 13.1 | 1.76   |
| Pput_4379 | 148549584 | preprotein translocase subunit SecA                                         | 22 | 55  | 19 | 1604  | 13.7 | 2.1    |
| Pput_4381 | 148549586 | UDP-3-O-[3-hydroxymyristoyl] N-acetylglucosamine deacetylase                | 2  | 10  | 7  | 367   | 29.4 | 1.44   |
| Pput_4382 | 148549587 | cell division protein FtsZ                                                  | 3  | 13  | 11 | 449   | 32.9 | 1.74   |
| Pput_4383 | 148549588 | cell division protein FtsA                                                  | 5  | 15  | 11 | 597   | 34   | 1.72   |
| Pput_4385 | 148549590 | D-alanine--D-alanine ligase                                                 | 3  | 11  | 6  | 369   | 17.9 | 1.35   |

|           |           |                                                                                     |    |     |    |      |      |        |
|-----------|-----------|-------------------------------------------------------------------------------------|----|-----|----|------|------|--------|
| Pput_4386 | 148549591 | UDP-N-acetylmuramate--L-alanine ligase                                              | 1  | 8   | 6  | 355  | 16.2 | 0.73   |
| Pput_4387 | 148549592 | undecaprenyldiphospho-muramoylpentapeptide beta-N- acetylglucosaminyltransferase    | 1  | 2   | 2  | 56   | 6.7  | 0.2    |
| Pput_4389 | 148549594 | UDP-N-acetylmuramoyl-L-alanyl-D-glutamate synthetase                                | 2  | 7   | 5  | 186  | 19.1 | 0.64   |
| Pput_4391 | 148549596 | UDP-N-acetylmuramoylalanyl-D-glutamyl-2,6-diaminopimelate--D-alanyl-D-alanyl ligase | 2  | 7   | 7  | 213  | 22.2 | 0.67   |
| Pput_4392 | 148549597 | UDP-N-acetylmuramoylalanyl-D-glutamate--2,6-diaminopimelate ligase                  | 4  | 22  | 14 | 779  | 24.4 | 1.87   |
| Pput_4394 | 148549599 | cell division protein FtsL                                                          | 1  | 1   | 1  | 26   | 9.3  | 0.37   |
| Pput_4395 | 148549600 | S-adenosyl-methyltransferase MraW                                                   | 1  | 10  | 10 | 281  | 38.7 | 1.83   |
| Pput_4396 | 148549601 | cell division protein MraZ                                                          | 2  | 2   | 2  | 92   | 6.6  | 0.46   |
| Pput_4398 | 148549602 | uroporphyrin-III C/tetrapyrrole methyltransferase                                   | 1  | 4   | 4  | 174  | 15.1 | 0.58   |
| Pput_4399 | 148549603 | LppC family lipoprotein                                                             | 5  | 15  | 9  | 500  | 19.3 | 1.01   |
| Pput_4401 | 148549605 | phosphoheptose isomerase                                                            | 1  | 1   | 1  | 51   | 4.6  | 0.18   |
| Pput_4402 | 148549606 | transport-associated                                                                | 4  | 33  | 13 | 1030 | 58.3 | 18.98  |
| Pput_4403 | 148549607 | ClpXP protease specificity-enhancing factor                                         | 2  | 3   | 1  | 114  | 9.8  | 0.81   |
| Pput_4404 | 148549608 | glutathione S-transferase domain-containing protein                                 | 1  | 1   | 1  | 27   | 4.8  | 0.16   |
| Pput_4405 | 148549609 | ubiquinol--cytochrome c reductase, cytochrome c1                                    | 5  | 13  | 7  | 351  | 24.7 | 1.97   |
| Pput_4407 | 148549611 | ubiquinol-cytochrome c reductase, iron-sulfur subunit                               | 10 | 40  | 9  | 1319 | 29.4 | 10.77  |
| Pput_4408 | 148549612 | 30S ribosomal protein S9                                                            | 7  | 113 | 10 | 1827 | 57.7 | 59.03  |
| Pput_4409 | 148549613 | 50S ribosomal protein L13                                                           | 4  | 67  | 23 | 1500 | 73.2 | 637.73 |
| Pput_4410 | 148549614 | aldo/keto reductase                                                                 | 2  | 11  | 8  | 406  | 23.1 | 1.22   |
| Pput_4412 | 148549616 | AFG1 family ATPase                                                                  | 1  | 4   | 4  | 127  | 15.1 | 0.4    |
| Pput_4413 | 148549617 | tryptophanyl-tRNA synthetase                                                        | 5  | 16  | 9  | 601  | 15.8 | 1.47   |
| Pput_4414 | 148549618 | alpha/beta fold family hydrolase-like protein                                       | 1  | 1   | 1  | 54   | 4.7  | 0.17   |
| Pput_4415 | 148549619 | hypothetical protein Pput_4415                                                      | 3  | 14  | 7  | 425  | 46.2 | 5      |
| Pput_4421 | 148549623 | bifunctional sulfate adenyllyltransferase subunit 1/adenyllysulfate kinase protein  | 21 | 62  | 17 | 2634 | 22.7 | 4.04   |
| Pput_4422 | 148549624 | sulfate adenyllyltransferase subunit 2                                              | 4  | 30  | 14 | 785  | 40   | 7.17   |
| Pput_4423 | 148549625 | hypothetical protein Pput_4423                                                      | 2  | 3   | 2  | 96   | 10.7 | 0.43   |
| Pput_4425 | 148549627 | ABC transporter related                                                             | 2  | 8   | 6  | 254  | 25.6 | 1.48   |
| Pput_4427 | 148549629 | polar amino acid ABC transporter, inner membrane subunit                            | 1  | 1   | 1  | 55   | 2.8  | 0.09   |
| Pput_4428 | 148549630 | extracellular solute-binding protein                                                | 13 | 101 | 29 | 2825 | 62.6 | 36.31  |
| Pput_4429 | 148549631 | carboxylesterase                                                                    | 1  | 1   | 1  | 52   | 6.4  | 0.16   |
| Pput_4430 | 148549632 | ATP-dependent RNA helicase RhlB                                                     | 2  | 8   | 8  | 203  | 17.3 | 0.68   |
| Pput_4431 | 148549633 | molybdopterin biosynthesis MoaE protein                                             | 1  | 1   | 1  | 27   | 13.5 | 0.24   |
| Pput_4433 | 148549635 | molybdenum cofactor biosynthesis protein C                                          | 2  | 8   | 4  | 155  | 21.5 | 1.89   |
| Pput_4434 | 148549636 | PhoH family protein                                                                 | 4  | 17  | 8  | 521  | 18.1 | 1.39   |
| Pput_4444 | 148549646 | poly(beta-D-mannuronate) lyase                                                      | 1  | 1   | 1  | 27   | 3    | 0.09   |
| Pput_4447 | 148549649 | hypothetical protein Pput_4447                                                      | 1  | 1   | 1  | 30   | 2.8  | 0.17   |
| Pput_4450 | 148549652 | hypothetical protein Pput_4450                                                      | 1  | 3   | 2  | 55   | 13.6 | 0.83   |
| Pput_4451 | 148549653 | short chain dehydrogenase                                                           | 1  | 1   | 1  | 82   | 4.4  | 0.13   |
| Pput_4452 | 148549654 | RND efflux system outer membrane lipoprotein                                        | 2  | 5   | 4  | 176  | 7.4  | 0.38   |
| Pput_4455 | 148549657 | LysR family transcriptional regulator                                               | 1  | 1   | 1  | 35   | 2.7  | 0.11   |
| Pput_4456 | 148549658 | UspA domain-containing protein                                                      | 2  | 3   | 3  | 76   | 9.9  | 0.62   |
| Pput_4460 | 148549662 | RND efflux system outer membrane lipoprotein                                        | 1  | 1   | 1  | 29   | 2.9  | 0.07   |
| Pput_4461 | 148549663 | LysR family transcriptional regulator                                               | 2  | 8   | 4  | 269  | 12.4 | 1.08   |
| Pput_4462 | 148549664 | D-isomer specific 2-hydroxyacid dehydrogenase, NAD-binding                          | 4  | 9   | 8  | 432  | 24.7 | 1.18   |
| Pput_4477 | 148549679 | Glu/Leu/Phe/Val dehydrogenase, dimerisation region                                  | 1  | 1   | 1  | 51   | 2.4  | 0.1    |
| Pput_4479 | 148549681 | maleylacetoacetate isomerase                                                        | 1  | 2   | 2  | 83   | 11.4 | 0.36   |
| Pput_4480 | 148549682 | fumarylacetoacetase                                                                 | 1  | 1   | 1  | 58   | 3.7  | 0.08   |
| Pput_4483 | 148549685 | hypothetical protein Pput_4483                                                      | 1  | 1   | 1  | 27   | 0.7  | 0.03   |
| Pput_4488 | 148549690 | flavodoxin                                                                          | 1  | 1   | 1  | 35   | 6    | 0.24   |
| Pput_4489 | 148549691 | putative PAS/PAC sensor protein                                                     | 1  | 1   | 1  | 31   | 8.5  | 0.23   |
| Pput_4493 | 148549695 | short chain dehydrogenase                                                           | 2  | 4   | 4  | 160  | 15.9 | 0.63   |
| Pput_4494 | 148549696 | hypothetical protein Pput_4494                                                      | 1  | 1   | 1  | 61   | 12.4 | 0.35   |
| Pput_4497 | 148549699 | trans-2-enoyl-CoA reductase                                                         | 6  | 34  | 21 | 1002 | 51.4 | 7.32   |
| Pput_4498 | 148549700 | acetyl-CoA acetyltransferase                                                        | 2  | 2   | 2  | 51   | 4.1  | 0.18   |
| Pput_4501 | 148549703 | cobalamin synthesis protein, P47K                                                   | 1  | 4   | 1  | 166  | 5.5  | 0.49   |
| Pput_4503 | 148549705 | carbon starvation protein CstA                                                      | 8  | 12  | 4  | 508  | 3.5  | 0.6    |
| Pput_4504 | 148549706 | type IV pilus assembly PilZ                                                         | 1  | 4   | 3  | 121  | 26.7 | 1.63   |
| Pput_4507 | 148549709 | large-conductance mechanosensitive channel                                          | 1  | 1   | 1  | 29   | 7.2  | 0.27   |
| Pput_4508 | 148549710 | oxidoreductase FAD/NAD(P)-binding subunit                                           | 1  | 2   | 2  | 95   | 9.5  | 0.25   |
| Pput_4516 | 148549718 | tRNA (uracil-5-)-methyltransferase                                                  | 3  | 3   | 3  | 97   | 3.6  | 0.27   |
| Pput_4517 | 148549719 | protocatechuate 3,4-dioxygenase, alpha subunit                                      | 2  | 3   | 2  | 120  | 12.4 | 0.54   |
| Pput_4518 | 148549720 | protocatechuate 3,4-dioxygenase, beta subunit                                       | 1  | 2   | 2  | 65   | 11.7 | 0.3    |
| Pput_4519 | 148549721 | protein of unknown function, zinc metallopeptidase putative                         | 1  | 4   | 4  | 129  | 14.2 | 0.56   |
| Pput_4521 | 148549723 | gamma-glutamyltransferase                                                           | 1  | 1   | 1  | 39   | 3.2  | 0.06   |
| Pput_4530 | 148549732 | 3-hydroxyisobutyrate dehydrogenase                                                  | 5  | 23  | 10 | 1053 | 60.7 | 5.38   |
| Pput_4531 | 148549733 | methylmalonate-semialdehyde dehydrogenase                                           | 19 | 72  | 22 | 3041 | 40.7 | 8.34   |
| Pput_4532 | 148549734 | LysR family transcriptional regulator                                               | 1  | 3   | 3  | 103  | 12.3 | 0.35   |
| Pput_4538 | 148549740 | exodeoxyribonuclease V, gamma subunit                                               | 1  | 1   | 1  | 25   | 1.6  | 0.03   |
| Pput_4540 | 148549742 | putative sulfite oxidase subunit YedY                                               | 1  | 1   | 1  | 50   | 2.7  | 0.1    |
| Pput_4542 | 148549744 | ketol-acid reductoisomerase                                                         | 22 | 130 | 24 | 5069 | 58.9 | 36.92  |
| Pput_4543 | 148549745 | acetolactate synthase 3 regulatory subunit                                          | 3  | 12  | 6  | 459  | 39.3 | 4.39   |
| Pput_4544 | 148549746 | acetolactate synthase 3 catalytic subunit                                           | 10 | 31  | 13 | 1363 | 25.8 | 2.39   |
| Pput_4546 | 148549748 | hypothetical protein Pput_4546                                                      | 1  | 6   | 6  | 253  | 28.9 | 1.18   |
| Pput_4548 | 148549750 | hypothetical protein Pput_4548                                                      | 2  | 11  | 7  | 390  | 9.8  | 0.79   |
| Pput_4549 | 148549751 | TfoX domain-containing protein                                                      | 3  | 3   | 2  | 129  | 12   | 1.17   |
| Pput_4555 | 148549757 | sugar fermentation stimulation protein A                                            | 1  | 1   | 1  | 29   | 4.6  | 0.15   |
| Pput_4557 | 148549759 | TraR/DksA family transcriptional regulator                                          | 5  | 6   | 3  | 212  | 10.1 | 1.38   |
| Pput_4558 | 148549760 | glutamyl-Q tRNA(Asp) synthetase                                                     | 1  | 1   | 1  | 90   | 7.7  | 0.11   |
| Pput_4560 | 148549762 | multi-sensor signal transduction histidine kinase                                   | 3  | 3   | 3  | 103  | 1    | 0.09   |
| Pput_4561 | 148549763 | two component, sigma54 specific, Fis family transcriptional regulator               | 2  | 12  | 7  | 496  | 11   | 1.02   |
| Pput_4562 | 148549764 | poly(A) polymerase                                                                  | 1  | 4   | 4  | 129  | 11.3 | 0.31   |
| Pput_4564 | 148549766 | 3-methyl-2-oxobutanoate hydroxymethyltransferase                                    | 1  | 3   | 3  | 90   | 14.3 | 0.47   |
| Pput_4565 | 148549767 | pantoate--beta-alanine ligase                                                       | 2  | 6   | 4  | 227  | 11.5 | 0.84   |
| Pput_4566 | 148549768 | glucose-6-phosphate isomerase                                                       | 5  | 19  | 13 | 568  | 22.2 | 1.43   |
| Pput_4567 | 148549769 | acetyl-CoA synthetase                                                               | 7  | 23  | 15 | 813  | 21.7 | 1.43   |
| Pput_4569 | 148549771 | hypothetical protein Pput_4569                                                      | 1  | 1   | 1  | 36   | 1    | 0.03   |
| Pput_4572 | 148549774 | transport-associated                                                                | 3  | 18  | 6  | 755  | 55.2 | 13.08  |
| Pput_4573 | 148549775 | polynucleotide phosphorylase/polyadenylase                                          | 29 | 99  | 25 | 3555 | 31.8 | 7.06   |
| Pput_4574 | 148549776 | 30S ribosomal protein S15                                                           | 3  | 5   | 3  | 147  | 31.5 | 2.56   |

|           |           |                                                                                           |    |     |    |      |      |       |
|-----------|-----------|-------------------------------------------------------------------------------------------|----|-----|----|------|------|-------|
| Pput_4575 | 148549777 | tRNA pseudouridine synthase B                                                             | 1  | 1   | 1  | 49   | 3.9  | 0.11  |
| Pput_4576 | 148549778 | ribosome-binding factor A                                                                 | 2  | 6   | 4  | 243  | 30.3 | 2.13  |
| Pput_4577 | 148549779 | translation initiation factor IF-2                                                        | 19 | 61  | 21 | 2175 | 19.5 | 2.9   |
| Pput_4578 | 148549780 | transcription elongation factor NusA                                                      | 17 | 46  | 17 | 1570 | 17.2 | 3.92  |
| Pput_4579 | 148549781 | hypothetical protein Pput_4579                                                            | 1  | 1   | 1  | 39   | 4.7  | 0.2   |
| Pput_4580 | 148549782 | preprotein translocase subunit SecG                                                       | 3  | 8   | 2  | 278  | 27.3 | 2.7   |
| Pput_4581 | 148549783 | triosephosphate isomerase                                                                 | 2  | 5   | 3  | 276  | 13.9 | 0.81  |
| Pput_4582 | 148549784 | phosphoglucosamine mutase                                                                 | 2  | 9   | 5  | 330  | 13.7 | 0.8   |
| Pput_4583 | 148549785 | dihydropteroate synthase                                                                  | 1  | 2   | 2  | 78   | 6    | 0.26  |
| Pput_4584 | 148549786 | ATP-dependent metalloprotease FtsH                                                        | 6  | 16  | 10 | 545  | 11.2 | 0.94  |
| Pput_4585 | 148549787 | ribosomal RNA methyltransferase RrmJ/FtsJ                                                 | 1  | 2   | 2  | 47   | 17.4 | 0.36  |
| Pput_4586 | 148549788 | hypothetical protein Pput_4586                                                            | 3  | 8   | 3  | 216  | 18.6 | 3.16  |
| Pput_4588 | 148549790 | transcription elongation factor GreA                                                      | 3  | 7   | 5  | 202  | 26.3 | 1.93  |
| Pput_4589 | 148549791 | carbamoyl phosphate synthase large subunit                                                | 21 | 42  | 15 | 1179 | 8.1  | 1.3   |
| Pput_4590 | 148549792 | carbamoyl phosphate synthase small subunit                                                | 2  | 2   | 2  | 65   | 3.1  | 0.18  |
| Pput_4591 | 148549793 | dihydrodipicolinate reductase                                                             | 2  | 9   | 5  | 467  | 27.7 | 1.52  |
| Pput_4592 | 148549794 | chaperone protein DnaJ                                                                    | 3  | 10  | 7  | 275  | 21.7 | 0.98  |
| Pput_4593 | 148549795 | molecular chaperone DnaK                                                                  | 47 | 207 | 48 | 7011 | 50.7 | 41.28 |
| Pput_4594 | 148549796 | GrpE protein                                                                              | 3  | 22  | 12 | 564  | 50.8 | 10.79 |
| Pput_4595 | 148549797 | DNA repair protein RecN                                                                   | 1  | 1   | 1  | 27   | 1.8  | 0.06  |
| Pput_4596 | 148549798 | ferric uptake regulator family protein                                                    | 4  | 18  | 4  | 894  | 36.6 | 8.68  |
| Pput_4597 | 148549799 | SmpA/OmlA domain-containing protein                                                       | 1  | 1   | 1  | 88   | 12.9 | 0.2   |
| Pput_4598 | 148549800 | cyclase/dehydrase                                                                         | 1  | 2   | 1  | 69   | 6.9  | 0.55  |
| Pput_4599 | 148549801 | SsrA-binding protein                                                                      | 3  | 7   | 7  | 164  | 19.4 | 2.03  |
| Pput_4602 | 148549804 | L-lactate dehydrogenase                                                                   | 1  | 1   | 1  | 85   | 6    | 0.09  |
| Pput_4604 | 148549806 | hypothetical protein Pput_4604                                                            | 1  | 1   | 1  | 41   | 10.4 | 0.42  |
| Pput_4608 | 148549810 | phage integrase family protein                                                            | 1  | 1   | 1  | 26   | 3.4  | 0.1   |
| Pput_4610 | 148549812 | hypothetical protein Pput_4610                                                            | 1  | 1   | 1  | 27   | 1.5  | 0.05  |
| Pput_4614 | 148549816 | EcoEI R domain-containing protein                                                         | 2  | 2   | 1  | 56   | 1.4  | 0.08  |
| Pput_4615 | 148549817 | non-specific serine/threonine protein kinase                                              | 1  | 1   | 1  | 25   | 1.4  | 0.03  |
| Pput_4618 | 148549820 | hypothetical protein Pput_4618                                                            | 1  | 1   | 1  | 31   | 1.4  | 0.05  |
| Pput_4623 | 148549825 | transcriptional regulator-like protein                                                    | 1  | 1   | 1  | 26   | 4.5  | 0.11  |
| Pput_4634 | 148549836 | alcohol dehydrogenase                                                                     | 1  | 11  | 9  | 291  | 41.7 | 1.72  |
| Pput_4636 | 148549838 | acyl-CoA thioesterase II                                                                  | 1  | 6   | 4  | 303  | 21.8 | 0.93  |
| Pput_4637 | 148549839 | GCN5-related N-acetyltransferase                                                          | 1  | 1   | 1  | 40   | 4.8  | 0.18  |
| Pput_4647 | 148549849 | hypothetical protein Pput_4647                                                            | 1  | 1   | 1  | 28   | 6.7  | 0.19  |
| Pput_4652 | 148549854 | AsnC family transcriptional regulator                                                     | 4  | 9   | 6  | 304  | 18.4 | 2.39  |
| Pput_4655 | 148549857 | AMP nucleosidase                                                                          | 5  | 14  | 8  | 576  | 11.2 | 1     |
| Pput_4656 | 148549858 | acyl-CoA dehydrogenase domain-containing protein                                          | 1  | 10  | 9  | 330  | 20.7 | 0.82  |
| Pput_4658 | 148549860 | phosphomethylpyrimidine kinase                                                            | 1  | 3   | 3  | 109  | 16.6 | 0.45  |
| Pput_4659 | 148549861 | thiamine-phosphate pyrophosphorylase                                                      | 2  | 3   | 3  | 117  | 11.1 | 0.56  |
| Pput_4660 | 148549862 | glutamate-1-semialdehyde aminotransferase                                                 | 6  | 11  | 6  | 358  | 10.8 | 0.85  |
| Pput_4661 | 148549863 | Sel1 domain-containing protein                                                            | 2  | 2   | 2  | 93   | 6.6  | 0.38  |
| Pput_4663 | 148549865 | PhoH family protein                                                                       | 1  | 2   | 2  | 69   | 6.6  | 0.21  |
| Pput_4664 | 148549866 | putative metalloprotease                                                                  | 1  | 7   | 5  | 200  | 24.2 | 2.94  |
| Pput_4665 | 148549867 | CBS domain-containing protein                                                             | 2  | 5   | 3  | 154  | 11.1 | 0.66  |
| Pput_4669 | 148549871 | leucyl-tRNA synthetase                                                                    | 3  | 12  | 9  | 309  | 10.6 | 0.48  |
| Pput_4670 | 148549872 | rare lipoprotein B                                                                        | 2  | 45  | 22 | 1293 | 70.1 | 76.48 |
| Pput_4671 | 148549873 | DNA polymerase III subunit delta                                                          | 1  | 1   | 1  | 38   | 2.9  | 0.1   |
| Pput_4673 | 148549875 | lytic murein transglycosylase                                                             | 3  | 3   | 3  | 116  | 2.5  | 0.24  |
| Pput_4674 | 148549876 | peptidase U61, LD-carboxypeptidase A                                                      | 1  | 1   | 1  | 46   | 2.9  | 0.11  |
| Pput_4677 | 148549879 | hypothetical protein Pput_4677                                                            | 2  | 3   | 2  | 139  | 19.8 | 1.33  |
| Pput_4678 | 148549880 | Serine-type D-Ala-D-Ala carboxypeptidase                                                  | 6  | 15  | 9  | 540  | 31.3 | 1.64  |
| Pput_4683 | 148549885 | rRNA large subunit methyltransferase                                                      | 1  | 2   | 2  | 27   | 14.8 | 0.48  |
| Pput_4684 | 148549886 | iojap-like protein                                                                        | 1  | 8   | 8  | 211  | 45.6 | 3.88  |
| Pput_4685 | 148549887 | nicotinic acid mononucleotide adenyltransferase                                           | 1  | 1   | 1  | 38   | 2.6  | 0.15  |
| Pput_4686 | 148549888 | gamma-glutamyl phosphate reductase                                                        | 1  | 1   | 1  | 52   | 2.4  | 0.08  |
| Pput_4689 | 148549891 | peptidase S16, Ion domain-containing protein                                              | 1  | 1   | 1  | 43   | 6.6  | 0.17  |
| Pput_4692 | 148549894 | dehydratase                                                                               | 2  | 8   | 4  | 183  | 27.2 | 2.67  |
| Pput_4694 | 148549896 | Zinc finger-domain-containing protein                                                     | 1  | 2   | 2  | 83   | 5.3  | 0.15  |
| Pput_4697 | 148549899 | bifunctional phosphoribosylaminoimidazolecarboxamide formyltransferase/IMP cyclohydrolase | 8  | 44  | 19 | 1629 | 36.6 | 4.84  |
| Pput_4698 | 148549900 | phosphoribosylamine-glycine ligase                                                        | 1  | 9   | 9  | 342  | 25.8 | 1.02  |
| Pput_4703 | 148549905 | hypothetical protein Pput_4703                                                            | 1  | 1   | 1  | 28   | 4    | 0.15  |
| Pput_4704 | 148549906 | precorrin-3B C17-methyltransferase                                                        | 1  | 1   | 1  | 27   | 3.8  | 0.06  |
| Pput_4711 | 148549913 | hypothetical protein Pput_4711                                                            | 1  | 1   | 1  | 41   | 6.9  | 0.24  |
| Pput_4714 | 148549916 | hypothetical protein Pput_4714                                                            | 2  | 2   | 1  | 105  | 8.1  | 0.44  |
| Pput_4716 | 148549918 | TonB-dependent copper receptor                                                            | 1  | 7   | 7  | 194  | 12.8 | 0.4   |
| Pput_4724 | 148549926 | GCN5-related N-acetyltransferase                                                          | 1  | 1   | 1  | 42   | 4.1  | 0.2   |
| Pput_4725 | 148549927 | hypothetical protein Pput_4725                                                            | 1  | 2   | 1  | 31   | 10.9 | 0.34  |
| Pput_4726 | 148549928 | chaperone DnaJ domain-containing protein                                                  | 4  | 24  | 14 | 584  | 39.5 | 4.96  |
| Pput_4732 | 148549934 | alpha/beta hydrolase fold                                                                 | 1  | 1   | 1  | 26   | 2.7  | 0.12  |
| Pput_4733 | 148549935 | DNA-binding transcriptional activator OsmE                                                | 5  | 8   | 4  | 267  | 34.5 | 3.27  |
| Pput_4734 | 148549936 | Ferritin, Dps family protein                                                              | 4  | 21  | 10 | 576  | 50   | 8.14  |
| Pput_4738 | 148549940 | N-acylglucosamine 2-epimerase                                                             | 1  | 2   | 2  | 86   | 5.2  | 0.19  |
| Pput_4740 | 148549942 | short-chain dehydrogenase/reductase SDR                                                   | 2  | 8   | 7  | 345  | 38.2 | 1.6   |
| Pput_4741 | 148549943 | ABC transporter related                                                                   | 2  | 7   | 5  | 349  | 29   | 1.1   |
| Pput_4742 | 148549944 | ABC transporter related                                                                   | 1  | 4   | 4  | 140  | 15.8 | 0.55  |
| Pput_4743 | 148549945 | inner-membrane translocator                                                               | 1  | 1   | 1  | 25   | 3.7  | 0.08  |
| Pput_4745 | 148549947 | extracellular ligand-binding receptor                                                     | 4  | 32  | 21 | 1162 | 61.9 | 10.26 |
| Pput_4747 | 148549949 | NAD synthetase                                                                            | 3  | 22  | 9  | 880  | 35.6 | 4.37  |
| Pput_4748 | 148549950 | azurin                                                                                    | 7  | 35  | 7  | 840  | 52.7 | 17.18 |
| Pput_4749 | 148549951 | hypothetical protein Pput_4749                                                            | 3  | 3   | 1  | 207  | 6.2  | 0.54  |
| Pput_4752 | 148549954 | hypothetical protein Pput_4752                                                            | 1  | 1   | 1  | 27   | 2.1  | 0.09  |
| Pput_4753 | 148549955 | ABC transporter related                                                                   | 1  | 1   | 1  | 28   | 1.5  | 0.06  |
| Pput_4755 | 148549957 | 50S ribosomal protein L9                                                                  | 4  | 57  | 15 | 1274 | 51.4 | 76.11 |
| Pput_4757 | 148549959 | 30S ribosomal protein S18                                                                 | 4  | 30  | 10 | 599  | 67.1 | 71.62 |
| Pput_4758 | 148549960 | 30S ribosomal protein S6                                                                  | 4  | 40  | 14 | 1666 | 56.7 | 96.71 |
| Pput_4759 | 148549961 | RNA methyltransferase                                                                     | 1  | 2   | 2  | 46   | 8.9  | 0.3   |
| Pput_4760 | 148549962 | ribonuclease R                                                                            | 7  | 31  | 21 | 794  | 22.9 | 1.44  |

|           |           |                                                                                                     |    |     |    |      |      |       |
|-----------|-----------|-----------------------------------------------------------------------------------------------------|----|-----|----|------|------|-------|
| Pput_4761 | 148549963 | extracellular solute-binding protein                                                                | 2  | 24  | 10 | 852  | 27.3 | 3.84  |
| Pput_4765 | 148549967 | adenylosuccinate synthetase                                                                         | 7  | 41  | 18 | 1280 | 41.4 | 5.4   |
| Pput_4766 | 148549968 | ATP phosphoribosyltransferase regulatory subunit                                                    | 2  | 6   | 6  | 196  | 16.2 | 0.61  |
| Pput_4767 | 148549969 | HflC protein                                                                                        | 2  | 28  | 17 | 589  | 51.6 | 7.68  |
| Pput_4768 | 148549970 | HflK protein                                                                                        | 1  | 9   | 9  | 290  | 33.6 | 1.11  |
| Pput_4770 | 148549972 | RNA-binding protein Hfq                                                                             | 3  | 10  | 5  | 241  | 53.5 | 5.52  |
| Pput_4771 | 148549973 | RNA delta(2)-isopentenylpyrophosphate transferase                                                   | 1  | 1   | 1  | 53   | 3.7  | 0.11  |
| Pput_4774 | 148549976 | hypothetical protein Pput_4774                                                                      | 3  | 9   | 6  | 464  | 47.1 | 3.14  |
| Pput_4775 | 148549977 | carbohydrate kinase, YjeF related protein                                                           | 2  | 2   | 2  | 67   | 3.6  | 0.24  |
| Pput_4778 | 148549980 | oligoribonuclease                                                                                   | 2  | 15  | 11 | 308  | 43.3 | 6.98  |
| Pput_4779 | 148549981 | ribosome-associated GTPase                                                                          | 1  | 1   | 1  | 55   | 5.5  | 0.1   |
| Pput_4783 | 148549985 | rhodanese domain-containing protein                                                                 | 1  | 5   | 4  | 222  | 20.8 | 0.83  |
| Pput_4784 | 148549986 | phosphatidylserine decarboxylase                                                                    | 1  | 4   | 3  | 128  | 12.2 | 0.57  |
| Pput_4785 | 148549987 | phosphoserine phosphatase SerB                                                                      | 1  | 10  | 9  | 293  | 27.2 | 1.1   |
| Pput_4786 | 148549988 | hypothetical protein Pput_4786                                                                      | 3  | 4   | 2  | 137  | 4.1  | 0.28  |
| Pput_4787 | 148549989 | hypothetical protein Pput_4787                                                                      | 2  | 3   | 2  | 205  | 13.5 | 0.43  |
| Pput_4788 | 148549990 | DNA topoisomerase IV subunit A                                                                      | 1  | 4   | 4  | 162  | 5.9  | 0.19  |
| Pput_4791 | 148549993 | DNA topoisomerase IV subunit B                                                                      | 2  | 4   | 3  | 142  | 3.8  | 0.22  |
| Pput_4793 | 148549995 | calcineurin phosphoesterase C-terminal domain-containing protein                                    | 1  | 1   | 1  | 46   | 6    | 0.13  |
| Pput_4795 | 148549997 | NUDIX hydrolase                                                                                     | 2  | 6   | 5  | 197  | 33.2 | 1.29  |
| Pput_4796 | 148549998 | hypothetical protein Pput_4796                                                                      | 1  | 1   | 1  | 66   | 7.3  | 0.14  |
| Pput_4798 | 148550000 | thiamine biosynthesis protein ThiC                                                                  | 50 | 58  | 4  | 3082 | 4.5  | 2.8   |
| Pput_4801 | 148550003 | LysR family transcriptional regulator                                                               | 1  | 1   | 1  | 42   | 3    | 0.11  |
| Pput_4803 | 148550005 | FAD dependent oxidoreductase                                                                        | 2  | 4   | 3  | 141  | 9    | 0.38  |
| Pput_4806 | 148550008 | bifunctional heptose 7-phosphate kinase/heptose 1-phosphate adenylyltransferase                     | 2  | 13  | 9  | 270  | 13.3 | 1.19  |
| Pput_4807 | 148550009 | lipid A ABC exporter, fused ATPase and inner membrane subunits MsbA                                 | 3  | 3   | 2  | 91   | 1.8  | 0.18  |
| Pput_4809 | 148550011 | hypothetical protein Pput_4809                                                                      | 2  | 10  | 6  | 352  | 31.3 | 2.28  |
| Pput_4811 | 148550013 | hypothetical protein Pput_4811                                                                      | 1  | 1   | 1  | 44   | 5.8  | 0.13  |
| Pput_4812 | 148550014 | hypothetical protein Pput_4812                                                                      | 2  | 6   | 4  | 167  | 6.9  | 0.68  |
| Pput_4813 | 148550015 | LmbE family protein                                                                                 | 1  | 1   | 1  | 95   | 3.6  | 0.07  |
| Pput_4814 | 148550016 | Mig-14 family protein                                                                               | 1  | 1   | 1  | 54   | 3    | 0.11  |
| Pput_4816 | 148550018 | carbamoyltransferase                                                                                | 2  | 13  | 10 | 408  | 20.9 | 0.91  |
| Pput_4817 | 148550019 | hypothetical protein Pput_4817                                                                      | 1  | 2   | 2  | 74   | 9.4  | 0.25  |
| Pput_4818 | 148550020 | sodium/proline symporter                                                                            | 1  | 1   | 1  | 41   | 2.6  | 0.07  |
| Pput_4819 | 148550021 | trifunctional transcriptional regulator/proline dehydrogenase/pyrroline-5-carboxylate dehydrogenase | 1  | 1   | 1  | 27   | 0.6  | 0.03  |
| Pput_4825 | 148550027 | ATP-dependent RNA helicase DbpA                                                                     | 1  | 3   | 3  | 84   | 7.3  | 0.22  |
| Pput_4826 | 148550028 | hypothetical protein Pput_4826                                                                      | 1  | 1   | 1  | 24   | 5.9  | 0.09  |
| Pput_4829 | 148550031 | GCN5-related N-acetyltransferase                                                                    | 1  | 1   | 1  | 81   | 10   | 0.23  |
| Pput_4831 | 148550033 | hypothetical protein Pput_4831                                                                      | 1  | 1   | 1  | 34   | 7.8  | 0.18  |
| Pput_4833 | 148550035 | fructose-1,6-bisphosphate aldolase                                                                  | 16 | 49  | 15 | 1560 | 38.4 | 6.89  |
| Pput_4834 | 148550036 | hypothetical protein Pput_4834                                                                      | 2  | 3   | 2  | 91   | 8.3  | 1.11  |
| Pput_4836 | 148550038 | phosphoglycerate kinase                                                                             | 13 | 34  | 11 | 1398 | 32.6 | 4.02  |
| Pput_4837 | 148550039 | D-erythrose-4-phosphate dehydrogenase                                                               | 1  | 1   | 1  | 56   | 2.5  | 0.1   |
| Pput_4838 | 148550040 | transketolase                                                                                       | 11 | 38  | 21 | 1388 | 26.8 | 2.59  |
| Pput_4840 | 148550042 | S-adenosylmethionine synthetase                                                                     | 6  | 10  | 6  | 430  | 16.9 | 0.97  |
| Pput_4845 | 148550047 | hypothetical protein Pput_4845                                                                      | 4  | 5   | 1  | 382  | 8.6  | 1.12  |
| Pput_4848 | 148550050 | thioesterase superfamily protein                                                                    | 1  | 5   | 5  | 167  | 30.1 | 2.18  |
| Pput_4849 | 148550051 | S-adenosyl-L-homocysteine hydrolase                                                                 | 13 | 52  | 20 | 2002 | 38.2 | 5.54  |
| Pput_4850 | 148550052 | 5,10-methylenetetrahydrofolate reductase                                                            | 1  | 4   | 2  | 149  | 13.9 | 0.57  |
| Pput_4853 | 148550055 | DEAD/DEAH box helicase domain-containing protein                                                    | 3  | 4   | 2  | 197  | 3.3  | 0.21  |
| Pput_4854 | 148550056 | hypothetical protein Pput_4854                                                                      | 3  | 7   | 4  | 206  | 19.3 | 1.58  |
| Pput_4856 | 148550058 | amine oxidase                                                                                       | 1  | 1   | 1  | 36   | 1.3  | 0.06  |
| Pput_4859 | 148550061 | 16S ribosomal RNA methyltransferase RsmE                                                            | 1  | 1   | 1  | 31   | 3.8  | 0.15  |
| Pput_4861 | 148550063 | CheW domain-containing protein                                                                      | 2  | 6   | 4  | 287  | 25.5 | 1.66  |
| Pput_4864 | 148550066 | putative CheW protein                                                                               | 1  | 3   | 3  | 80   | 16.3 | 0.67  |
| Pput_4867 | 148550069 | glutathione synthetase                                                                              | 2  | 10  | 6  | 413  | 21.1 | 1.25  |
| Pput_4870 | 148550072 | Holliday junction resolvase-like protein                                                            | 1  | 2   | 2  | 60   | 14.2 | 0.56  |
| Pput_4871 | 148550073 | bifunctional pyrimidine regulatory protein PyrR uracil phosphoribosyltransferase                    | 3  | 7   | 3  | 233  | 13.4 | 1.68  |
| Pput_4872 | 148550074 | aspartate carbamoyltransferase catalytic subunit                                                    | 5  | 22  | 13 | 809  | 39.8 | 4.44  |
| Pput_4873 | 148550075 | dihydroorotase                                                                                      | 4  | 12  | 6  | 377  | 16.1 | 1.16  |
| Pput_4874 | 229328216 | ATP-dependent protease peptidase subunit                                                            | 6  | 34  | 10 | 1379 | 33.5 | 16.89 |
| Pput_4875 | 148550077 | ATP-dependent protease ATP-binding subunit HslU                                                     | 25 | 103 | 27 | 3051 | 43.2 | 12.26 |
| Pput_4880 | 148550082 | TetR family transcriptional regulator                                                               | 1  | 1   | 1  | 91   | 4.4  | 0.16  |
| Pput_4881 | 148550083 | poly(hydroxyalkanoate) granule-associated protein                                                   | 19 | 68  | 16 | 2499 | 40.6 | 16.85 |
| Pput_4885 | 148550087 | ubiquinone/menaquinone biosynthesis methyltransferase                                               | 1  | 10  | 9  | 314  | 44.1 | 2.5   |
| Pput_4887 | 148550089 | 2-polyprenylphenol 6-hydroxylase                                                                    | 1  | 2   | 2  | 90   | 5.2  | 0.12  |
| Pput_4888 | 148550090 | phosphoribosyl-AMP cyclohydrolase                                                                   | 2  | 6   | 4  | 169  | 29.2 | 2.07  |
| Pput_4889 | 148550091 | phosphoribosyl-ATP pyrophosphatase                                                                  | 1  | 1   | 1  | 36   | 7.2  | 0.32  |
| Pput_4890 | 148550092 | twin arginine translocase protein A                                                                 | 2  | 2   | 1  | 107  | 12.2 | 0.8   |
| Pput_4894 | 148550096 | methyl-accepting chemotaxis sensory transducer                                                      | 1  | 4   | 4  | 169  | 9.6  | 0.23  |
| Pput_4898 | 148550100 | extracellular solute-binding protein                                                                | 2  | 23  | 11 | 727  | 39.5 | 5.91  |
| Pput_4899 | 148550101 | glucosyltransferase MdoH                                                                            | 2  | 2   | 2  | 95   | 1.4  | 0.08  |
| Pput_4900 | 148550102 | glucan biosynthesis protein G                                                                       | 2  | 21  | 12 | 661  | 23.5 | 1.55  |
| Pput_4901 | 148550103 | D-tyrosyl-tRNA(Tyr) deacylase                                                                       | 1  | 1   | 1  | 63   | 6.9  | 0.25  |
| Pput_4902 | 148550104 | proline iminopeptidase                                                                              | 2  | 9   | 7  | 223  | 22.3 | 1.13  |
| Pput_4903 | 148550105 | N-formylglutamate amidohydrolase                                                                    | 1  | 1   | 1  | 50   | 4.9  | 0.13  |
| Pput_4906 | 148550108 | histidine ammonia-lyase                                                                             | 1  | 2   | 2  | 44   | 4.9  | 0.14  |
| Pput_4907 | 148550109 | urocanate hydratase                                                                                 | 1  | 6   | 5  | 205  | 12   | 0.43  |
| Pput_4908 | 148550110 | hypothetical protein Pput_4908                                                                      | 3  | 5   | 2  | 241  | 12.1 | 0.96  |
| Pput_4909 | 148550111 | GntR family transcriptional regulator                                                               | 1  | 1   | 1  | 49   | 6.5  | 0.14  |
| Pput_4911 | 148550113 | Lipocalin family protein                                                                            | 1  | 4   | 4  | 63   | 17.4 | 0.88  |
| Pput_4913 | 148550115 | hypothetical protein Pput_4913                                                                      | 2  | 3   | 3  | 133  | 11.1 | 0.51  |
| Pput_4914 | 148550116 | fructose-1,6-bisphosphatase                                                                         | 8  | 29  | 15 | 888  | 41.7 | 6.01  |
| Pput_4915 | 148550117 | glycogen/starch/alpha-glucan phosphorylase                                                          | 6  | 18  | 12 | 643  | 14.5 | 0.84  |
| Pput_4917 | 148550119 | PhoPQ-activated pathogenicity-related protein-like protein                                          | 1  | 1   | 1  | 31   | 1.9  | 0.07  |
| Pput_4918 | 148550120 | GTP-binding protein TypA                                                                            | 6  | 49  | 22 | 1216 | 29.4 | 5.19  |
| Pput_4919 | 148550121 | thiamine biosynthesis protein ThiI                                                                  | 1  | 2   | 2  | 57   | 3.3  | 0.14  |
| Pput_4920 | 148550122 | glutamine synthetase, type I                                                                        | 36 | 147 | 26 | 3707 | 42.3 | 17.22 |
| Pput_4922 | 148550124 | signal transduction histidine kinase, nitrogen specific, NtrB                                       | 1  | 1   | 1  | 48   | 4.2  | 0.09  |

|           |           |                                                              |    |    |    |      |      |      |
|-----------|-----------|--------------------------------------------------------------|----|----|----|------|------|------|
| Pput_4923 | 148550125 | nitrogen metabolism transcriptional regulator NtrC           | 1  | 5  | 5  | 175  | 13.4 | 0.4  |
| Pput_4925 | 148550127 | RNA methyltransferase                                        | 1  | 1  | 1  | 43   | 9.8  | 0.23 |
| Pput_4926 | 148550128 | preprotein translocase subunit SecB                          | 3  | 20 | 7  | 484  | 45.3 | 7.05 |
| Pput_4928 | 148550130 | rhodanese domain-containing protein                          | 3  | 7  | 4  | 183  | 27   | 2.39 |
| Pput_4929 | 148550131 | phosphoglyceromutase                                         | 6  | 16 | 8  | 566  | 23.7 | 1.29 |
| Pput_4931 | 148550133 | carboxyl-terminal protease                                   | 3  | 12 | 8  | 338  | 21.9 | 1.2  |
| Pput_4935 | 148550137 | transcriptional regulator BetI                               | 2  | 10 | 8  | 307  | 35.8 | 2.33 |
| Pput_4936 | 148550138 | betaine aldehyde dehydrogenase                               | 1  | 1  | 1  | 35   | 2    | 0.07 |
| Pput_4937 | 148550139 | choline dehydrogenase                                        | 2  | 3  | 2  | 106  | 4.2  | 0.18 |
| Pput_4941 | 148550143 | hypothetical protein Pput_4941                               | 1  | 1  | 1  | 34   | 2.1  | 0.07 |
| Pput_4942 | 148550144 | thioredoxin                                                  | 2  | 5  | 4  | 169  | 25   | 1.6  |
| Pput_4943 | 148550145 | cobyrinic acid a,c-diamide synthase                          | 1  | 1  | 1  | 60   | 4.7  | 0.13 |
| Pput_4947 | 148550149 | uroporphyrinogen decarboxylase                               | 1  | 2  | 2  | 58   | 7.1  | 0.2  |
| Pput_4948 | 148550150 | glutamate synthase subunit beta                              | 3  | 15 | 11 | 491  | 22.7 | 1.43 |
| Pput_4949 | 148550151 | glutamate synthase subunit alpha                             | 15 | 34 | 14 | 1147 | 4.1  | 0.77 |
| Pput_4950 | 148550152 | sporulation domain-containing protein                        | 2  | 4  | 3  | 173  | 6.4  | 0.28 |
| Pput_4951 | 148550153 | 3-dehydroquinate synthase                                    | 2  | 8  | 5  | 360  | 24.4 | 0.92 |
| Pput_4952 | 148550154 | shikimate kinase                                             | 3  | 9  | 4  | 279  | 25   | 2.39 |
| Pput_4957 | 148550159 | 1A family penicillin-binding protein                         | 1  | 1  | 1  | 50   | 2.1  | 0.04 |
| Pput_4958 | 148550160 | malate dehydrogenase                                         | 17 | 53 | 19 | 1835 | 52.9 | 7.93 |
| Pput_4960 | 148550162 | ribosomal protein L31                                        | 2  | 5  | 2  | 143  | 11   | 2.33 |
| Pput_4961 | 148550163 | primosome assembly protein PriA                              | 1  | 1  | 1  | 26   | 1.5  | 0.04 |
| Pput_4962 | 148550164 | arginyl-tRNA synthetase                                      | 7  | 29 | 17 | 1037 | 28.7 | 2.15 |
| Pput_4967 | 148550169 | alanine racemase domain-containing protein                   | 1  | 5  | 5  | 249  | 24.1 | 1.07 |
| Pput_4968 | 148550170 | pyrroline-5-carboxylate reductase                            | 2  | 11 | 7  | 526  | 35.7 | 2.37 |
| Pput_4970 | 148550172 | homoserine O-acetyltransferase                               | 1  | 1  | 1  | 45   | 2.6  | 0.09 |
| Pput_4971 | 148550173 | methionine biosynthesis protein MetW                         | 1  | 2  | 2  | 48   | 12.6 | 0.35 |
| Pput_4972 | 148550174 | hypothetical protein Pput_4972                               | 1  | 2  | 2  | 60   | 17.4 | 0.56 |
| Pput_4973 | 148550175 | putative deoxyribonucleotide triphosphate pyrophosphatase    | 3  | 7  | 5  | 309  | 23.2 | 1.5  |
| Pput_4977 | 148550179 | thiazole synthase                                            | 2  | 5  | 4  | 144  | 16.7 | 0.76 |
| Pput_4982 | 148550184 | hypothetical protein Pput_4982                               | 1  | 2  | 2  | 47   | 6.2  | 0.21 |
| Pput_4983 | 148550185 | cell division ATP-binding protein FtsE                       | 1  | 3  | 3  | 84   | 21.1 | 0.54 |
| Pput_4984 | 148550186 | signal recognition particle-docking protein FtsY             | 2  | 13 | 12 | 288  | 18.9 | 1.21 |
| Pput_4985 | 148550187 | peptidase M16 domain-containing protein                      | 1  | 2  | 2  | 55   | 4.4  | 0.15 |
| Pput_4986 | 148550188 | peptidase M16 domain-containing protein                      | 1  | 3  | 3  | 74   | 7.7  | 0.23 |
| Pput_4988 | 148550190 | peptidase M16 domain-containing protein                      | 1  | 1  | 1  | 27   | 2.1  | 0.08 |
| Pput_4992 | 148550194 | rhodanese domain-containing protein                          | 2  | 12 | 8  | 412  | 32   | 2.02 |
| Pput_4997 | 148550199 | phosphopantetheine adenyllyltransferase                      | 3  | 14 | 7  | 368  | 42.8 | 5.45 |
| Pput_4999 | 148550201 | formamidopyrimidine-DNA glycosylase                          | 1  | 1  | 1  | 59   | 5.2  | 0.12 |
| Pput_5001 | 148550203 | hypothetical protein Pput_5001                               | 1  | 1  | 1  | 30   | 3    | 0.08 |
| Pput_5002 | 148550204 | dihydroxy-acid dehydratase                                   | 13 | 41 | 15 | 2024 | 30.2 | 2.96 |
| Pput_5003 | 148550205 | hypothetical protein Pput_5003                               | 1  | 1  | 1  | 30   | 3.4  | 0.1  |
| Pput_5007 | 148550209 | GTP-binding protein, HSR1-related                            | 2  | 3  | 3  | 106  | 4.4  | 0.22 |
| Pput_5011 | 148550213 | LysR family transcriptional regulator                        | 1  | 1  | 1  | 47   | 3.5  | 0.12 |
| Pput_5012 | 148550214 | heavy metal translocating P-type ATPase                      | 1  | 1  | 1  | 34   | 0.8  | 0.05 |
| Pput_5013 | 148550215 | MerR family transcriptional regulator                        | 1  | 1  | 1  | 69   | 6.8  | 0.23 |
| Pput_5017 | 148550219 | hypothetical protein Pput_5017                               | 1  | 1  | 1  | 28   | 3.6  | 0.12 |
| Pput_5024 | 148550226 | pyruvate carboxyltransferase                                 | 1  | 2  | 2  | 76   | 8    | 0.24 |
| Pput_5025 | 148550227 | L-carnitine dehydratase/bile acid-inducible protein F        | 1  | 1  | 1  | 26   | 3.5  | 0.09 |
| Pput_5026 | 148550228 | LysR family transcriptional regulator                        | 1  | 2  | 2  | 105  | 7.9  | 0.24 |
| Pput_5030 | 148550232 | DNA-directed DNA polymerase                                  | 2  | 2  | 2  | 54   | 1.9  | 0.16 |
| Pput_5037 | 148550237 | hypothetical protein Pput_5037                               | 2  | 5  | 4  | 133  | 37.2 | 2.02 |
| Pput_5043 | 148550243 | thymidylate synthase                                         | 1  | 5  | 5  | 208  | 22   | 0.75 |
| Pput_5046 | 148550246 | phage integrase family protein                               | 1  | 1  | 1  | 30   | 1.3  | 0.04 |
| Pput_5051 | 148550251 | hypothetical protein Pput_5051                               | 1  | 3  | 3  | 128  | 20.2 | 0.49 |
| Pput_5052 | 148550252 | phosphoenolpyruvate-protein phosphotransferase PtsP          | 2  | 13 | 12 | 307  | 14.6 | 0.72 |
| Pput_5053 | 148550253 | dinucleoside polyphosphate hydrolase                         | 2  | 2  | 1  | 60   | 6.9  | 0.4  |
| Pput_5056 | 148550256 | threonine dehydratase                                        | 3  | 4  | 3  | 98   | 4.6  | 0.28 |
| Pput_5057 | 148550257 | ribose-5-phosphate isomerase A                               | 1  | 7  | 3  | 268  | 19.6 | 1.46 |
| Pput_5059 | 148550259 | SdiA-regulated domain-containing protein                     | 2  | 9  | 6  | 276  | 19   | 1.12 |
| Pput_5060 | 148550260 | fumarylacetoacetate (FAA) hydrolase                          | 2  | 2  | 1  | 90   | 5    | 0.32 |
| Pput_5061 | 148550261 | FAD linked oxidase domain-containing protein                 | 1  | 1  | 1  | 43   | 1.7  | 0.07 |
| Pput_5062 | 148550262 | D-3-phosphoglycerate dehydrogenase                           | 13 | 40 | 15 | 1690 | 35.9 | 4.8  |
| Pput_5063 | 148550263 | hypothetical protein Pput_5063                               | 3  | 4  | 2  | 109  | 17.7 | 0.98 |
| Pput_5067 | 148550267 | hypothetical protein Pput_5067                               | 1  | 3  | 2  | 164  | 12.8 | 0.48 |
| Pput_5071 | 148550271 | peptidase S45, penicillin amidase                            | 1  | 1  | 1  | 26   | 1    | 0.04 |
| Pput_5072 | 148550272 | NLPA lipoprotein                                             | 1  | 1  | 1  | 27   | 2.9  | 0.11 |
| Pput_5075 | 148550275 | sulfate ABC transporter, ATPase subunit                      | 2  | 3  | 3  | 152  | 13.4 | 0.31 |
| Pput_5078 | 148550278 | sulfate ABC transporter, periplasmic sulfate-binding protein | 1  | 4  | 4  | 141  | 16.1 | 0.48 |
| Pput_5082 | 148550282 | RND family efflux transporter MFP subunit                    | 1  | 2  | 2  | 64   | 5.5  | 0.21 |
| Pput_5086 | 148550286 | spermidine/putrescine ABC transporter ATPase subunit         | 1  | 1  | 1  | 43   | 2.9  | 0.09 |
| Pput_5087 | 148550287 | extracellular solute-binding protein                         | 1  | 5  | 5  | 99   | 18.1 | 0.57 |
| Pput_5088 | 148550288 | extracellular solute-binding protein                         | 6  | 28 | 19 | 939  | 47.7 | 6.69 |
| Pput_5089 | 148550289 | putative aminotransferase                                    | 1  | 1  | 1  | 24   | 2    | 0.07 |
| Pput_5090 | 148550290 | glutamate--putrescine ligase                                 | 2  | 13 | 10 | 356  | 21   | 1.09 |
| Pput_5091 | 148550291 | glutamate--putrescine ligase                                 | 2  | 4  | 4  | 134  | 8.3  | 0.3  |
| Pput_5092 | 148550292 | N-acetylglutamate synthase                                   | 1  | 5  | 5  | 83   | 16.7 | 0.46 |
| Pput_5094 | 148550294 | adenylate cyclase                                            | 2  | 6  | 5  | 193  | 7    | 0.46 |
| Pput_5099 | 148550299 | glycine dehydrogenase                                        | 1  | 2  | 1  | 85   | 1.4  | 0.07 |
| Pput_5100 | 148550300 | glycine cleavage system protein H                            | 3  | 5  | 2  | 205  | 22   | 1.63 |
| Pput_5101 | 148550301 | glycine cleavage system aminomethyltransferase T             | 1  | 1  | 1  | 31   | 2.2  | 0.1  |
| Pput_5103 | 148550303 | extracellular solute-binding protein                         | 1  | 4  | 4  | 54   | 11.4 | 0.47 |
| Pput_5104 | 148550304 | 2-octaprenyl-3-methyl-6-methoxy-1,4-benzoquinol hydroxylase  | 1  | 1  | 1  | 70   | 2.5  | 0.08 |
| Pput_5105 | 148550305 | hypothetical protein Pput_5105                               | 1  | 2  | 2  | 82   | 14.4 | 0.47 |
| Pput_5107 | 148550307 | peptidase M24                                                | 4  | 9  | 4  | 333  | 10.4 | 0.76 |
| Pput_5109 | 148550309 | hypothetical protein Pput_5109                               | 1  | 1  | 1  | 27   | 16.7 | 0.48 |
| Pput_5111 | 148550311 | 5-formyltetrahydrofolate cyclo-ligase                        | 1  | 2  | 2  | 49   | 8.4  | 0.35 |
| Pput_5114 | 148550314 | secretion protein HlyD family protein                        | 1  | 1  | 1  | 73   | 3.4  | 0.11 |
| Pput_5119 | 148550319 | alcohol dehydrogenase                                        | 1  | 2  | 2  | 55   | 7.1  | 0.24 |

|           |           |                                                                                      |    |     |    |      |      |       |
|-----------|-----------|--------------------------------------------------------------------------------------|----|-----|----|------|------|-------|
| Pput_5122 | 148550322 | UbiD family decarboxylase                                                            | 1  | 5   | 5  | 254  | 14.1 | 0.39  |
| Pput_5123 | 148550323 | transcription termination factor Rho                                                 | 4  | 36  | 21 | 1041 | 44.2 | 5.67  |
| Pput_5124 | 148550324 | thioredoxin                                                                          | 2  | 12  | 6  | 513  | 33.9 | 9.75  |
| Pput_5125 | 148550325 | Ppx/GppA phosphatase                                                                 | 4  | 13  | 8  | 365  | 17   | 1.02  |
| Pput_5126 | 148550326 | polyphosphate kinase                                                                 | 3  | 9   | 7  | 325  | 5.6  | 0.42  |
| Pput_5129 | 148550329 | isoprenoid biosynthesis protein with amidotransferase-like domain                    | 2  | 4   | 4  | 138  | 18.7 | 0.73  |
| Pput_5137 | 148550337 | diaminopimelate epimerase                                                            | 1  | 2   | 2  | 80   | 9.4  | 0.26  |
| Pput_5138 | 148550338 | hypothetical protein Pput_5138                                                       | 3  | 4   | 2  | 302  | 8.1  | 0.59  |
| Pput_5140 | 148550340 | HAD family hydrolase                                                                 | 2  | 6   | 4  | 229  | 18.2 | 0.83  |
| Pput_5143 | 148550343 | nitrogen regulatory protein P-II                                                     | 4  | 14  | 5  | 409  | 52.7 | 7.26  |
| Pput_5145 | 148550345 | hypothetical protein Pput_5145                                                       | 1  | 1   | 1  | 30   | 6.8  | 0.31  |
| Pput_5152 | 148550352 | ATPase domain-containing protein                                                     | 4  | 4   | 2  | 120  | 0.5  | 0.08  |
| Pput_5153 | 148550353 | isochorismatase hydrolase                                                            | 2  | 3   | 2  | 175  | 12   | 0.53  |
| Pput_5155 | 148550355 | AraC family transcriptional regulator                                                | 1  | 1   | 1  | 63   | 4    | 0.1   |
| Pput_5162 | 148550362 | amidohydrolase 3                                                                     | 2  | 6   | 5  | 156  | 6.5  | 0.32  |
| Pput_5168 | 148550368 | aldehyde dehydrogenase                                                               | 1  | 4   | 4  | 135  | 10.3 | 0.31  |
| Pput_5169 | 148550369 | LysR family transcriptional regulator                                                | 1  | 1   | 1  | 64   | 3.4  | 0.11  |
| Pput_5173 | 148550373 | diguanylate cyclase/phosphodiesterase                                                | 2  | 2   | 1  | 102  | 2.3  | 0.12  |
| Pput_5175 | 148550375 | xanthine phosphoribosyltransferase                                                   | 3  | 13  | 7  | 422  | 28.4 | 3.81  |
| Pput_5179 | 148550379 | alanine racemase                                                                     | 1  | 1   | 1  | 48   | 2.8  | 0.1   |
| Pput_5180 | 148550380 | D-amino acid dehydrogenase small subunit                                             | 1  | 2   | 2  | 118  | 6.7  | 0.16  |
| Pput_5181 | 148550381 | AsnC family transcriptional regulator                                                | 2  | 5   | 4  | 147  | 17.3 | 1.29  |
| Pput_5188 | 148550388 | aldehyde dehydrogenase                                                               | 3  | 19  | 10 | 629  | 19.4 | 1.62  |
| Pput_5191 | 148550391 | 50S ribosomal protein L33                                                            | 2  | 6   | 3  | 278  | 52.9 | 9.51  |
| Pput_5192 | 148550392 | 50S ribosomal protein L28                                                            | 7  | 60  | 7  | 1556 | 56.4 | 22.89 |
| Pput_5193 | 148550393 | extracellular solute-binding protein                                                 | 1  | 11  | 10 | 276  | 18   | 0.99  |
| Pput_5195 | 148550395 | bifunctional phosphopantothenoylecysteine decarboxylase/phosphopantothenate synthase | 1  | 4   | 4  | 109  | 11.8 | 0.37  |
| Pput_5196 | 148550396 | deoxyuridine 5~-triphosphate nucleotidohydrolase                                     | 1  | 4   | 3  | 179  | 29.1 | 1.39  |
| Pput_5197 | 148550397 | phosphomannomutase                                                                   | 1  | 2   | 2  | 88   | 5.4  | 0.15  |
| Pput_5198 | 148550398 | acetylglutamate kinase                                                               | 2  | 19  | 12 | 645  | 59.1 | 6.58  |
| Pput_5199 | 148550399 | orotate phosphoribosyltransferase                                                    | 2  | 9   | 6  | 263  | 26.8 | 2.07  |
| Pput_5200 | 148550400 | exodeoxyribonuclease III Xth                                                         | 1  | 4   | 3  | 180  | 17   | 0.61  |
| Pput_5202 | 148550402 | ribonuclease PH                                                                      | 2  | 4   | 4  | 153  | 21.3 | 0.66  |
| Pput_5203 | 148550403 | hypothetical protein Pput_5203                                                       | 2  | 11  | 9  | 375  | 35.5 | 1.98  |
| Pput_5204 | 148550404 | guanylate kinase                                                                     | 2  | 4   | 2  | 131  | 7.3  | 0.52  |
| Pput_5209 | 148550409 | LysR family transcriptional regulator                                                | 2  | 2   | 2  | 83   | 2.9  | 0.2   |
| Pput_5210 | 148550410 | DNA-directed RNA polymerase subunit omega                                            | 2  | 3   | 2  | 140  | 27.6 | 1.41  |
| Pput_5211 | 148550411 | (p)ppGpp synthetase I, SpoT/RelA                                                     | 1  | 19  | 18 | 464  | 29.3 | 1.39  |
| Pput_5212 | 148550412 | putative endoribonuclease L-PSP                                                      | 4  | 23  | 7  | 943  | 65.9 | 19.42 |
| Pput_5213 | 148550413 | hypothetical protein Pput_5213                                                       | 1  | 1   | 1  | 60   | 6.2  | 0.14  |
| Pput_5214 | 148550414 | NAD-dependent epimerase/dehydratase                                                  | 1  | 1   | 1  | 56   | 3.9  | 0.12  |
| Pput_5215 | 148550415 | TonB-system energizer ExbB type-1                                                    | 1  | 1   | 1  | 44   | 2.5  | 0.11  |
| Pput_5218 | 148550418 | LysR family transcriptional regulator                                                | 1  | 9   | 7  | 361  | 28.9 | 1.57  |
| Pput_5219 | 148550419 | ATP-dependent DNA helicase RecG                                                      | 1  | 3   | 3  | 90   | 4.8  | 0.15  |
| Pput_5220 | 148550420 | putative signal transduction protein                                                 | 1  | 4   | 4  | 158  | 10.3 | 0.32  |
| Pput_5222 | 148550422 | histone family protein DNA-binding protein                                           | 5  | 33  | 8  | 625  | 37.4 | 42.21 |
| Pput_5223 | 148550423 | FAD-dependent pyridine nucleotide-disulphide oxidoreductase                          | 2  | 3   | 3  | 66   | 4.7  | 0.28  |
| Pput_5225 | 148550425 | chorismate lyase                                                                     | 2  | 2   | 1  | 154  | 5.9  | 0.36  |
| Pput_5229 | 148550429 | PAS/PAC sensor signal transduction histidine kinase                                  | 1  | 1   | 1  | 42   | 3    | 0.08  |
| Pput_5232 | 148550432 | response regulator receiver protein                                                  | 1  | 1   | 1  | 30   | 1.7  | 0.12  |
| Pput_5233 | 148550433 | phosphate uptake regulator, PhoU                                                     | 2  | 11  | 9  | 360  | 34.8 | 2.12  |
| Pput_5234 | 148550434 | phosphate ABC transporter, ATPase subunit                                            | 1  | 7   | 7  | 336  | 27.8 | 1.22  |
| Pput_5237 | 148550437 | phosphate binding protein                                                            | 3  | 16  | 9  | 498  | 22.6 | 2.7   |
| Pput_5240 | 148550440 | aldose 1-epimerase                                                                   | 2  | 9   | 7  | 377  | 35.2 | 1.35  |
| Pput_5241 | 148550441 | hypothetical protein Pput_5241                                                       | 1  | 1   | 1  | 37   | 6.2  | 0.2   |
| Pput_5243 | 148550443 | phosphoribosylaminoimidazole carboxylase ATPase subunit                              | 2  | 6   | 4  | 211  | 9.2  | 0.64  |
| Pput_5244 | 148550444 | phosphoribosylaminoimidazole carboxylase, catalytic subunit                          | 2  | 15  | 5  | 613  | 40.5 | 5.98  |
| Pput_5246 | 148550446 | LysR family transcriptional regulator                                                | 2  | 5   | 5  | 205  | 15.3 | 0.63  |
| Pput_5247 | 148550447 | aspartate ammonia-lyase                                                              | 2  | 11  | 6  | 349  | 17.2 | 0.94  |
| Pput_5249 | 148550449 | histone deacetylase superfamily protein                                              | 1  | 1   | 1  | 64   | 5.2  | 0.1   |
| Pput_5250 | 148550450 | extracellular solute-binding protein                                                 | 1  | 4   | 4  | 151  | 16.6 | 0.42  |
| Pput_5255 | 148550455 | pyruvate carboxylase subunit B                                                       | 41 | 131 | 24 | 3641 | 33.6 | 8.77  |
| Pput_5256 | 148550456 | acetyl-CoA carboxylase subunit A                                                     | 7  | 31  | 17 | 859  | 31   | 3.04  |
| Pput_5258 | 148550458 | RpiR family transcriptional regulator                                                | 2  | 4   | 2  | 120  | 10.1 | 0.38  |
| Pput_5259 | 148550459 | glucose-6-phosphate 1-dehydrogenase                                                  | 2  | 6   | 3  | 119  | 6.5  | 0.44  |
| Pput_5260 | 148550460 | DNA-dependent helicase II                                                            | 1  | 1   | 1  | 58   | 1.6  | 0.05  |
| Pput_5261 | 148550461 | import inner membrane translocase, subunit Tim44                                     | 1  | 2   | 2  | 109  | 9.1  | 0.25  |
| Pput_5262 | 148550462 | hypothetical protein Pput_5262                                                       | 3  | 3   | 1  | 158  | 6.7  | 0.75  |
| Pput_5264 | 148550464 | thioesterase superfamily protein                                                     | 3  | 7   | 4  | 109  | 26.1 | 1.83  |
| Pput_5273 | 148550473 | cyclopropane-fatty-acyl-phospholipid synthase                                        | 3  | 8   | 4  | 271  | 12.2 | 0.7   |
| Pput_5274 | 148550474 | dihydrolipoamide dehydrogenase                                                       | 2  | 3   | 3  | 77   | 6.7  | 0.24  |
| Pput_5278 | 148550478 | short-chain dehydrogenase/reductase SDR                                              | 1  | 2   | 2  | 67   | 9.2  | 0.32  |
| Pput_5282 | 148550482 | dihydrodipicolinate synthetase                                                       | 2  | 3   | 3  | 102  | 7.1  | 0.35  |
| Pput_5288 | 148550488 | regulatory protein, IclR                                                             | 2  | 5   | 4  | 132  | 15.1 | 0.74  |
| Pput_5291 | 148550491 | glucosamine--fructose-6-phosphate aminotransferase                                   | 1  | 4   | 4  | 200  | 8.5  | 0.24  |
| Pput_5293 | 148550493 | UDP-N-acetylglucosamine pyrophosphorylase                                            | 1  | 3   | 3  | 129  | 12.1 | 0.25  |
| Pput_5294 | 148550494 | F0F1 ATP synthase subunit epsilon                                                    | 5  | 17  | 5  | 641  | 37.4 | 4.99  |
| Pput_5295 | 148550495 | F0F1 ATP synthase subunit beta                                                       | 26 | 148 | 27 | 5515 | 81.7 | 33.93 |
| Pput_5296 | 148550496 | F0F1 ATP synthase subunit gamma                                                      | 3  | 26  | 16 | 867  | 47.2 | 6.05  |
| Pput_5297 | 148550497 | F0F1 ATP synthase subunit alpha                                                      | 25 | 181 | 30 | 6226 | 46.1 | 24.21 |
| Pput_5298 | 148550498 | F0F1 ATP synthase subunit delta                                                      | 4  | 9   | 4  | 364  | 19.1 | 1.92  |
| Pput_5299 | 148550499 | F0F1 ATP synthase subunit B                                                          | 11 | 50  | 14 | 2293 | 64.7 | 39.83 |
| Pput_5300 | 148550500 | F0F1 ATP synthase subunit C                                                          | 1  | 3   | 1  | 39   | 12.9 | 2.19  |
| Pput_5303 | 148550503 | parB-like partition protein                                                          | 1  | 6   | 5  | 213  | 23.4 | 0.94  |
| Pput_5304 | 148550504 | cobyrinic acid a,c-diamide synthase                                                  | 1  | 1   | 1  | 68   | 5.3  | 0.13  |
| Pput_5305 | 148550505 | 16S rRNA methyltransferase GidB                                                      | 1  | 2   | 2  | 67   | 13.4 | 0.34  |
| Pput_5308 | 148550508 | tRNA modification GTPase TrmE                                                        | 3  | 4   | 4  | 98   | 3.9  | 0.32  |
| Pput_5309 | 148550509 | putative inner membrane protein translocase component YidC                           | 8  | 18  | 6  | 626  | 14.5 | 1.18  |
| Pput_5311 | 148550511 | ribonuclease P                                                                       | 3  | 3   | 2  | 176  | 14.2 | 0.78  |



E6 sample

| Pput name | Accession # | Protein name                                                          | Total no. of<br>detected<br>gel slices | Total no. of<br>accepted<br>peptides | No. of<br>unique<br>peptides | Sum of<br>macot score | % of<br>sequence<br>coverage | Sum of<br>emPAI |
|-----------|-------------|-----------------------------------------------------------------------|----------------------------------------|--------------------------------------|------------------------------|-----------------------|------------------------------|-----------------|
| Pput_0001 | 148545260   | chromosomal replication initiation protein                            | 2                                      | 2                                    | 3                            | 84                    | 4.4                          | 0.21            |
| Pput_0002 | 148545261   | DNA polymerase III subunit beta                                       | 4                                      | 11                                   | 9                            | 472                   | 23.4                         | 1.41            |
| Pput_0003 | 148545262   | recombination protein F                                               | 1                                      | 1                                    | 1                            | 29                    | 3                            | 0.09            |
| Pput_0004 | 148545263   | DNA gyrase subunit B                                                  | 1                                      | 1                                    | 1                            | 38                    | 1.2                          | 0.04            |
| Pput_0006 | 148545265   | integrase catalytic subunit                                           | 1                                      | 1                                    | 1                            | 35                    | 1.7                          | 0.05            |
| Pput_0009 | 148545268   | hypothetical protein Pput_0009                                        | 1                                      | 1                                    | 1                            | 60                    | 9.2                          | 0.29            |
| Pput_0011 | 148545270   | hypothetical protein Pput_0011                                        | 1                                      | 1                                    | 1                            | 25                    | 11.3                         | 0.24            |
| Pput_0013 | 148545272   | copper resistance B precursor                                         | 1                                      | 1                                    | 1                            | 61                    | 3.5                          | 0.09            |
| Pput_0014 | 148545273   | hypothetical protein Pput_0014                                        | 1                                      | 1                                    | 1                            | 30                    | 4.4                          | 0.32            |
| Pput_0016 | 148545275   | hypothetical protein Pput_0016                                        | 2                                      | 1                                    | 1                            | 48                    | 7.4                          | 0.55            |
| Pput_0036 | 148545293   | hypothetical protein Pput_0036                                        | 1                                      | 1                                    | 1                            | 27                    | 2.9                          | 0.11            |
| Pput_0043 | 148545300   | two component heavy metal response transcriptional regulator          | 2                                      | 3                                    | 5                            | 122                   | 13.4                         | 0.52            |
| Pput_0068 | 148545325   | beta-lactamase domain-containing protein                              | 1                                      | 1                                    | 1                            | 55                    | 4.8                          | 0.11            |
| Pput_0072 | 148545329   | glucose-methanol-choline oxidoreductase                               | 1                                      | 1                                    | 1                            | 31                    | 2                            | 0.06            |
| Pput_0073 | 148545330   | general substrate transporter                                         | 2                                      | 1                                    | 2                            | 107                   | 3                            | 0.06            |
| Pput_0074 | 148545331   | phospholipid/glycerol acyltransferase                                 | 1                                      | 2                                    | 2                            | 57                    | 8                            | 0.28            |
| Pput_0076 | 148545333   | glycyl-tRNA synthetase subunit beta                                   | 21                                     | 4                                    | 10                           | 1383                  | 10.5                         | 0.4             |
| Pput_0077 | 148545334   | glycyl-tRNA synthetase subunit alpha                                  | 2                                      | 2                                    | 2                            | 102                   | 6.3                          | 0.44            |
| Pput_0081 | 148545338   | potassium transporter peripheral membrane component                   | 2                                      | 2                                    | 2                            | 146                   | 4.4                          | 0.16            |
| Pput_0084 | 148545341   | peptide deformylase                                                   | 1                                      | 1                                    | 1                            | 74                    | 7.1                          | 0.2             |
| Pput_0086 | 148545343   | SUA5/yciO/yrnC domain-containing protein                              | 4                                      | 3                                    | 2                            | 245                   | 10.3                         | 0.41            |
| Pput_0088 | 148545345   | alcohol dehydrogenase                                                 | 1                                      | 1                                    | 1                            | 61                    | 4                            | 0.11            |
| Pput_0089 | 148545346   | coproporphyrinogen III oxidase                                        | 2                                      | 1                                    | 2                            | 59                    | 4.3                          | 0.11            |
| Pput_0090 | 148545347   | shikimate 5-dehydrogenase                                             | 2                                      | 2                                    | 2                            | 101                   | 7.7                          | 0.27            |
| Pput_0097 | 148545354   | tryptophan synthase subunit alpha                                     | 7                                      | 5                                    | 4                            | 460                   | 16.4                         | 0.65            |
| Pput_0098 | 148545355   | tryptophan synthase subunit beta                                      | 2                                      | 1                                    | 2                            | 78                    | 3.5                          | 0.08            |
| Pput_0099 | 148545356   | LysR family transcriptional regulator                                 | 1                                      | 1                                    | 1                            | 29                    | 3                            | 0.12            |
| Pput_0101 | 148545358   | hypothetical protein Pput_0101                                        | 1                                      | 1                                    | 1                            | 44                    | 12.7                         | 0.51            |
| Pput_0103 | 148545360   | luciferase family protein                                             | 2                                      | 5                                    | 5                            | 278                   | 15.6                         | 0.63            |
| Pput_0106 | 148545363   | hypothetical protein Pput_0106                                        | 2                                      | 1                                    | 1                            | 68                    | 6.6                          | 0.25            |
| Pput_0109 | 148545366   | HAD family hydrolase                                                  | 2                                      | 2                                    | 1                            | 88                    | 3.4                          | 0.14            |
| Pput_0110 | 148545367   | carbonic anhydrase                                                    | 1                                      | 1                                    | 1                            | 31                    | 4.4                          | 0.19            |
| Pput_0111 | 148545368   | oligopeptidase A                                                      | 8                                      | 5                                    | 7                            | 455                   | 7.1                          | 0.26            |
| Pput_0115 | 148545372   | carbonate dehydratase                                                 | 8                                      | 12                                   | 10                           | 988                   | 39.7                         | 3.41            |
| Pput_0116 | 148545373   | sulphate transporter                                                  | 1                                      | 1                                    | 1                            | 35                    | 2.4                          | 0.07            |
| Pput_0118 | 148545375   | hypothetical protein Pput_0118                                        | 1                                      | 1                                    | 1                            | 25                    | 8                            | 0.16            |
| Pput_0131 | 148545388   | ABC transporter related                                               | 1                                      | 1                                    | 1                            | 42                    | 5.4                          | 0.1             |
| Pput_0132 | 148545389   | hydroperoxidase II                                                    | 1                                      | 1                                    | 1                            | 47                    | 1.7                          | 0.05            |
| Pput_0133 | 148545390   | hypothetical protein Pput_0133                                        | 4                                      | 7                                    | 7                            | 427                   | 29.4                         | 1.63            |
| Pput_0138 | 148545395   | homoserine kinase                                                     | 1                                      | 1                                    | 1                            | 34                    | 3.5                          | 0.11            |
| Pput_0141 | 148545398   | ribosome biogenesis GTP-binding protein YsxC                          | 2                                      | 6                                    | 7                            | 303                   | 32.9                         | 1.45            |
| Pput_0147 | 148545404   | N-acetylmuramoyl-L-alanine amidase                                    | 1                                      | 2                                    | 2                            | 65                    | 11.5                         | 0.27            |
| Pput_0148 | 148545405   | EAL domain-containing protein                                         | 1                                      | 1                                    | 1                            | 29                    | 2.1                          | 0.06            |
| Pput_0150 | 148545407   | two component, sigma54 specific, Fis family transcriptional regulator | 1                                      | 2                                    | 2                            | 105                   | 4.9                          | 0.16            |
| Pput_0159 | 148545416   | ABC transporter related                                               | 1                                      | 1                                    | 1                            | 43                    | 3.8                          | 0.13            |
| Pput_0163 | 148545420   | sodium-dependent inorganic phosphate (Pi) transporter                 | 3                                      | 1                                    | 1                            | 87                    | 1.3                          | 0.06            |
| Pput_0167 | 148545424   | hypothetical protein Pput_0167                                        | 1                                      | 1                                    | 1                            | 26                    | 1.7                          | 0.05            |
| Pput_0175 | 148545432   | NAD(P)(+) transhydrogenase (AB-specific)                              | 1                                      | 4                                    | 4                            | 53                    | 11.5                         | 0.44            |
| Pput_0177 | 148545434   | acyl-CoA dehydrogenase domain-containing protein                      | 1                                      | 2                                    | 2                            | 36                    | 5.1                          | 0.18            |
| Pput_0179 | 148545436   | TonB-dependent siderophore receptor                                   | 1                                      | 1                                    | 1                            | 25                    | 1.1                          | 0.04            |
| Pput_0182 | 148545439   | GntR family transcriptional regulator                                 | 2                                      | 3                                    | 3                            | 157                   | 14.4                         | 0.52            |
| Pput_0184 | 148545441   | diguanylate cyclase/phosphodiesterase                                 | 5                                      | 2                                    | 3                            | 198                   | 3.4                          | 0.11            |
| Pput_0186 | 148545443   | ABC transporter related                                               | 2                                      | 1                                    | 2                            | 76                    | 1.9                          | 0.05            |
| Pput_0195 | 148545452   | Sel1 domain-containing protein                                        | 2                                      | 1                                    | 1                            | 54                    | 4.2                          | 0.13            |
| Pput_0196 | 148545453   | MarR family transcriptional regulator                                 | 1                                      | 1                                    | 1                            | 28                    | 6                            | 0.24            |
| Pput_0197 | 148545454   | fusaric acid resistance protein region                                | 1                                      | 1                                    | 1                            | 32                    | 1.9                          | 0.05            |
| Pput_0199 | 148545456   | secretion protein HlyD family protein                                 | 1                                      | 3                                    | 3                            | 103                   | 11                           | 0.39            |
| Pput_0200 | 148545457   | RND efflux system outer membrane lipoprotein                          | 1                                      | 2                                    | 2                            | 36                    | 3                            | 0.15            |
| Pput_0205 | 148545462   | glutathione S-transferase domain-containing protein                   | 2                                      | 1                                    | 4                            | 140                   | 10.9                         | 0.54            |
| Pput_0206 | 148545463   | argininosuccinate lyase                                               | 7                                      | 2                                    | 6                            | 580                   | 11.4                         | 0.38            |
| Pput_0207 | 148545464   | LytTR family two component transcriptional regulator                  | 4                                      | 5                                    | 5                            | 372                   | 19                           | 0.91            |
| Pput_0208 | 148545465   | porphobilinogen deaminase                                             | 1                                      | 1                                    | 1                            | 58                    | 5.4                          | 0.11            |
| Pput_0209 | 148545466   | uroporphyrinogen-III synthase                                         | 2                                      | 1                                    | 1                            | 100                   | 3.5                          | 0.28            |
| Pput_0210 | 148545467   | protein of unknown function DUF513, hemX                              | 6                                      | 7                                    | 8                            | 587                   | 18.9                         | 0.89            |
| Pput_0211 | 148545468   | HemY domain-containing protein                                        | 7                                      | 13                                   | 12                           | 854                   | 29.4                         | 1.55            |
| Pput_0213 | 148545470   | anti-RNA polymerase sigma 70 factor                                   | 1                                      | 1                                    | 1                            | 42                    | 5.1                          | 0.21            |
| Pput_0215 | 148545472   | alginate regulatory protein AlgP                                      | 4                                      | 1                                    | 2                            | 148                   | 4.1                          | 0.22            |
| Pput_0220 | 148545477   | band 7 protein                                                        | 2                                      | 1                                    | 2                            | 83                    | 5.5                          | 0.41            |
| Pput_0222 | 148545479   | YbaK/prolyl-tRNA synthetase associated region                         | 2                                      | 1                                    | 3                            | 86                    | 14.5                         | 0.5             |
| Pput_0228 | 148545484   | succinate-semialdehyde dehydrogenase I                                | 4                                      | 5                                    | 6                            | 396                   | 10.8                         | 0.42            |
| Pput_0229 | 148545485   | 4-aminobutyrate aminotransferase                                      | 2                                      | 8                                    | 9                            | 532                   | 20.9                         | 0.75            |
| Pput_0240 | 148545496   | putative amino-acid ABC transporter ATP-binding protein YecC          | 3                                      | 3                                    | 3                            | 181                   | 10.3                         | 0.47            |
| Pput_0241 | 148545497   | polar amino acid ABC transporter, inner membrane subunit              | 1                                      | 1                                    | 1                            | 38                    | 4.1                          | 0.15            |
| Pput_0242 | 148545498   | cystine transporter subunit                                           | 1                                      | 1                                    | 1                            | 29                    | 3                            | 0.13            |
| Pput_0243 | 148545499   | Serine O-acetyltransferase                                            | 1                                      | 2                                    | 2                            | 88                    | 6.1                          | 0.24            |
| Pput_0249 | 148545505   | outer membrane porin                                                  | 32                                     | 19                                   | 15                           | 3794                  | 31.4                         | 2.55            |
| Pput_0250 | 148545506   | peroxidase                                                            | 2                                      | 3                                    | 3                            | 119                   | 15.6                         | 0.56            |
| Pput_0251 | 148545507   | NAD(P)H-dependent FMN reductase                                       | 1                                      | 1                                    | 1                            | 29                    | 4.1                          | 0.18            |
| Pput_0257 | 148545513   | TetR family transcriptional regulator                                 | 1                                      | 2                                    | 2                            | 85                    | 9.5                          | 0.35            |
| Pput_0258 | 148545514   | glutamate--cysteine ligase                                            | 2                                      | 2                                    | 3                            | 106                   | 4.5                          | 0.13            |
| Pput_0260 | 148545516   | RNA-binding S1 domain-containing protein                              | 2                                      | 1                                    | 2                            | 64                    | 1.7                          | 0.04            |
| Pput_0261 | 148545517   | osmolarity response regulator                                         | 5                                      | 4                                    | 5                            | 249                   | 16.3                         | 0.68            |
| Pput_0263 | 148545519   | alpha-L-glutamate ligase                                              | 1                                      | 1                                    | 1                            | 47                    | 3                            | 0.12            |
| Pput_0265 | 148545521   | RNA-binding S4 domain-containing protein                              | 3                                      | 2                                    | 2                            | 103                   | 9                            | 0.58            |
| Pput_0267 | 148545523   | Hsp33-like chaperonin                                                 | 4                                      | 3                                    | 5                            | 296                   | 9.4                          | 0.37            |
| Pput_0268 | 148545524   | phosphoenolpyruvate carboxykinase                                     | 22                                     | 7                                    | 9                            | 1340                  | 16.8                         | 0.67            |

|           |           |                                                                       |    |    |    |       |      |       |
|-----------|-----------|-----------------------------------------------------------------------|----|----|----|-------|------|-------|
| Pput_0274 | 148545530 | HAD family hydrolase                                                  | 1  | 1  | 1  | 52    | 4.1  | 0.15  |
| Pput_0277 | 148545533 | thioesterase domain-containing protein                                | 4  | 1  | 2  | 193   | 10.6 | 0.5   |
| Pput_0278 | 148545534 | two component, sigma54 specific, Fis family transcriptional regulator | 3  | 4  | 4  | 242   | 7.7  | 0.33  |
| Pput_0279 | 148545535 | integral membrane sensor signal transduction histidine kinase         | 1  | 1  | 1  | 60    | 1.7  | 0.06  |
| Pput_0280 | 148545536 | dTDP-4-dehydrohamnose 3,5-epimerase                                   | 1  | 2  | 2  | 68    | 12.7 | 0.41  |
| Pput_0281 | 148545537 | agmatine deiminase                                                    | 1  | 1  | 1  | 33    | 2.4  | 0.09  |
| Pput_0284 | 148545540 | outer membrane porin                                                  | 2  | 9  | 8  | 485   | 21   | 0.83  |
| Pput_0288 | 148545544 | TonB-dependent siderophore receptor                                   | 2  | 1  | 2  | 53    | 1.3  | 0.04  |
| Pput_0298 | 148545553 | polar amino acid ABC transporter, inner membrane subunit              | 1  | 1  | 1  | 26    | 5.7  | 0.15  |
| Pput_0301 | 148545556 | ABC transporter related                                               | 1  | 2  | 2  | 72    | 8.6  | 0.28  |
| Pput_0304 | 148545559 | hypothetical protein Pput_0304                                        | 2  | 1  | 2  | 55    | 4.9  | 0.1   |
| Pput_0307 | 148545562 | AsmA family protein                                                   | 5  | 7  | 7  | 368   | 9.6  | 0.37  |
| Pput_0309 | 148545564 | imidazoleglycerol-phosphate dehydratase                               | 3  | 3  | 5  | 274   | 28.6 | 1.86  |
| Pput_0310 | 148545565 | imidazole glycerol phosphate synthase subunit HisH                    | 2  | 2  | 2  | 172   | 12.7 | 0.35  |
| Pput_0313 | 148545568 | imidazole glycerol phosphate synthase subunit HisF                    | 3  | 2  | 2  | 163   | 7.4  | 0.3   |
| Pput_0316 | 148545571 | substrate-binding region of ABC-type glycine betaine transport system | 5  | 1  | 1  | 153   | 2.9  | 0.44  |
| Pput_0327 | 148545582 | hypothetical protein Pput_0327                                        | 1  | 1  | 1  | 26    | 3.5  | 0.15  |
| Pput_0331 | 148545586 | NADH:flavin oxidoreductase/NADH oxidase                               | 1  | 1  | 1  | 29    | 1.3  | 0.05  |
| Pput_0339 | 148545594 | methyl-accepting chemotaxis sensory transducer                        | 4  | 1  | 1  | 182   | 1.8  | 0.18  |
| Pput_0342 | 148545597 | methyl-accepting chemotaxis sensory transducer                        | 1  | 1  | 1  | 29    | 2    | 0.05  |
| Pput_0343 | 148545598 | threonine aldolase                                                    | 1  | 1  | 1  | 71    | 3.2  | 0.1   |
| Pput_0344 | 148545599 | serine hydroxymethyltransferase                                       | 2  | 1  | 2  | 62    | 2.2  | 0.08  |
| Pput_0347 | 148545602 | sarcosine oxidase alpha subunit family protein                        | 1  | 1  | 1  | 31    | 0.9  | 0.03  |
| Pput_0356 | 148545611 | hypothetical protein Pput_0356                                        | 3  | 2  | 2  | 156   | 12.7 | 0.46  |
| Pput_0358 | 148545613 | sensory histidine kinase CreC                                         | 2  | 1  | 1  | 72    | 1.7  | 0.07  |
| Pput_0360 | 148545615 | glutathione S-transferase domain-containing protein                   | 2  | 3  | 4  | 127   | 17.4 | 0.58  |
| Pput_0361 | 148545616 | methionine sulfoxide reductase A                                      | 3  | 3  | 2  | 243   | 10.4 | 0.3   |
| Pput_0363 | 148545618 | dihydroliipoamide acetyltransferase                                   | 52 | 2  | 15 | 5635  | 26.9 | 1.32  |
| Pput_0364 | 148545619 | pyruvate dehydrogenase subunit E1                                     | 68 | 13 | 37 | 14891 | 27.2 | 2.45  |
| Pput_0365 | 148545620 | (glutamate--ammonia-ligase) adenylyltransferase                       | 1  | 1  | 1  | 34    | 0.9  | 0.03  |
| Pput_0366 | 148545621 | lipopolysaccharide heptosyltransferase II                             | 2  | 3  | 3  | 160   | 7.7  | 0.64  |
| Pput_0367 | 148545622 | lipopolysaccharide heptosyltransferase I                              | 1  | 3  | 2  | 168   | 5.7  | 0.2   |
| Pput_0368 | 148545623 | glycosyl transferase, group 1                                         | 8  | 1  | 4  | 457   | 5.1  | 0.19  |
| Pput_0369 | 148545624 | lipopolysaccharide kinase                                             | 2  | 1  | 2  | 80    | 6.3  | 0.12  |
| Pput_0370 | 148545625 | lipopolysaccharide kinase                                             | 1  | 1  | 1  | 45    | 7.4  | 0.13  |
| Pput_0371 | 148545626 | lipopolysaccharide kinase                                             | 1  | 1  | 1  | 51    | 4.8  | 0.13  |
| Pput_0372 | 148545627 | hypothetical protein Pput_0372                                        | 4  | 1  | 1  | 171   | 1.9  | 0.14  |
| Pput_0378 | 148545633 | RNA polymerase sigma factor                                           | 1  | 1  | 1  | 25    | 4.7  | 0.2   |
| Pput_0380 | 148545635 | CBS domain-containing protein                                         | 1  | 1  | 1  | 42    | 1.2  | 0.05  |
| Pput_0381 | 148545636 | response regulator receiver protein                                   | 1  | 1  | 1  | 31    | 5    | 0.19  |
| Pput_0382 | 148545637 | malate synthase G                                                     | 17 | 8  | 10 | 1029  | 11   | 0.45  |
| Pput_0383 | 148545638 | amino acid-binding ACT domain-containing protein                      | 1  | 2  | 2  | 95    | 16.9 | 0.44  |
| Pput_0394 | 148545649 | acyl-CoA dehydrogenase domain-containing protein                      | 2  | 2  | 2  | 112   | 3.5  | 0.24  |
| Pput_0396 | 148545651 | acyl-CoA dehydrogenase domain-containing protein                      | 1  | 3  | 3  | 83    | 4.7  | 0.18  |
| Pput_0400 | 148545655 | peptidase S9 prolyl oligopeptidase                                    | 1  | 1  | 1  | 34    | 1.2  | 0.05  |
| Pput_0401 | 148545656 | pyrroloquinoline quinone biosynthesis protein PqqE                    | 1  | 1  | 1  | 78    | 2.9  | 0.09  |
| Pput_0403 | 148545658 | pyrroloquinoline quinone biosynthesis protein PqqC                    | 3  | 4  | 5  | 390   | 15.5 | 0.88  |
| Pput_0406 | 148545661 | Nitrilase/cyanide hydratase and apolipoprotein N-acyltransferase      | 4  | 1  | 1  | 208   | 3.4  | 0.39  |
| Pput_0409 | 148545664 | hypothetical protein Pput_0409                                        | 3  | 1  | 2  | 192   | 9.8  | 0.8   |
| Pput_0413 | 148545668 | hypothetical protein Pput_0413                                        | 1  | 2  | 2  | 77    | 6.2  | 0.19  |
| Pput_0420 | 148545672 | diguanylate cyclase/phosphodiesterase with PAS/PAC and GAF sensor(s)  | 2  | 1  | 2  | 58    | 0.7  | 0.03  |
| Pput_0421 | 148545673 | RNA polymerase sigma factor RpoD                                      | 15 | 8  | 12 | 1204  | 12.5 | 0.52  |
| Pput_0423 | 148545675 | 30S ribosomal protein S21                                             | 3  | 2  | 3  | 114   | 28.2 | 1.21  |
| Pput_0424 | 148545676 | metalloendopeptidase glycoprotease family                             | 1  | 1  | 1  | 36    | 3.5  | 0.1   |
| Pput_0428 | 148545680 | 2~3~-cyclic phosphodiesterase/2~-nucleotidase/phosphatase             | 1  | 1  | 1  | 27    | 4.1  | 0.09  |
| Pput_0429 | 148545681 | SpoVR family protein                                                  | 3  | 2  | 3  | 123   | 3.8  | 0.12  |
| Pput_0430 | 148545682 | hypothetical protein Pput_0430                                        | 12 | 6  | 6  | 718   | 10.4 | 0.45  |
| Pput_0431 | 148545683 | putative serine protein kinase, PrkA                                  | 55 | 18 | 22 | 5278  | 23.1 | 1.41  |
| Pput_0435 | 148545687 | dimethyladenosine transferase                                         | 2  | 1  | 2  | 121   | 8.6  | 0.27  |
| Pput_0437 | 148545689 | SurA domain-containing protein                                        | 1  | 1  | 1  | 28    | 1.8  | 0.08  |
| Pput_0438 | 148545690 | organic solvent tolerance protein                                     | 17 | 5  | 10 | 1092  | 8    | 0.27  |
| Pput_0439 | 148545691 | aminoglycoside phosphotransferase                                     | 1  | 1  | 1  | 78    | 4.1  | 0.1   |
| Pput_0440 | 148545692 | nucleotidyl transferase                                               | 1  | 1  | 1  | 52    | 5.4  | 0.16  |
| Pput_0441 | 148545693 | heat shock protein DnaJ domain-containing protein                     | 3  | 1  | 1  | 80    | 4.3  | 0.13  |
| Pput_0443 | 148545695 | PAS/PAC sensor signal transduction histidine kinase                   | 1  | 1  | 1  | 27    | 1    | 0.04  |
| Pput_0445 | 148545697 | spermidine/putrescine ABC transporter ATPase subunit                  | 5  | 6  | 11 | 802   | 28.1 | 1.83  |
| Pput_0446 | 148545698 | extracellular solute-binding protein                                  | 2  | 2  | 2  | 149   | 6.7  | 0.21  |
| Pput_0447 | 148545699 | binding-protein-dependent transport systems inner membrane component  | 7  | 1  | 3  | 315   | 4.6  | 0.17  |
| Pput_0448 | 148545700 | binding-protein-dependent transport systems inner membrane component  | 1  | 1  | 1  | 54    | 5.1  | 0.13  |
| Pput_0449 | 148545701 | ribulose-phosphate 3-epimerase                                        | 1  | 2  | 2  | 61    | 12.1 | 0.34  |
| Pput_0451 | 148545703 | anthranilate synthase component I                                     | 15 | 9  | 10 | 1051  | 17.6 | 0.81  |
| Pput_0452 | 148545704 | outer membrane autotransporter                                        | 2  | 1  | 2  | 153   | 2.2  | 0.06  |
| Pput_0455 | 148545707 | indole-3-glycerol-phosphate synthase                                  | 3  | 3  | 4  | 350   | 10.8 | 0.42  |
| Pput_0457 | 148545709 | cAMP-regulatory protein                                               | 1  | 1  | 1  | 29    | 5.8  | 0.15  |
| Pput_0460 | 148545712 | ubiquinone biosynthesis protein COQ7-like protein                     | 2  | 1  | 1  | 138   | 4.7  | 0.16  |
| Pput_0462 | 148545714 | short-chain dehydrogenase/reductase SDR                               | 1  | 1  | 1  | 26    | 5    | 0.13  |
| Pput_0465 | 148545717 | N-acetyl-gamma-glutamyl-phosphate reductase                           | 2  | 8  | 7  | 270   | 26.5 | 1.19  |
| Pput_0467 | 148545719 | anhydro-N-acetylglutamic acid kinase                                  | 2  | 2  | 3  | 75    | 5.5  | 0.2   |
| Pput_0469 | 148545721 | tyrosyl-tRNA synthetase                                               | 4  | 1  | 6  | 280   | 12.5 | 0.5   |
| Pput_0470 | 148545722 | biotin--protein ligase                                                | 1  | 1  | 1  | 65    | 5    | 0.11  |
| Pput_0471 | 148545723 | pantothenate kinase                                                   | 1  | 1  | 1  | 56    | 4    | 0.14  |
| Pput_0473 | 148545725 | elongation factor Tu                                                  | 75 | 7  | 31 | 16258 | 53.1 | 15.22 |
| Pput_0475 | 148545727 | transcription antitermination protein NusG                            | 4  | 3  | 4  | 294   | 26.6 | 1.02  |
| Pput_0476 | 148545728 | 50S ribosomal protein L11                                             | 4  | 2  | 6  | 524   | 28   | 2.21  |
| Pput_0477 | 148545729 | 50S ribosomal protein L1                                              | 25 | 31 | 14 | 2501  | 72.3 | 6.75  |
| Pput_0478 | 148545730 | 50S ribosomal protein L10                                             | 11 | 12 | 12 | 1879  | 46.2 | 5.22  |
| Pput_0479 | 148545731 | 50S ribosomal protein L7/L12                                          | 4  | 1  | 1  | 224   | 11.6 | 0.64  |
| Pput_0480 | 148545732 | DNA-directed RNA polymerase subunit beta                              | 63 | 11 | 35 | 9886  | 15.7 | 0.7   |
| Pput_0481 | 148545733 | DNA-directed RNA polymerase subunit beta~                             | 64 | 2  | 32 | 11922 | 13.2 | 0.56  |

|           |           |                                                                                               |    |    |    |      |      |        |
|-----------|-----------|-----------------------------------------------------------------------------------------------|----|----|----|------|------|--------|
| Pput_0482 | 148545734 | 30S ribosomal protein S12                                                                     | 6  | 9  | 7  | 412  | 35   | 6.33   |
| Pput_0483 | 148545735 | 30S ribosomal protein S7                                                                      | 15 | 28 | 19 | 2879 | 82.1 | 161.86 |
| Pput_0484 | 148545736 | elongation factor G                                                                           | 49 | 25 | 22 | 7446 | 25   | 1.62   |
| Pput_0486 | 148545738 | 30S ribosomal protein S10                                                                     | 6  | 10 | 8  | 1225 | 59.2 | 12.7   |
| Pput_0487 | 148545739 | 50S ribosomal protein L3                                                                      | 23 | 23 | 17 | 3802 | 54.5 | 10.99  |
| Pput_0488 | 148545740 | 50S ribosomal protein L4                                                                      | 9  | 11 | 9  | 1176 | 40.5 | 4.06   |
| Pput_0489 | 148545741 | 50S ribosomal protein L23                                                                     | 5  | 3  | 3  | 447  | 41.4 | 1.56   |
| Pput_0490 | 148545742 | 50S ribosomal protein L2                                                                      | 27 | 14 | 12 | 2667 | 43.8 | 8.03   |
| Pput_0491 | 148545743 | 30S ribosomal protein S19                                                                     | 1  | 1  | 1  | 40   | 11   | 0.39   |
| Pput_0492 | 148545744 | 50S ribosomal protein L22                                                                     | 7  | 6  | 9  | 1210 | 57.3 | 13.39  |
| Pput_0493 | 148545745 | 30S ribosomal protein S3                                                                      | 11 | 12 | 13 | 820  | 48.7 | 6.51   |
| Pput_0494 | 148545746 | 50S ribosomal protein L16                                                                     | 4  | 2  | 2  | 214  | 13.1 | 1.71   |
| Pput_0495 | 148545747 | 50S ribosomal protein L29                                                                     | 4  | 2  | 3  | 263  | 41.3 | 2.92   |
| Pput_0496 | 148545748 | 30S ribosomal protein S17                                                                     | 6  | 9  | 9  | 856  | 52.3 | 24.41  |
| Pput_0497 | 148545749 | 50S ribosomal protein L14                                                                     | 8  | 9  | 9  | 1981 | 58.2 | 46.11  |
| Pput_0498 | 148545750 | 50S ribosomal protein L24                                                                     | 5  | 5  | 7  | 481  | 51.9 | 3.51   |
| Pput_0499 | 148545751 | 50S ribosomal protein L5                                                                      | 9  | 4  | 9  | 1031 | 33   | 2.36   |
| Pput_0500 | 148545752 | 30S ribosomal protein S14                                                                     | 7  | 4  | 4  | 671  | 37.6 | 2.3    |
| Pput_0501 | 148545753 | 30S ribosomal protein S8                                                                      | 7  | 12 | 7  | 1610 | 50.8 | 10.85  |
| Pput_0502 | 148545754 | 50S ribosomal protein L6                                                                      | 13 | 13 | 11 | 1936 | 41.8 | 8.08   |
| Pput_0503 | 148545755 | 50S ribosomal protein L18                                                                     | 7  | 12 | 12 | 1834 | 69   | 43.51  |
| Pput_0504 | 148545756 | 30S ribosomal protein S5                                                                      | 14 | 16 | 16 | 3872 | 71.7 | 102.82 |
| Pput_0505 | 148545757 | 50S ribosomal protein L30                                                                     | 6  | 3  | 3  | 689  | 41.4 | 10.99  |
| Pput_0506 | 148545758 | 50S ribosomal protein L15                                                                     | 10 | 12 | 11 | 1270 | 63.2 | 25.82  |
| Pput_0507 | 148545759 | preprotein translocase subunit SecY                                                           | 11 | 2  | 3  | 552  | 5.9  | 0.16   |
| Pput_0508 | 148545760 | ribosomal protein L36                                                                         | 2  | 1  | 1  | 65   | 14.5 | 0.64   |
| Pput_0509 | 148545761 | 30S ribosomal protein S13                                                                     | 7  | 7  | 5  | 637  | 39   | 4.47   |
| Pput_0510 | 148545762 | 30S ribosomal protein S11                                                                     | 8  | 8  | 7  | 1364 | 47.3 | 6.45   |
| Pput_0511 | 148545763 | 30S ribosomal protein S4                                                                      | 27 | 13 | 19 | 2852 | 61.2 | 19.77  |
| Pput_0512 | 148545764 | DNA-directed RNA polymerase subunit alpha                                                     | 37 | 24 | 22 | 3981 | 41.7 | 6.02   |
| Pput_0513 | 148545765 | 50S ribosomal protein L17                                                                     | 6  | 5  | 7  | 600  | 21.1 | 3.93   |
| Pput_0514 | 148545766 | catalase                                                                                      | 3  | 2  | 3  | 170  | 4.8  | 0.14   |
| Pput_0515 | 148545767 | bacterioferritin                                                                              | 5  | 4  | 4  | 336  | 26   | 1.63   |
| Pput_0516 | 148545768 | excinuclease ABC subunit A                                                                    | 4  | 1  | 3  | 170  | 1.5  | 0.04   |
| Pput_0517 | 148545769 | major facilitator transporter                                                                 | 3  | 1  | 1  | 90   | 1.9  | 0.24   |
| Pput_0518 | 148545770 | single-stranded DNA-binding protein                                                           | 3  | 3  | 7  | 500  | 27.1 | 1.84   |
| Pput_0519 | 148545771 | GntR family transcriptional regulator                                                         | 2  | 2  | 3  | 115  | 4.3  | 0.15   |
| Pput_0522 | 148545774 | molybdopterin oxidoreductase Fe4S4 region                                                     | 15 | 4  | 5  | 955  | 14.3 | 0.92   |
| Pput_0523 | 148545775 | formate dehydrogenase, alpha subunit                                                          | 27 | 7  | 11 | 2153 | 8.9  | 0.32   |
| Pput_0524 | 148545776 | formate dehydrogenase, beta subunit                                                           | 2  | 1  | 1  | 62   | 3.5  | 0.11   |
| Pput_0525 | 148545777 | formate dehydrogenase, gamma subunit                                                          | 9  | 4  | 3  | 401  | 10.1 | 0.86   |
| Pput_0526 | 148545778 | formate dehydrogenase accessory protein FdhE                                                  | 2  | 1  | 2  | 63   | 4.9  | 0.11   |
| Pput_0527 | 148545779 | selenocysteine synthase                                                                       | 4  | 3  | 3  | 321  | 4.2  | 0.3    |
| Pput_0528 | 148545780 | selenocysteine-specific translation elongation factor                                         | 1  | 3  | 3  | 122  | 4.5  | 0.17   |
| Pput_0531 | 148545783 | Cro/CI family transcriptional regulator                                                       | 2  | 1  | 1  | 118  | 4.1  | 0.12   |
| Pput_0535 | 148545785 | dTDP-4-dehydrothamnose reductase                                                              | 2  | 1  | 2  | 77   | 5.4  | 0.11   |
| Pput_0536 | 148545786 | NAD-dependent epimerase/dehydratase                                                           | 2  | 1  | 1  | 82   | 2.9  | 0.22   |
| Pput_0539 | 148545789 | OmpW family protein                                                                           | 3  | 7  | 6  | 405  | 30.4 | 1.78   |
| Pput_0541 | 148545791 | hypothetical protein Pput_0541                                                                | 1  | 1  | 1  | 25   | 1.9  | 0.08   |
| Pput_0545 | 148545795 | thioredoxin                                                                                   | 2  | 1  | 1  | 129  | 4.1  | 0.24   |
| Pput_0547 | 148545797 | hypothetical protein Pput_0547                                                                | 2  | 2  | 2  | 138  | 15.8 | 1.02   |
| Pput_0548 | 148545798 | transcriptional regulator NrdR                                                                | 2  | 2  | 3  | 72   | 11.7 | 0.47   |
| Pput_0549 | 148545799 | riboflavin biosynthesis protein RibD                                                          | 1  | 1  | 1  | 26   | 4.8  | 0.09   |
| Pput_0550 | 148545800 | riboflavin synthase subunit alpha                                                             | 3  | 3  | 2  | 345  | 14.5 | 0.57   |
| Pput_0551 | 148545801 | bifunctional 3,4-dihydroxy-2-butanone 4-phosphate synthase/GTP cyclohydrolase II-like protein | 1  | 3  | 3  | 121  | 9.1  | 0.31   |
| Pput_0552 | 148545802 | 6,7-dimethyl-8-ribityllumazine synthase                                                       | 8  | 6  | 6  | 646  | 36.1 | 1.89   |
| Pput_0553 | 148545803 | transcription antitermination protein NusB                                                    | 3  | 2  | 2  | 104  | 10.8 | 0.46   |
| Pput_0554 | 148545804 | thiamine monophosphate kinase                                                                 | 1  | 1  | 1  | 27   | 3.7  | 0.11   |
| Pput_0561 | 148545811 | 1-deoxy-D-xylulose-5-phosphate synthase                                                       | 2  | 3  | 5  | 173  | 5.9  | 0.17   |
| Pput_0567 | 148545817 | integral membrane sensor signal transduction histidine kinase                                 | 1  | 1  | 1  | 25   | 3.4  | 0.07   |
| Pput_0576 | 148545826 | hypothetical protein Pput_0576                                                                | 1  | 1  | 1  | 30   | 3.4  | 0.15   |
| Pput_0577 | 148545827 | inorganic pyrophosphatase                                                                     | 1  | 1  | 1  | 55   | 10.3 | 0.2    |
| Pput_0579 | 148545829 | SNARE associated Golgi protein                                                                | 2  | 1  | 2  | 59   | 3.7  | 0.16   |
| Pput_0580 | 148545830 | GCN5-related N-acetyltransferase                                                              | 9  | 4  | 4  | 613  | 22.4 | 0.8    |
| Pput_0581 | 148545831 | ethanolamine ammonia-lyase small subunit                                                      | 3  | 1  | 2  | 189  | 5.1  | 0.13   |
| Pput_0582 | 148545832 | ethanolamine ammonia-lyase large subunit                                                      | 3  | 1  | 3  | 152  | 4.3  | 0.15   |
| Pput_0583 | 148545833 | ethanolamine transproter                                                                      | 5  | 2  | 3  | 229  | 4.4  | 0.15   |
| Pput_0584 | 148545834 | aldehyde dehydrogenase                                                                        | 43 | 13 | 13 | 2659 | 22.3 | 1.18   |
| Pput_0585 | 148545835 | Fis family GAF modulated sigma54 specific transcriptional regulator                           | 6  | 1  | 1  | 185  | 1    | 0.15   |
| Pput_0586 | 148545836 | UDP-N-acetylmuramate                                                                          | 2  | 1  | 2  | 210  | 5.3  | 0.16   |
| Pput_0587 | 148545837 | aromatic acid decarboxylase                                                                   | 1  | 2  | 2  | 56   | 11   | 0.36   |
| Pput_0589 | 148545839 | hypothetical protein Pput_0589                                                                | 3  | 4  | 4  | 230  | 19.6 | 0.81   |
| Pput_0593 | 148545843 | transketolase, central region                                                                 | 1  | 1  | 1  | 75   | 2.9  | 0.1    |
| Pput_0594 | 148545844 | pyruvate dehydrogenase (acetyl-transferring)                                                  | 2  | 1  | 1  | 60   | 4    | 0.11   |
| Pput_0597 | 148545847 | acetyl-CoA carboxylase biotin carboxylase subunit                                             | 22 | 10 | 12 | 1802 | 22.8 | 1.39   |
| Pput_0598 | 148545848 | acetyl-CoA carboxylase biotin carboxyl carrier protein subunit                                | 3  | 1  | 2  | 338  | 17   | 1.82   |
| Pput_0601 | 148545851 | methyl-accepting chemotaxis sensory transducer                                                | 1  | 2  | 2  | 43   | 2.3  | 0.11   |
| Pput_0602 | 148545852 | response regulator receiver modulated diguanylate cyclase                                     | 1  | 1  | 1  | 28   | 2.2  | 0.07   |
| Pput_0603 | 148545853 | hypothetical protein Pput_0603                                                                | 20 | 9  | 8  | 2063 | 28.5 | 1.07   |
| Pput_0606 | 148545856 | arginine decarboxylase                                                                        | 1  | 2  | 2  | 36   | 1.6  | 0.11   |
| Pput_0615 | 148545865 | hypothetical protein Pput_0615                                                                | 8  | 13 | 10 | 1184 | 43.9 | 5.11   |
| Pput_0616 | 148545866 | hypothetical protein Pput_0616                                                                | 1  | 1  | 1  | 65   | 6.2  | 0.17   |
| Pput_0617 | 148545867 | methyltransferase type 11                                                                     | 2  | 1  | 1  | 69   | 3.2  | 0.26   |
| Pput_0619 | 148545869 | dehydratase                                                                                   | 1  | 1  | 1  | 50   | 4.6  | 0.12   |
| Pput_0620 | 148545870 | 3-ketoacyl-(acyl-carrier-protein) reductase                                                   | 5  | 5  | 5  | 390  | 12.9 | 0.46   |
| Pput_0621 | 148545871 | acetyl-CoA acetyltransferase                                                                  | 2  | 3  | 4  | 208  | 9.2  | 0.27   |
| Pput_0622 | 148545872 | helix-turn-helix domain-containing protein                                                    | 1  | 1  | 1  | 25   | 4.6  | 0.13   |
| Pput_0623 | 148545873 | methyl-accepting chemotaxis sensory transducer                                                | 2  | 1  | 1  | 113  | 1.7  | 0.05   |
| Pput_0625 | 148545875 | heavy metal translocating P-type ATPase                                                       | 1  | 1  | 1  | 25   | 2    | 0.04   |

|           |           |                                                                      |    |    |    |      |      |      |
|-----------|-----------|----------------------------------------------------------------------|----|----|----|------|------|------|
| Pput_0631 | 148545881 | adenosine deaminase                                                  | 2  | 1  | 2  | 64   | 3.1  | 0.1  |
| Pput_0632 | 148545882 | short chain dehydrogenase                                            | 3  | 3  | 3  | 307  | 12.7 | 0.54 |
| Pput_0634 | 148545884 | TetR family transcriptional regulator                                | 3  | 2  | 3  | 162  | 9.1  | 0.33 |
| Pput_0637 | 148545887 | methylmalonate-semialdehyde dehydrogenase                            | 2  | 3  | 4  | 143  | 7.6  | 0.22 |
| Pput_0640 | 148545890 | hypothetical protein Pput_0640                                       | 1  | 2  | 2  | 27   | 3.8  | 0.09 |
| Pput_0641 | 148545891 | 30S ribosomal protein S20                                            | 4  | 1  | 1  | 284  | 15.2 | 0.4  |
| Pput_0644 | 148545894 | isoleucyl-tRNA synthetase                                            | 11 | 5  | 10 | 482  | 5.2  | 0.19 |
| Pput_0645 | 148545895 | lipoprotein signal peptidase                                         | 1  | 1  | 1  | 28   | 4.7  | 0.2  |
| Pput_0647 | 148545897 | 4-hydroxy-3-methylbut-2-enyl diphosphate reductase                   | 1  | 1  | 1  | 28   | 4.8  | 0.11 |
| Pput_0662 | 148545912 | DNA uptake lipoprotein-like protein                                  | 7  | 1  | 4  | 303  | 8.8  | 0.32 |
| Pput_0663 | 148545913 | RluA family pseudouridine synthase                                   | 1  | 2  | 2  | 91   | 5.4  | 0.2  |
| Pput_0664 | 148545914 | hypothetical protein Pput_0664                                       | 1  | 1  | 1  | 46   | 3.7  | 0.14 |
| Pput_0665 | 148545915 | ATPase                                                               | 43 | 12 | 36 | 8712 | 28.9 | 1.92 |
| Pput_0666 | 148545916 | FAD-dependent pyridine nucleotide-disulphide oxidoreductase          | 1  | 1  | 1  | 58   | 3.7  | 0.08 |
| Pput_0668 | 148545918 | hypothetical protein Pput_0668                                       | 1  | 1  | 1  | 46   | 4.8  | 0.16 |
| Pput_0672 | 148545922 | dephospho-CoA kinase                                                 | 1  | 1  | 1  | 59   | 6.8  | 0.17 |
| Pput_0687 | 148545934 | lactate/malate dehydrogenase                                         | 1  | 1  | 1  | 40   | 3.2  | 0.11 |
| Pput_0692 | 148545938 | homocysteine S-methyltransferase                                     | 1  | 1  | 1  | 62   | 3.5  | 0.11 |
| Pput_0699 | 148545945 | aldehyde dehydrogenase                                               | 1  | 1  | 1  | 27   | 3.4  | 0.07 |
| Pput_0700 | 148545946 | endoribonuclease L-PSP                                               | 1  | 1  | 1  | 29   | 8.7  | 0.31 |
| Pput_0702 | 148545948 | serine hydroxymethyltransferase                                      | 27 | 2  | 4  | 1315 | 8.2  | 0.37 |
| Pput_0703 | 148545949 | diguanylate cyclase/phosphodiesterase with PAS/PAC and GAF sensor(s) | 1  | 1  | 1  | 28   | 0.6  | 0.03 |
| Pput_0705 | 148545951 | putative ABC transporter ATP-binding protein                         | 21 | 15 | 15 | 1961 | 27.7 | 1.4  |
| Pput_0706 | 148545952 | glutamate dehydrogenase                                              | 1  | 1  | 1  | 103  | 3.4  | 0.08 |
| Pput_0708 | 148545954 | hypothetical protein Pput_0708                                       | 9  | 3  | 2  | 838  | 18.6 | 1.08 |
| Pput_0710 | 148545956 | hypothetical protein Pput_0710                                       | 8  | 1  | 1  | 259  | 4.9  | 0.92 |
| Pput_0711 | 148545957 | ATP-dependent protease-like protein                                  | 14 | 4  | 7  | 871  | 6    | 0.18 |
| Pput_0715 | 148545961 | peptidylprolyl isomerase, FKBP-type                                  | 1  | 2  | 2  | 51   | 10.2 | 0.39 |
| Pput_0718 | 148545964 | polyprenyl synthetase                                                | 2  | 2  | 2  | 204  | 7.1  | 0.22 |
| Pput_0720 | 148545966 | 50S ribosomal protein L21                                            | 6  | 4  | 5  | 504  | 36.5 | 2.23 |
| Pput_0721 | 148545967 | 50S ribosomal protein L27                                            | 4  | 2  | 1  | 179  | 17.6 | 1.92 |
| Pput_0722 | 148545968 | GTPase ObgE                                                          | 3  | 3  | 4  | 167  | 9.8  | 0.27 |
| Pput_0723 | 148545969 | gamma-glutamyl kinase                                                | 3  | 4  | 6  | 496  | 16.9 | 0.57 |
| Pput_0726 | 148545972 | hypothetical protein Pput_0726                                       | 1  | 1  | 1  | 55   | 4.7  | 0.14 |
| Pput_0727 | 148545973 | hypothetical protein Pput_0727                                       | 1  | 1  | 1  | 28   | 2.3  | 0.07 |
| Pput_0736 | 148545982 | anti-FecI sigma factor, FecR                                         | 1  | 1  | 1  | 26   | 3.8  | 0.11 |
| Pput_0738 | 148545984 | DNA-3-methyladenine glycosylase II                                   | 1  | 2  | 2  | 67   | 9.2  | 0.36 |
| Pput_0740 | 148545986 | MscS mechanosensitive ion channel                                    | 11 | 2  | 6  | 714  | 3.7  | 0.13 |
| Pput_0742 | 148545988 | aldehyde dehydrogenase                                               | 1  | 1  | 1  | 29   | 1.9  | 0.07 |
| Pput_0745 | 148545991 | isochorismatase hydrolase                                            | 2  | 2  | 1  | 65   | 3.9  | 0.52 |
| Pput_0753 | 148545999 | GTP-dependent nucleic acid-binding protein EngD                      | 5  | 2  | 3  | 212  | 5.5  | 0.4  |
| Pput_0754 | 148546000 | peptidyl-tRNA hydrolase                                              | 2  | 4  | 4  | 138  | 19.6 | 0.96 |
| Pput_0755 | 148546001 | 50S ribosomal protein L25/general stress protein Ctc                 | 10 | 7  | 8  | 1212 | 41.6 | 3.43 |
| Pput_0756 | 148546002 | ribose-phosphate pyrophosphokinase                                   | 6  | 11 | 7  | 991  | 22.9 | 1.85 |
| Pput_0758 | 148546004 | outer membrane lipoprotein LolB                                      | 3  | 2  | 3  | 181  | 17.6 | 0.59 |
| Pput_0759 | 148546005 | TPR repeat-containing protein                                        | 1  | 1  | 1  | 25   | 1.9  | 0.06 |
| Pput_0760 | 148546006 | glutamyl-tRNA reductase                                              | 2  | 2  | 2  | 56   | 3.8  | 0.17 |
| Pput_0761 | 148546007 | peptide chain release factor 1                                       | 1  | 1  | 1  | 63   | 3.3  | 0.09 |
| Pput_0763 | 148546009 | molybdopterin biosynthesis protein MoeB                              | 2  | 1  | 2  | 162  | 4.8  | 0.14 |
| Pput_0765 | 148546011 | hypothetical protein Pput_0765                                       | 1  | 1  | 1  | 63   | 6.5  | 0.23 |
| Pput_0770 | 148546016 | NAD/FAD-dependent oxidoreductase-like protein                        | 1  | 1  | 1  | 28   | 3    | 0.1  |
| Pput_0772 | 148546018 | ferrochelatase                                                       | 1  | 1  | 1  | 62   | 3.6  | 0.1  |
| Pput_0774 | 148546020 | uracil phosphoribosyltransferase                                     | 2  | 1  | 1  | 110  | 4.2  | 0.17 |
| Pput_0775 | 148546021 | hypoxanthine-guanine phosphoribosyltransferase                       | 1  | 1  | 1  | 32   | 4.3  | 0.18 |
| Pput_0779 | 148546025 | malate:quinone oxidoreductase                                        | 4  | 5  | 5  | 372  | 12.2 | 0.39 |
| Pput_0780 | 148546026 | hypothetical protein Pput_0780                                       | 11 | 7  | 7  | 1822 | 45.4 | 3.68 |
| Pput_0787 | 148546033 | peptidase M48, Ste24p                                                | 1  | 1  | 1  | 36   | 2.9  | 0.13 |
| Pput_0789 | 148546035 | rRNA (guanine-N(2)-)-methyltransferase                               | 1  | 1  | 1  | 39   | 2.4  | 0.1  |
| Pput_0791 | 148546037 | acyl-CoA synthetase                                                  | 1  | 2  | 2  | 79   | 3.2  | 0.12 |
| Pput_0792 | 148546038 | hypothetical protein Pput_0792                                       | 22 | 4  | 5  | 2292 | 7.2  | 0.37 |
| Pput_0793 | 148546039 | hypothetical protein Pput_0793                                       | 1  | 4  | 4  | 131  | 11   | 0.33 |
| Pput_0798 | 148546044 | OmpA/MotB domain-containing protein                                  | 17 | 14 | 8  | 2688 | 49.4 | 3.47 |
| Pput_0799 | 148546045 | phosphate acetyltransferase                                          | 1  | 2  | 2  | 58   | 2.7  | 0.1  |
| Pput_0801 | 148546047 | peptidylprolyl isomerase, FKBP-type                                  | 4  | 4  | 3  | 405  | 21.1 | 0.84 |
| Pput_0802 | 148546048 | peroxiredoxin                                                        | 1  | 2  | 2  | 83   | 14.4 | 0.49 |
| Pput_0803 | 148546049 | glycosyl transferase, group 1                                        | 1  | 1  | 1  | 29   | 3.3  | 0.08 |
| Pput_0804 | 148546050 | methyl-accepting chemotaxis sensory transducer                       | 1  | 1  | 1  | 31   | 2.5  | 0.08 |
| Pput_0809 | 148546054 | thioredoxin reductase                                                | 2  | 1  | 1  | 90   | 2.8  | 0.11 |
| Pput_0811 | 148546056 | hypothetical protein Pput_0811                                       | 1  | 1  | 1  | 28   | 1.1  | 0.05 |
| Pput_0812 | 148546057 | N-acetyl-anhydromuramyl-L-alanine amidase                            | 1  | 1  | 1  | 47   | 5.8  | 0.18 |
| Pput_0815 | 148546060 | DNA-binding transcriptional regulator FruR                           | 3  | 4  | 6  | 181  | 17.2 | 0.45 |
| Pput_0820 | 148546065 | hypothetical protein Pput_0820                                       | 2  | 1  | 1  | 115  | 11.4 | 0.22 |
| Pput_0829 | 148546074 | TolC family type I secretion outer membrane protein                  | 1  | 1  | 1  | 26   | 2.1  | 0.07 |
| Pput_0831 | 148546076 | anaerobic nitric oxide reductase transcription regulator             | 1  | 1  | 1  | 33   | 1.7  | 0.06 |
| Pput_0835 | 148546079 | ubiquinol oxidase, subunit II                                        | 5  | 1  | 1  | 229  | 3.8  | 0.55 |
| Pput_0836 | 148546080 | cytochrome o ubiquinol oxidase, subunit I                            | 12 | 1  | 2  | 779  | 2.4  | 0.1  |
| Pput_0840 | 148546084 | aminotransferase                                                     | 2  | 1  | 2  | 53   | 4.2  | 0.08 |
| Pput_0849 | 148546093 | tRNA 2-selenouridine synthase                                        | 1  | 1  | 1  | 27   | 2.2  | 0.09 |
| Pput_0859 | 148546103 | glyoxalase/bleomycin resistance protein/dioxygenase                  | 1  | 1  | 1  | 29   | 6.4  | 0.25 |
| Pput_0862 | 148546106 | S-adenosylmethionine:tRNA ribosyltransferase-isomerase               | 2  | 4  | 5  | 181  | 10.6 | 0.45 |
| Pput_0863 | 148546107 | queuine tRNA-ribosyltransferase                                      | 3  | 1  | 5  | 205  | 13.3 | 0.53 |
| Pput_0864 | 148546108 | preprotein translocase subunit YajC                                  | 1  | 1  | 1  | 29   | 7.2  | 0.33 |
| Pput_0865 | 148546109 | preprotein translocase subunit SecD                                  | 15 | 3  | 5  | 825  | 6.9  | 0.18 |
| Pput_0866 | 148546110 | preprotein translocase subunit SecF                                  | 9  | 1  | 1  | 423  | 3.3  | 0.72 |
| Pput_0867 | 148546111 | hypothetical protein Pput_0867                                       | 5  | 2  | 2  | 301  | 10.8 | 0.94 |
| Pput_0868 | 148546112 | inositol-phosphate phosphatase                                       | 4  | 1  | 3  | 230  | 7    | 0.27 |
| Pput_0869 | 148546113 | RNA methyltransferase                                                | 1  | 1  | 1  | 72   | 6.1  | 0.12 |
| Pput_0870 | 148546114 | serine O-acetyltransferase                                           | 2  | 1  | 1  | 61   | 5.4  | 0.26 |
| Pput_0871 | 148546115 | BadM/Rrf2 family transcriptional regulator                           | 1  | 2  | 2  | 67   | 9.9  | 0.41 |

|           |           |                                                                       |    |    |    |      |      |       |
|-----------|-----------|-----------------------------------------------------------------------|----|----|----|------|------|-------|
| Pput_0872 | 148546116 | cysteine desulfurase                                                  | 9  | 2  | 6  | 601  | 9.2  | 0.38  |
| Pput_0876 | 148546120 | chaperone protein HscA                                                | 2  | 1  | 4  | 178  | 4.7  | 0.18  |
| Pput_0879 | 148546123 | nucleoside-diphosphate kinase                                         | 5  | 6  | 5  | 466  | 33.3 | 6.02  |
| Pput_0882 | 148546126 | helix-turn-helix domain-containing protein                            | 1  | 1  | 1  | 53   | 2.6  | 0.11  |
| Pput_0883 | 148546127 | 4-hydroxy-3-methylbut-2-en-1-yl diphosphate synthase                  | 2  | 5  | 5  | 243  | 14.9 | 0.57  |
| Pput_0884 | 148546128 | histidyl-tRNA synthetase                                              | 2  | 4  | 4  | 155  | 10.7 | 0.35  |
| Pput_0886 | 148546130 | Pyrrolo-quinoline quinone                                             | 4  | 6  | 5  | 380  | 14.5 | 0.55  |
| Pput_0887 | 148546131 | GTP-binding protein EngA                                              | 1  | 3  | 3  | 123  | 8.4  | 0.22  |
| Pput_0888 | 148546132 | putative aminotransferase                                             | 1  | 1  | 1  | 55   | 2.9  | 0.09  |
| Pput_0889 | 148546133 | Nitrilase/cyanide hydratase and apolipoprotein N-acyltransferase      | 2  | 1  | 1  | 224  | 6.8  | 0.13  |
| Pput_0891 | 148546135 | TonB-dependent siderophore receptor                                   | 5  | 7  | 6  | 491  | 9    | 0.3   |
| Pput_0894 | 148546138 | ornithine decarboxylase                                               | 3  | 2  | 2  | 216  | 6.7  | 0.18  |
| Pput_0898 | 148546142 | glycine betaine/L-proline ABC transporter, ATPase subunit             | 1  | 1  | 1  | 30   | 2.3  | 0.09  |
| Pput_0911 | 148546154 | hypothetical protein Pput_0911                                        | 1  | 1  | 1  | 27   | 4.5  | 0.11  |
| Pput_0912 | 148546155 | biotin carboxylase-like protein                                       | 1  | 1  | 1  | 28   | 2.2  | 0.08  |
| Pput_0918 | 148546161 | oligopeptide/dipeptide ABC transporter, ATPase subunit                | 2  | 1  | 1  | 87   | 3.4  | 0.11  |
| Pput_0920 | 148546163 | alkaline phosphatase                                                  | 1  | 1  | 1  | 34   | 3.9  | 0.1   |
| Pput_0924 | 148546167 | extracellular solute-binding protein                                  | 1  | 1  | 1  | 33   | 1.3  | 0.06  |
| Pput_0925 | 148546168 | hypothetical protein Pput_0925                                        | 1  | 2  | 2  | 60   | 8.4  | 0.32  |
| Pput_0927 | 148546170 | two component Fis family transcriptional regulator                    | 3  | 1  | 1  | 215  | 7.5  | 0.36  |
| Pput_0932 | 148546175 | Pfpl family intracellular peptidase                                   | 1  | 1  | 1  | 51   | 10.9 | 0.18  |
| Pput_0936 | 148546179 | tartrate/fumarate subfamily Fe-S type hydro-lyase alpha subunit       | 12 | 4  | 6  | 836  | 9.5  | 0.3   |
| Pput_0940 | 148546183 | two component transcriptional regulator                               | 2  | 2  | 6  | 211  | 24.7 | 1.29  |
| Pput_0941 | 148546184 | integral membrane sensor signal transduction histidine kinase         | 3  | 1  | 2  | 108  | 2.5  | 0.08  |
| Pput_0942 | 148546185 | methyltransferase type 11                                             | 6  | 14 | 16 | 1408 | 55.3 | 12.18 |
| Pput_0943 | 148546186 | lipopolysaccharide kinase                                             | 5  | 3  | 10 | 501  | 30.2 | 1.51  |
| Pput_0948 | 148546191 | periplasmic lipoprotein-like protein                                  | 3  | 4  | 5  | 200  | 9.9  | 0.45  |
| Pput_0952 | 148546195 | hypothetical protein Pput_0952                                        | 4  | 1  | 3  | 255  | 5.2  | 0.16  |
| Pput_0958 | 148546201 | hypothetical protein Pput_0958                                        | 1  | 1  | 1  | 27   | 8.3  | 0.12  |
| Pput_0959 | 148546202 | NADH:flavin oxidoreductase/NADH oxidase                               | 1  | 7  | 7  | 244  | 23.5 | 0.94  |
| Pput_0964 | 148546207 | hypothetical protein Pput_0964                                        | 3  | 5  | 4  | 461  | 18.3 | 0.57  |
| Pput_0967 | 148546210 | amino acid permease-associated region                                 | 3  | 1  | 1  | 193  | 2.9  | 0.24  |
| Pput_0970 | 148546213 | aspartyl/glutamyl-tRNA amidotransferase subunit B                     | 7  | 6  | 7  | 456  | 12.3 | 0.5   |
| Pput_0971 | 148546214 | aspartyl/glutamyl-tRNA amidotransferase subunit A                     | 4  | 3  | 3  | 475  | 7.5  | 0.23  |
| Pput_0973 | 148546216 | rod shape-determining protein MreB                                    | 12 | 11 | 11 | 1139 | 25.5 | 1.62  |
| Pput_0977 | 148546220 | ribonuclease                                                          | 2  | 2  | 3  | 102  | 3.9  | 0.14  |
| Pput_0980 | 148546223 | peptidase U62, modulator of DNA gyrase                                | 3  | 2  | 3  | 134  | 4.4  | 0.15  |
| Pput_0981 | 148546224 | hypothetical protein Pput_0981                                        | 2  | 3  | 3  | 130  | 19.1 | 0.69  |
| Pput_0982 | 148546225 | peptidase U62, modulator of DNA gyrase                                | 1  | 2  | 2  | 103  | 5.8  | 0.16  |
| Pput_0988 | 148546231 | hypothetical protein Pput_0988                                        | 3  | 3  | 3  | 200  | 9.5  | 0.39  |
| Pput_0989 | 148546232 | PTS IIA-like nitrogen-regulatory protein PtsN                         | 1  | 2  | 2  | 36   | 12.3 | 0.51  |
| Pput_0991 | 148546234 | RNA polymerase factor sigma-54                                        | 5  | 2  | 7  | 354  | 13.9 | 0.47  |
| Pput_0992 | 148546235 | ABC transporter related                                               | 5  | 3  | 4  | 389  | 17.4 | 0.49  |
| Pput_0994 | 148546237 | hypothetical protein Pput_0994                                        | 2  | 2  | 2  | 154  | 11.1 | 0.39  |
| Pput_0995 | 148546238 | 3-deoxy-D-manno-octulosonate 8-phosphate phosphatase                  | 1  | 1  | 1  | 35   | 4.6  | 0.2   |
| Pput_0996 | 148546239 | KpsF/GutQ family protein                                              | 1  | 1  | 1  | 29   | 3.1  | 0.11  |
| Pput_0999 | 148546242 | hypothetical protein Pput_0999                                        | 1  | 1  | 1  | 28   | 6.9  | 0.23  |
| Pput_1000 | 148546243 | toluene tolerance family protein                                      | 5  | 1  | 3  | 424  | 13.5 | 0.56  |
| Pput_1003 | 148546246 | UDP-N-acetylglucosamine 1-carboxyvinyltransferase                     | 4  | 1  | 3  | 215  | 5.2  | 0.27  |
| Pput_1004 | 148546247 | ATP phosphoribosyltransferase catalytic subunit                       | 4  | 4  | 5  | 493  | 19.9 | 0.84  |
| Pput_1005 | 148546248 | histidinol dehydrogenase                                              | 4  | 1  | 6  | 282  | 11.6 | 0.46  |
| Pput_1006 | 148546249 | histidinol-phosphate aminotransferase                                 | 2  | 6  | 6  | 216  | 18.4 | 0.74  |
| Pput_1010 | 148546253 | hypothetical protein Pput_1010                                        | 2  | 2  | 3  | 67   | 10.8 | 0.47  |
| Pput_1013 | 148546256 | histone family protein DNA-binding protein                            | 4  | 2  | 2  | 524  | 17.2 | 4.29  |
| Pput_1015 | 148546258 | valyl-tRNA synthetase                                                 | 7  | 1  | 8  | 314  | 3.1  | 0.18  |
| Pput_1018 | 148546261 | leucyl aminopeptidase                                                 | 16 | 2  | 12 | 1446 | 22.3 | 0.98  |
| Pput_1020 | 148546263 | permease YigP/YigQ family protein                                     | 1  | 1  | 1  | 41   | 3.7  | 0.1   |
| Pput_1022 | 148546265 | cold-shock DNA-binding domain-containing protein                      | 1  | 1  | 1  | 27   | 14.5 | 0.54  |
| Pput_1023 | 148546266 | glycine cleavage system T protein                                     | 2  | 4  | 4  | 175  | 13.1 | 0.42  |
| Pput_1035 | 148546278 | hypothetical protein Pput_1035                                        | 1  | 1  | 1  | 37   | 9.8  | 0.28  |
| Pput_1036 | 148546279 | carbamate kinase                                                      | 2  | 3  | 2  | 125  | 7.1  | 0.38  |
| Pput_1037 | 148546280 | ornithine carbamoyltransferase                                        | 30 | 3  | 17 | 3504 | 39.3 | 5.57  |
| Pput_1038 | 148546281 | arginine deiminase                                                    | 24 | 17 | 17 | 2990 | 30.9 | 2.7   |
| Pput_1042 | 148546285 | heme oxygenase                                                        | 1  | 1  | 1  | 28   | 4.1  | 0.18  |
| Pput_1047 | 148546290 | glyceraldehyde-3-phosphate dehydrogenase, type I                      | 5  | 2  | 2  | 212  | 3.3  | 0.62  |
| Pput_1048 | 148546291 | phosphogluconate dehydratase                                          | 11 | 7  | 8  | 780  | 11.8 | 0.47  |
| Pput_1049 | 148546292 | glucokinase                                                           | 1  | 1  | 1  | 94   | 3.8  | 0.11  |
| Pput_1056 | 148546299 | ABC transporter related                                               | 6  | 4  | 4  | 453  | 12.5 | 0.41  |
| Pput_1057 | 148546300 | carbohydrate-selective porin OprB                                     | 20 | 13 | 12 | 1861 | 24.8 | 1.22  |
| Pput_1059 | 148546302 | DNA-binding transcriptional regulator HexR                            | 4  | 1  | 7  | 381  | 12.4 | 0.4   |
| Pput_1060 | 148546303 | glucose-6-phosphate 1-dehydrogenase                                   | 11 | 4  | 9  | 562  | 13.9 | 0.58  |
| Pput_1061 | 148546304 | 6-phosphogluconolactonase                                             | 5  | 3  | 5  | 324  | 16.5 | 0.53  |
| Pput_1062 | 148546305 | keto-hydroxyglutarate-aldolase/keto-deoxy-phosphogluconate aldolase   | 2  | 4  | 4  | 265  | 18.1 | 0.79  |
| Pput_1065 | 148546308 | 2-isopropylmalate synthase                                            | 2  | 3  | 3  | 137  | 4.3  | 0.19  |
| Pput_1067 | 148546310 | exodeoxyribonuclease VII large subunit                                | 2  | 1  | 2  | 73   | 1.7  | 0.07  |
| Pput_1070 | 148546313 | hypothetical protein Pput_1070                                        | 2  | 2  | 1  | 92   | 5.4  | 0.58  |
| Pput_1071 | 148546314 | inosine 5'-monophosphate dehydrogenase                                | 19 | 6  | 16 | 2330 | 35.2 | 2.26  |
| Pput_1072 | 148546315 | GMP synthase                                                          | 7  | 2  | 9  | 523  | 14.1 | 0.74  |
| Pput_1075 | 148546318 | multicopper oxidase, type 3                                           | 2  | 1  | 1  | 56   | 2.2  | 0.14  |
| Pput_1077 | 148546320 | lytic transglycosylase, catalytic                                     | 4  | 2  | 2  | 176  | 4.5  | 0.14  |
| Pput_1078 | 148546321 | phosphoribosylformylglycinamide synthase                              | 17 | 4  | 11 | 1299 | 3.5  | 0.11  |
| Pput_1084 | 148546327 | hypothetical protein Pput_1084                                        | 2  | 1  | 1  | 106  | 1.6  | 0.1   |
| Pput_1097 | 148546340 | FAD-binding 9, siderophore-interacting domain-containing protein      | 4  | 1  | 2  | 125  | 5.1  | 0.13  |
| Pput_1101 | 148546344 | glutamate synthase (NADPH)                                            | 1  | 1  | 1  | 67   | 1.7  | 0.06  |
| Pput_1102 | 148546345 | DEAD/DEAH box helicase domain-containing protein                      | 1  | 1  | 1  | 25   | 0.6  | 0.02  |
| Pput_1104 | 148546347 | LysR family transcriptional regulator                                 | 1  | 1  | 1  | 31   | 2.6  | 0.11  |
| Pput_1107 | 148546350 | two component, sigma54 specific, Fis family transcriptional regulator | 2  | 3  | 3  | 201  | 6.6  | 0.25  |
| Pput_1109 | 148546352 | ABC transporter related                                               | 6  | 10 | 6  | 715  | 19.7 | 1.2   |
| Pput_1111 | 148546354 | polar amino acid ABC transporter, inner membrane subunit              | 1  | 1  | 1  | 35   | 6    | 0.14  |

|           |           |                                                                         |    |    |    |      |      |      |
|-----------|-----------|-------------------------------------------------------------------------|----|----|----|------|------|------|
| Pput_1112 | 148546355 | extracellular solute-binding protein                                    | 5  | 7  | 6  | 543  | 20.3 | 0.9  |
| Pput_1114 | 148546357 | glycerol-3-phosphate dehydrogenase                                      | 5  | 1  | 1  | 158  | 1.8  | 0.28 |
| Pput_1115 | 148546358 | DeoR family transcriptional regulator                                   | 4  | 2  | 4  | 294  | 7.7  | 0.26 |
| Pput_1116 | 148546359 | glycerol kinase                                                         | 2  | 2  | 3  | 155  | 5.4  | 0.21 |
| Pput_1118 | 148546361 | ybaK/ebcC protein                                                       | 1  | 2  | 2  | 102  | 15.4 | 0.52 |
| Pput_1120 | 148546363 | ornithine carbamoyltransferase                                          | 1  | 1  | 1  | 26   | 4.2  | 0.11 |
| Pput_1122 | 148546365 | glutaredoxin-like protein                                               | 1  | 1  | 1  | 58   | 8.6  | 0.22 |
| Pput_1123 | 148546366 | bacterioferritin                                                        | 7  | 5  | 6  | 801  | 40.8 | 3.7  |
| Pput_1125 | 148546368 | alkyl hydroperoxide reductase/ Thiol specific antioxidant/ Mal allergen | 18 | 11 | 6  | 1403 | 28   | 2.87 |
| Pput_1127 | 148546370 | dihydroorotase                                                          | 3  | 5  | 5  | 154  | 14.1 | 0.45 |
| Pput_1129 | 148546372 | argininosuccinate synthase                                              | 5  | 4  | 6  | 373  | 10.1 | 0.37 |
| Pput_1133 | 148546376 | endonuclease III                                                        | 2  | 2  | 2  | 117  | 4.2  | 0.2  |
| Pput_1137 | 148546380 | methionyl-tRNA synthetase                                               | 4  | 1  | 4  | 215  | 3    | 0.1  |
| Pput_1138 | 148546381 | hypothetical protein Pput_1138                                          | 2  | 1  | 1  | 175  | 3.6  | 0.1  |
| Pput_1143 | 148546386 | DEAD/DEAH box helicase domain-containing protein                        | 2  | 1  | 2  | 54   | 1.2  | 0.04 |
| Pput_1144 | 148546387 | succinylglutamate desuccinylase/aspartoacylase                          | 1  | 2  | 2  | 35   | 4.9  | 0.19 |
| Pput_1147 | 148546390 | penicillin amidase                                                      | 2  | 1  | 2  | 90   | 1.5  | 0.04 |
| Pput_1150 | 148546393 | synthetase, putative                                                    | 1  | 2  | 2  | 41   | 6.5  | 0.27 |
| Pput_1152 | 148546395 | pyridoxal-5~-phosphate-dependent enzyme, beta subunit                   | 3  | 3  | 4  | 157  | 10   | 0.38 |
| Pput_1154 | 148546397 | water stress/hypersensitive response protein                            | 2  | 1  | 1  | 54   | 7.2  | 0.2  |
| Pput_1155 | 148546398 | hypothetical protein Pput_1155                                          | 1  | 2  | 1  | 44   | 5.7  | 0.22 |
| Pput_1157 | 148546400 | OmpA/MotB domain-containing protein                                     | 16 | 3  | 9  | 1875 | 42.2 | 5.64 |
| Pput_1158 | 148546401 | OmpA/MotB domain-containing protein                                     | 13 | 1  | 2  | 440  | 8.4  | 0.15 |
| Pput_1163 | 148546406 | beta-lactamase                                                          | 1  | 1  | 1  | 30   | 3.1  | 0.08 |
| Pput_1165 | 148546408 | pyridoxamine 5~-phosphate oxidase                                       | 2  | 2  | 2  | 74   | 8.4  | 0.33 |
| Pput_1166 | 148546409 | hypothetical protein Pput_1166                                          | 1  | 1  | 1  | 25   | 9.1  | 0.45 |
| Pput_1167 | 148546410 | 17 kDa surface antigen                                                  | 12 | 4  | 9  | 2118 | 46.1 | 4.85 |
| Pput_1169 | 148546412 | FAD dependent oxidoreductase                                            | 1  | 1  | 1  | 25   | 1.7  | 0.06 |
| Pput_1171 | 148546414 | ABC transporter related                                                 | 4  | 5  | 5  | 350  | 24.5 | 1    |
| Pput_1172 | 148546415 | leucine/isoleucine/valine transporter ATP-binding subunit               | 4  | 4  | 5  | 267  | 12.5 | 0.65 |
| Pput_1173 | 148546416 | leucine/isoleucine/valine transporter permease subunit                  | 3  | 1  | 1  | 85   | 3.1  | 0.24 |
| Pput_1175 | 148546418 | extracellular ligand-binding receptor                                   | 3  | 1  | 3  | 112  | 4.3  | 0.09 |
| Pput_1177 | 148546420 | 3-hydroxyisobutyrate dehydrogenase                                      | 2  | 1  | 2  | 104  | 4.7  | 0.12 |
| Pput_1179 | 148546422 | ATP-dependent helicase HepA                                             | 9  | 8  | 11 | 638  | 8.4  | 0.31 |
| Pput_1180 | 148546423 | hypothetical protein Pput_1180                                          | 2  | 1  | 1  | 144  | 5.2  | 0.3  |
| Pput_1188 | 148546431 | diguanylate cyclase/phosphodiesterase with PAS/PAC and GAF sensor(s)    | 1  | 1  | 1  | 25   | 1.6  | 0.04 |
| Pput_1189 | 148546432 | diguanylate cyclase                                                     | 1  | 1  | 1  | 28   | 2.2  | 0.09 |
| Pput_1191 | 148546434 | acetolactate synthase                                                   | 13 | 3  | 8  | 1006 | 11.7 | 0.35 |
| Pput_1196 | 148546439 | glutathione S-transferase domain-containing protein                     | 2  | 2  | 2  | 142  | 12.4 | 0.37 |
| Pput_1198 | 148546441 | LysR family transcriptional regulator                                   | 1  | 1  | 1  | 51   | 4.4  | 0.12 |
| Pput_1199 | 148546442 | aldose 1-epimerase                                                      | 1  | 1  | 1  | 29   | 3.5  | 0.12 |
| Pput_1202 | 148546445 | tripartite ATP-independent periplasmic transporter DctQ                 | 1  | 1  | 1  | 34   | 5.1  | 0.2  |
| Pput_1209 | 148546452 | ribonucleotide-diphosphate reductase subunit beta                       | 4  | 2  | 3  | 226  | 5.5  | 0.16 |
| Pput_1210 | 148546453 | ribonucleotide-diphosphate reductase subunit alpha                      | 5  | 3  | 4  | 322  | 4    | 0.11 |
| Pput_1216 | 148546459 | two component transcriptional regulator                                 | 1  | 1  | 1  | 30   | 4.9  | 0.15 |
| Pput_1231 | 148546474 | hypothetical protein Pput_1231                                          | 1  | 1  | 1  | 32   | 1    | 0.04 |
| Pput_1234 | 148546477 | prolyl-tRNA synthetase                                                  | 2  | 5  | 7  | 214  | 9.6  | 0.33 |
| Pput_1235 | 148546478 | outer membrane porin                                                    | 47 | 37 | 22 | 6635 | 39.7 | 5.02 |
| Pput_1238 | 148546481 | cold-shock DNA-binding domain-containing protein                        | 3  | 2  | 5  | 195  | 16.8 | 0.39 |
| Pput_1239 | 148546482 | Ferritin, Dps family protein                                            | 5  | 4  | 5  | 430  | 29.9 | 1.2  |
| Pput_1242 | 148546485 | aspartyl-tRNA synthetase                                                | 16 | 6  | 13 | 908  | 15.6 | 0.63 |
| Pput_1243 | 148546486 | hypothetical protein Pput_1243                                          | 3  | 1  | 1  | 115  | 4.4  | 0.14 |
| Pput_1245 | 148546488 | Holliday junction DNA helicase RuvA                                     | 1  | 1  | 1  | 68   | 5.9  | 0.17 |
| Pput_1248 | 148546491 | Tol-Pal system, TolQ                                                    | 6  | 7  | 6  | 583  | 22.5 | 1.67 |
| Pput_1251 | 148546494 | translocation protein TolB                                              | 6  | 1  | 3  | 310  | 4.3  | 0.17 |
| Pput_1252 | 148546495 | peptidoglycan-associated lipoprotein                                    | 9  | 9  | 8  | 852  | 19.9 | 3.79 |
| Pput_1255 | 148546498 | exsB protein                                                            | 2  | 4  | 3  | 231  | 12.9 | 0.79 |
| Pput_1259 | 148546502 | hypothetical protein Pput_1259                                          | 1  | 1  | 1  | 27   | 1.2  | 0.07 |
| Pput_1260 | 148546503 | quinolinate synthetase                                                  | 1  | 1  | 1  | 48   | 2.6  | 0.1  |
| Pput_1266 | 148546509 | glycine cleavage system regulatory protein-like protein                 | 2  | 1  | 1  | 110  | 4.8  | 0.19 |
| Pput_1267 | 148546510 | dihydrodipicolinate synthase                                            | 3  | 1  | 1  | 123  | 3.7  | 0.12 |
| Pput_1268 | 148546511 | hypothetical protein Pput_1268                                          | 13 | 5  | 9  | 988  | 24.1 | 1.02 |
| Pput_1270 | 148546513 | phosphoribosylaminoimidazole-succinocarboxamide synthase                | 3  | 6  | 7  | 248  | 18.6 | 0.93 |
| Pput_1279 | 148546522 | malate:quinone oxidoreductase                                           | 1  | 1  | 1  | 30   | 3.7  | 0.06 |
| Pput_1281 | 148546524 | NADH:flavin oxidoreductase/NADH oxidase                                 | 6  | 8  | 7  | 691  | 21.2 | 0.87 |
| Pput_1284 | 148546527 | dihydrodipicolinate synthetase                                          | 1  | 1  | 1  | 29   | 3.5  | 0.11 |
| Pput_1294 | 148546537 | cystathionine gamma-lyase                                               | 3  | 1  | 4  | 139  | 7.6  | 0.29 |
| Pput_1296 | 148546539 | hypothetical protein Pput_1296                                          | 1  | 1  | 1  | 27   | 1.1  | 0.06 |
| Pput_1297 | 148546540 | ribonuclease D                                                          | 3  | 5  | 6  | 481  | 14.3 | 1.17 |
| Pput_1299 | 148546542 | D-isomer specific 2-hydroxyacid dehydrogenase, NAD-binding              | 1  | 1  | 1  | 38   | 3.9  | 0.11 |
| Pput_1300 | 148546543 | nitroreductase                                                          | 2  | 5  | 5  | 141  | 24.9 | 1.23 |
| Pput_1306 | 148546548 | oligopeptidase B                                                        | 2  | 1  | 1  | 84   | 1.3  | 0.1  |
| Pput_1307 | 148546549 | hypothetical protein Pput_1307                                          | 2  | 2  | 1  | 99   | 5.5  | 0.42 |
| Pput_1308 | 148546550 | glutamine amidotransferase, class-II                                    | 2  | 1  | 1  | 81   | 3.9  | 0.26 |
| Pput_1316 | 148546558 | ATPase                                                                  | 2  | 3  | 4  | 319  | 12.8 | 0.95 |
| Pput_1318 | 148546560 | cysteine synthase A                                                     | 3  | 4  | 5  | 402  | 16.4 | 1.06 |
| Pput_1319 | 148546561 | aspartyl/asparaginyl beta-hydroxylase                                   | 3  | 2  | 2  | 154  | 6.1  | 0.22 |
| Pput_1324 | 148546566 | bifunctional isocitrate dehydrogenase kinase/phosphatase protein        | 1  | 2  | 2  | 54   | 3.2  | 0.12 |
| Pput_1326 | 148546568 | RNA-binding S1 domain-containing protein                                | 2  | 1  | 2  | 63   | 6.5  | 0.12 |
| Pput_1330 | 148546572 | peptide deformylase                                                     | 2  | 2  | 2  | 78   | 11.2 | 0.42 |
| Pput_1338 | 148546580 | alpha/beta hydrolase fold                                               | 1  | 1  | 1  | 24   | 8    | 0.11 |
| Pput_1339 | 148546581 | acyl-CoA synthetase                                                     | 1  | 1  | 1  | 27   | 1.8  | 0.06 |
| Pput_1340 | 148546582 | acyl-CoA synthetase                                                     | 2  | 3  | 4  | 203  | 6    | 0.19 |
| Pput_1344 | 148546586 | ATP-dependent helicase HrpA                                             | 2  | 1  | 2  | 59   | 0.9  | 0.02 |
| Pput_1345 | 148546587 | 3-oxoacyl-(acyl carrier protein) synthase III                           | 2  | 3  | 4  | 216  | 9.7  | 0.29 |
| Pput_1347 | 148546589 | hypothetical protein Pput_1347                                          | 2  | 1  | 1  | 86   | 3.8  | 0.16 |
| Pput_1348 | 148546590 | ABC transporter related                                                 | 1  | 1  | 1  | 62   | 1.5  | 0.05 |
| Pput_1350 | 148546592 | alpha/beta hydrolase fold                                               | 2  | 1  | 1  | 76   | 3    | 0.12 |
| Pput_1351 | 148546593 | LysR family transcriptional regulator                                   | 2  | 5  | 4  | 200  | 14   | 0.69 |

|           |           |                                                                                              |    |    |    |      |      |      |
|-----------|-----------|----------------------------------------------------------------------------------------------|----|----|----|------|------|------|
| Pput_1353 | 148546595 | NAD(P)H dehydrogenase (quinone)                                                              | 1  | 1  | 1  | 45   | 8.3  | 0.17 |
| Pput_1366 | 148546606 | LysR family transcriptional regulator                                                        | 2  | 1  | 1  | 113  | 3.4  | 0.24 |
| Pput_1370 | 148546610 | transcriptional regulator IciR-like protein                                                  | 1  | 1  | 1  | 37   | 1    | 0.07 |
| Pput_1377 | 148546617 | MscS mechanosensitive ion channel                                                            | 3  | 1  | 1  | 81   | 2.5  | 0.08 |
| Pput_1378 | 148546618 | DEAD/DEAH box helicase domain-containing protein                                             | 10 | 3  | 3  | 590  | 6.4  | 0.24 |
| Pput_1388 | 148546628 | putative agmatinase                                                                          | 1  | 1  | 1  | 33   | 2.5  | 0.11 |
| Pput_1392 | 148546632 | TolC family type I secretion outer membrane protein                                          | 4  | 3  | 4  | 298  | 7.1  | 0.24 |
| Pput_1394 | 148546634 | yecA family protein                                                                          | 2  | 1  | 1  | 101  | 4.1  | 0.17 |
| Pput_1396 | 148546636 | MarR family transcriptional regulator                                                        | 1  | 2  | 2  | 88   | 17.2 | 0.52 |
| Pput_1403 | 148546643 | helix-turn-helix domain-containing protein                                                   | 1  | 2  | 2  | 40   | 6.5  | 0.2  |
| Pput_1404 | 148546644 | TrkH family potassium uptake protein                                                         | 1  | 1  | 1  | 27   | 1.7  | 0.07 |
| Pput_1405 | 148546645 | nitroreductase                                                                               | 9  | 7  | 6  | 809  | 27.6 | 2.43 |
| Pput_1406 | 148546646 | integral membrane sensor signal transduction histidine kinase                                | 1  | 1  | 1  | 43   | 2    | 0.08 |
| Pput_1407 | 148546647 | protein of unknown function, Spy-related                                                     | 5  | 9  | 7  | 501  | 46.4 | 4.85 |
| Pput_1408 | 148546648 | two component transcriptional regulator                                                      | 2  | 1  | 1  | 70   | 4.4  | 0.15 |
| Pput_1416 | 148546656 | RNA-binding S4 domain-containing protein                                                     | 1  | 1  | 1  | 27   | 3.4  | 0.09 |
| Pput_1419 | 148546659 | FAD linked oxidase domain-containing protein                                                 | 2  | 1  | 1  | 50   | 1    | 0.03 |
| Pput_1428 | 229328219 | acetyl-CoA synthetase                                                                        | 8  | 10 | 8  | 1128 | 13.3 | 0.65 |
| Pput_1430 | 148546670 | polar amino acid ABC transporter, inner membrane subunit                                     | 1  | 1  | 1  | 27   | 2.2  | 0.15 |
| Pput_1431 | 148546671 | polar amino acid ABC transporter, inner membrane subunit                                     | 1  | 1  | 1  | 33   | 3.4  | 0.14 |
| Pput_1432 | 148546672 | ABC transporter related                                                                      | 1  | 1  | 1  | 42   | 3.9  | 0.13 |
| Pput_1434 | 148546674 | bifunctional N-succinyldiaminopimelate-aminotransferase/acetylornithine transaminase protein | 3  | 1  | 1  | 107  | 2.2  | 0.09 |
| Pput_1436 | 148546676 | arginine N-succinyltransferase                                                               | 2  | 3  | 3  | 215  | 12.3 | 0.33 |
| Pput_1438 | 148546678 | succinylarginine dihydrolase                                                                 | 2  | 3  | 3  | 220  | 7.6  | 0.25 |
| Pput_1440 | 148546680 | succinylglutamate desuccinylase                                                              | 4  | 4  | 4  | 307  | 8.7  | 0.33 |
| Pput_1441 | 148546681 | alanyl-tRNA synthetase                                                                       | 37 | 3  | 13 | 2527 | 8.7  | 0.3  |
| Pput_1442 | 148546682 | aspartate kinase                                                                             | 17 | 1  | 11 | 1008 | 14.8 | 0.75 |
| Pput_1445 | 148546685 | Arc domain-containing protein                                                                | 5  | 1  | 3  | 186  | 14.3 | 0.77 |
| Pput_1446 | 148546686 | phosphonate metabolism protein/1,5-bisphosphokinase (PRPP-forming) PhnN                      | 2  | 1  | 1  | 105  | 5.6  | 0.36 |
| Pput_1450 | 148546690 | dihydrolipoamide dehydrogenase                                                               | 1  | 1  | 1  | 73   | 3.3  | 0.08 |
| Pput_1451 | 148546691 | branched-chain alpha-keto acid dehydrogenase subunit E2                                      | 5  | 1  | 5  | 213  | 5.9  | 0.17 |
| Pput_1452 | 148546692 | transketolase, central region                                                                | 3  | 1  | 1  | 206  | 3.4  | 0.2  |
| Pput_1454 | 148546694 | AsnC family transcriptional regulator                                                        | 1  | 1  | 1  | 35   | 7.5  | 0.21 |
| Pput_1457 | 148546697 | type IV pilus assembly PilZ                                                                  | 3  | 3  | 4  | 231  | 10.9 | 0.45 |
| Pput_1461 | 148546701 | putative CheW protein                                                                        | 2  | 1  | 2  | 99   | 3.6  | 0.11 |
| Pput_1462 | 148546702 | protein-glutamate O-methyltransferase                                                        | 1  | 1  | 1  | 34   | 4    | 0.12 |
| Pput_1472 | 148546711 | flagellar basal body P-ring protein                                                          | 1  | 1  | 1  | 39   | 2.7  | 0.1  |
| Pput_1481 | 148546720 | DegT/DnrJ/EryC1/StrS aminotransferase                                                        | 1  | 1  | 1  | 26   | 2    | 0.08 |
| Pput_1483 | 148546722 | N-acetylneuraminic acid synthase domain-containing protein                                   | 1  | 1  | 1  | 34   | 2.7  | 0.09 |
| Pput_1485 | 148546724 | FkbM family methyltransferase                                                                | 2  | 3  | 3  | 160  | 9    | 0.29 |
| Pput_1488 | 148546727 | Beta-ketoacyl-acyl-carrier-protein synthase I                                                | 3  | 3  | 3  | 240  | 10.3 | 0.38 |
| Pput_1489 | 148546728 | flagellin                                                                                    | 2  | 1  | 1  | 125  | 3.2  | 0.13 |
| Pput_1494 | 148546733 | sigma-54 dependent transcriptional regulator                                                 | 7  | 2  | 8  | 404  | 10   | 0.47 |
| Pput_1496 | 148546735 | two component, sigma54 specific, Fis family transcriptional regulator                        | 1  | 1  | 1  | 30   | 5.3  | 0.08 |
| Pput_1501 | 148546740 | flagellum-specific ATP synthase                                                              | 1  | 1  | 1  | 26   | 2.2  | 0.08 |
| Pput_1506 | 148546745 | flagellar hook-length control protein                                                        | 1  | 1  | 1  | 34   | 2.4  | 0.09 |
| Pput_1509 | 148546748 | flagellar motor switch protein                                                               | 1  | 1  | 1  | 32   | 6.5  | 0.24 |
| Pput_1525 | 148546764 | cobyrinic acid a,c-diamide synthase                                                          | 3  | 4  | 4  | 376  | 10.8 | 0.61 |
| Pput_1526 | 148546765 | flagellar biosynthesis sigma factor                                                          | 2  | 1  | 1  | 98   | 4.5  | 0.14 |
| Pput_1528 | 148546767 | chemotaxis phosphatase, CheZ                                                                 | 1  | 1  | 1  | 38   | 5.3  | 0.13 |
| Pput_1529 | 148546768 | CheA signal transduction histidine kinase                                                    | 1  | 1  | 1  | 29   | 1.2  | 0.05 |
| Pput_1530 | 148546769 | chemotaxis-specific methylesterase                                                           | 1  | 1  | 1  | 79   | 4.1  | 0.09 |
| Pput_1533 | 148546772 | cobyrinic acid a,c-diamide synthase                                                          | 1  | 1  | 1  | 38   | 5.7  | 0.13 |
| Pput_1535 | 148546774 | putative CheW protein                                                                        | 3  | 2  | 2  | 208  | 18.9 | 0.48 |
| Pput_1536 | 148546775 | hypothetical protein Pput_1536                                                               | 1  | 1  | 1  | 42   | 6.9  | 0.26 |
| Pput_1549 | 148546788 | hypothetical protein Pput_1549                                                               | 1  | 2  | 2  | 48   | 15.9 | 0.58 |
| Pput_1551 | 148546790 | D-isomer specific 2-hydroxyacid dehydrogenase, NAD-binding                                   | 1  | 1  | 1  | 28   | 4.5  | 0.11 |
| Pput_1552 | 148546791 | PhzF family phenazine biosynthesis protein                                                   | 1  | 1  | 1  | 26   | 8.8  | 0.13 |
| Pput_1556 | 148546795 | D-amino-acid dehydrogenase                                                                   | 2  | 1  | 1  | 60   | 2    | 0.09 |
| Pput_1565 | 148546803 | sulfate ABC transporter, periplasmic sulfate-binding protein                                 | 1  | 1  | 1  | 36   | 3    | 0.1  |
| Pput_1574 | 148546812 | TetR family transcriptional regulator                                                        | 2  | 1  | 2  | 81   | 7.9  | 0.36 |
| Pput_1585 | 148546823 | GntR family transcriptional regulator                                                        | 2  | 2  | 2  | 160  | 10.3 | 0.27 |
| Pput_1591 | 148546829 | GntR family transcriptional regulator                                                        | 2  | 6  | 7  | 179  | 26   | 1.33 |
| Pput_1593 | 148546831 | cell division protein ZipA                                                                   | 9  | 6  | 7  | 1049 | 26.6 | 1.64 |
| Pput_1594 | 148546832 | NAD-dependent DNA ligase LigA                                                                | 1  | 1  | 1  | 65   | 1.7  | 0.04 |
| Pput_1599 | 148546837 | DNA polymerase III subunits gamma and tau                                                    | 4  | 1  | 2  | 120  | 1.7  | 0.1  |
| Pput_1600 | 148546838 | hypothetical protein Pput_1600                                                               | 5  | 1  | 1  | 136  | 9.9  | 1.65 |
| Pput_1602 | 148546840 | adenine phosphoribosyltransferase                                                            | 1  | 1  | 1  | 55   | 4.9  | 0.19 |
| Pput_1603 | 148546841 | CRP/FNR family transcriptional regulator                                                     | 1  | 1  | 1  | 38   | 3.3  | 0.14 |
| Pput_1604 | 148546842 | coproporphyrinogen III oxidase                                                               | 5  | 6  | 6  | 390  | 14.1 | 0.5  |
| Pput_1605 | 148546843 | hypothetical protein Pput_1605                                                               | 1  | 1  | 1  | 27   | 4    | 0.18 |
| Pput_1609 | 148546847 | cytochrome c oxidase cbb3 type, accessory protein FixG                                       | 3  | 1  | 1  | 85   | 1.7  | 0.14 |
| Pput_1610 | 148546848 | cytochrome c oxidase, cbb3-type, subunit III                                                 | 1  | 1  | 1  | 28   | 2.8  | 0.1  |
| Pput_1612 | 148546850 | cytochrome c oxidase, cbb3-type, subunit II                                                  | 9  | 3  | 3  | 515  | 14.4 | 0.59 |
| Pput_1613 | 148546851 | cytochrome c oxidase, cbb3-type, subunit I                                                   | 13 | 1  | 1  | 653  | 2.5  | 0.28 |
| Pput_1617 | 148546855 | cytochrome c oxidase, cbb3-type, subunit II                                                  | 3  | 3  | 4  | 179  | 16.8 | 0.59 |
| Pput_1624 | 148546862 | peptide synthase                                                                             | 1  | 1  | 1  | 26   | 0.4  | 0.01 |
| Pput_1630 | 148546868 | aldehyde oxidase and xanthine dehydrogenase, molybdopterin binding                           | 1  | 1  | 1  | 48   | 1.1  | 0.04 |
| Pput_1640 | 148546878 | diaminobutyrate--2-oxoglutarate aminotransferase                                             | 1  | 1  | 1  | 26   | 3.7  | 0.07 |
| Pput_1650 | 148546888 | electron-transferring-flavoprotein dehydrogenase                                             | 2  | 3  | 3  | 214  | 5.4  | 0.19 |
| Pput_1651 | 148546889 | electron transfer flavoprotein, alpha/beta-subunit-like protein                              | 4  | 8  | 8  | 671  | 32.9 | 1.93 |
| Pput_1652 | 148546890 | electron transfer flavoprotein, alpha subunit-like protein                                   | 3  | 3  | 3  | 202  | 12   | 0.41 |
| Pput_1656 | 148546894 | GntR family transcriptional regulator                                                        | 1  | 1  | 1  | 43   | 2.4  | 0.07 |
| Pput_1660 | 148546898 | type II citrate synthase                                                                     | 23 | 7  | 10 | 1462 | 16.1 | 0.69 |
| Pput_1662 | 148546900 | succinate dehydrogenase, hydrophobic membrane anchor protein                                 | 56 | 3  | 2  | 3502 | 8.2  | 7.96 |
| Pput_1663 | 148546901 | succinate dehydrogenase flavoprotein subunit                                                 | 47 | 21 | 23 | 5910 | 32.2 | 1.93 |
| Pput_1664 | 148546902 | succinate dehydrogenase iron-sulfur subunit                                                  | 12 | 23 | 14 | 1617 | 44.9 | 5.46 |
| Pput_1665 | 148546903 | 2-oxoglutarate dehydrogenase E1 component                                                    | 60 | 22 | 28 | 7008 | 20   | 1.11 |
| Pput_1666 | 148546904 | dihydrolipoamide succinyltransferase                                                         | 20 | 11 | 16 | 1837 | 18.4 | 2.35 |

|           |           |                                                                    |    |    |    |      |      |      |
|-----------|-----------|--------------------------------------------------------------------|----|----|----|------|------|------|
| Pput_1667 | 148546905 | dihydrolipoamide dehydrogenase                                     | 40 | 2  | 19 | 4194 | 39.5 | 3.85 |
| Pput_1668 | 148546906 | succinyl-CoA synthetase subunit beta                               | 54 | 19 | 19 | 6396 | 39.4 | 3.74 |
| Pput_1669 | 148546907 | succinyl-CoA synthetase subunit alpha                              | 22 | 15 | 15 | 2587 | 42.9 | 4.13 |
| Pput_1674 | 148546912 | amino acid adenylation domain-containing protein                   | 2  | 1  | 2  | 51   | 0.2  | 0.01 |
| Pput_1675 | 148546913 | amino acid adenylation domain-containing protein                   | 3  | 1  | 2  | 86   | 1.1  | 0.06 |
| Pput_1676 | 148546914 | amino acid adenylation domain-containing protein                   | 1  | 1  | 1  | 25   | 0.2  | 0.01 |
| Pput_1678 | 148546916 | TonB-dependent siderophore receptor                                | 1  | 1  | 1  | 25   | 1.2  | 0.04 |
| Pput_1680 | 148546918 | amino acid adenylation domain-containing protein                   | 1  | 1  | 1  | 26   | 0.8  | 0.02 |
| Pput_1685 | 148546923 | RND family efflux transporter MFP subunit                          | 2  | 1  | 1  | 62   | 2.1  | 0.09 |
| Pput_1686 | 148546924 | hypothetical protein Pput_1686                                     | 8  | 4  | 3  | 1041 | 38.9 | 5.09 |
| Pput_1687 | 148546925 | thioesterase superfamily protein                                   | 1  | 1  | 1  | 27   | 5.7  | 0.22 |
| Pput_1689 | 148546927 | heat shock protein 90                                              | 39 | 2  | 22 | 3193 | 21.9 | 0.84 |
| Pput_1690 | 148546928 | dienelactone hydrolase                                             | 3  | 2  | 3  | 249  | 12.9 | 0.31 |
| Pput_1692 | 148546930 | amidohydrolase 2                                                   | 1  | 1  | 1  | 26   | 5.6  | 0.1  |
| Pput_1693 | 148546931 | 3-oxoacyl-(acyl carrier protein) synthase I                        | 19 | 6  | 8  | 1151 | 18.7 | 0.64 |
| Pput_1694 | 148546932 | 3-hydroxydecanoyl-(acyl carrier protein) dehydratase               | 6  | 3  | 4  | 455  | 22.2 | 1.09 |
| Pput_1698 | 148546936 | NAD(P)H-dependent glycerol-3-phosphate dehydrogenase               | 4  | 2  | 2  | 219  | 6.7  | 0.22 |
| Pput_1699 | 148546937 | hypothetical protein Pput_1699                                     | 1  | 1  | 1  | 25   | 8.7  | 0.31 |
| Pput_1703 | 148546941 | alpha/beta hydrolase fold                                          | 1  | 3  | 3  | 54   | 9.2  | 0.42 |
| Pput_1708 | 148546946 | potassium-transporting ATPase subunit B                            | 2  | 1  | 1  | 107  | 1.5  | 0.05 |
| Pput_1710 | 148546948 | osmosensitive K+ channel signal transduction histidine kinase      | 2  | 1  | 2  | 81   | 1    | 0.08 |
| Pput_1712 | 148546950 | LysR family transcriptional regulator                              | 1  | 2  | 2  | 73   | 9.6  | 0.24 |
| Pput_1713 | 148546951 | hypothetical protein Pput_1713                                     | 1  | 1  | 1  | 28   | 0.8  | 0.03 |
| Pput_1714 | 148546952 | TonB-dependent siderophore receptor                                | 3  | 1  | 7  | 264  | 7    | 0.32 |
| Pput_1721 | 148546959 | hydroxyacylglutathione hydrolase                                   | 1  | 1  | 1  | 46   | 4.6  | 0.13 |
| Pput_1725 | 148546963 | lysine decarboxylase                                               | 1  | 1  | 1  | 37   | 1.3  | 0.04 |
| Pput_1727 | 148546965 | NADPH-dependent FMN reductase                                      | 3  | 2  | 3  | 304  | 14   | 0.41 |
| Pput_1734 | 148546972 | NADH dehydrogenase subunit N                                       | 8  | 1  | 1  | 417  | 1.8  | 0.14 |
| Pput_1739 | 148546977 | NADH dehydrogenase subunit I                                       | 7  | 3  | 6  | 615  | 34.1 | 1.74 |
| Pput_1741 | 148546979 | NADH dehydrogenase subunit G                                       | 24 | 8  | 9  | 1792 | 8.7  | 0.34 |
| Pput_1742 | 148546980 | NADH dehydrogenase I subunit F                                     | 4  | 4  | 4  | 280  | 10.2 | 0.34 |
| Pput_1744 | 148546982 | bifunctional NADH:ubiquinone oxidoreductase subunit C/D            | 16 | 12 | 13 | 1441 | 20.7 | 0.9  |
| Pput_1745 | 148546983 | NADH dehydrogenase subunit B                                       | 2  | 7  | 6  | 316  | 27.6 | 1.62 |
| Pput_1748 | 148546986 | isocitrate lyase                                                   | 13 | 3  | 8  | 1016 | 13.4 | 0.44 |
| Pput_1750 | 148546988 | hypothetical protein Pput_1750                                     | 1  | 2  | 1  | 68   | 2    | 0.09 |
| Pput_1753 | 148546991 | elongation factor G                                                | 8  | 5  | 9  | 1059 | 7.8  | 0.26 |
| Pput_1758 | 148546996 | amino acid permease-associated region                              | 3  | 1  | 1  | 76   | 2.4  | 0.14 |
| Pput_1760 | 148546998 | glutathione S-transferase domain-containing protein                | 1  | 1  | 1  | 27   | 3.9  | 0.14 |
| Pput_1772 | 148547009 | putative prophage repressor                                        | 2  | 1  | 1  | 116  | 6    | 0.16 |
| Pput_1774 | 148547011 | carbamoyl-phosphate synthase L chain, ATP-binding                  | 3  | 4  | 5  | 186  | 6.5  | 0.23 |
| Pput_1775 | 148547012 | gamma-carboxygeranoyl-CoA hydratase                                | 2  | 2  | 3  | 209  | 8.9  | 0.27 |
| Pput_1776 | 148547013 | propionyl-CoA carboxylase                                          | 1  | 5  | 5  | 183  | 11.6 | 0.37 |
| Pput_1777 | 148547014 | acyl-CoA dehydrogenase domain-containing protein                   | 2  | 6  | 5  | 220  | 10.3 | 0.66 |
| Pput_1783 | 148547018 | alpha amylase, catalytic region                                    | 2  | 1  | 1  | 91   | 1.2  | 0.05 |
| Pput_1785 | 148547020 | glycogen branching enzyme                                          | 1  | 1  | 1  | 27   | 1.4  | 0.04 |
| Pput_1787 | 148547022 | endonuclease/exonuclease/phosphatase                               | 1  | 1  | 1  | 37   | 3    | 0.13 |
| Pput_1788 | 148547023 | glycogen debranching enzyme GlgX                                   | 1  | 2  | 2  | 65   | 2.8  | 0.09 |
| Pput_1791 | 148547026 | 4-alpha-glucanotransferase                                         | 1  | 1  | 1  | 44   | 1.3  | 0.05 |
| Pput_1795 | 148547030 | 6-phosphogluconate dehydrogenase-like protein                      | 3  | 4  | 3  | 339  | 8.9  | 0.35 |
| Pput_1796 | 148547031 | glucose-6-phosphate 1-dehydrogenase                                | 3  | 1  | 3  | 154  | 5.6  | 0.14 |
| Pput_1800 | 148547035 | dihydropyrimidine dehydrogenase                                    | 1  | 1  | 1  | 38   | 2.1  | 0.08 |
| Pput_1801 | 148547036 | putative oxidoreductase                                            | 2  | 1  | 1  | 64   | 2.5  | 0.07 |
| Pput_1802 | 148547037 | phenylhydantoinase                                                 | 2  | 3  | 3  | 135  | 6.7  | 0.22 |
| Pput_1804 | 148547039 | allantoate amidohydrolase                                          | 1  | 1  | 1  | 32   | 2.3  | 0.08 |
| Pput_1806 | 148547041 | Lipocalin family protein                                           | 8  | 2  | 5  | 456  | 17.7 | 0.94 |
| Pput_1808 | 148547043 | enoyl-CoA hydratase                                                | 2  | 4  | 4  | 235  | 16.8 | 0.59 |
| Pput_1812 | 148547047 | alpha/beta hydrolase fold                                          | 1  | 1  | 1  | 24   | 2.9  | 0.12 |
| Pput_1816 | 148547051 | cupin 4 family protein                                             | 1  | 1  | 1  | 85   | 4.1  | 0.08 |
| Pput_1817 | 148547052 | adenylosuccinate lyase                                             | 2  | 4  | 5  | 148  | 11.2 | 0.32 |
| Pput_1818 | 148547053 | hypothetical protein Pput_1818                                     | 2  | 1  | 2  | 52   | 6.7  | 0.16 |
| Pput_1819 | 148547054 | tRNA-specific 2-thiouridylase MnmA                                 | 2  | 1  | 2  | 74   | 3.2  | 0.09 |
| Pput_1820 | 148547055 | NUDIX hydrolase                                                    | 1  | 1  | 1  | 37   | 8.9  | 0.23 |
| Pput_1821 | 148547056 | isocitrate dehydrogenase, NADP-dependent                           | 12 | 1  | 9  | 720  | 9.1  | 0.3  |
| Pput_1822 | 148547057 | isocitrate dehydrogenase, NADP-dependent                           | 4  | 4  | 5  | 276  | 9.1  | 0.37 |
| Pput_1825 | 148547060 | ATP-dependent Clp protease, ATP-binding subunit clpA               | 1  | 5  | 5  | 231  | 7.3  | 0.24 |
| Pput_1826 | 148547061 | translation initiation factor IF-1                                 | 4  | 1  | 1  | 135  | 11.1 | 0.49 |
| Pput_1828 | 148547063 | leucyl/phenylalanyl-tRNA--protein transferase                      | 1  | 2  | 2  | 60   | 8    | 0.32 |
| Pput_1829 | 148547064 | cell divisionFtsK/SpoIIIE                                          | 1  | 1  | 1  | 28   | 1.1  | 0.04 |
| Pput_1833 | 148547068 | seryl-tRNA synthetase                                              | 9  | 3  | 3  | 490  | 5.6  | 0.26 |
| Pput_1834 | 148547069 | uroporphyrin-III C-methyltransferase                               | 2  | 5  | 5  | 332  | 13   | 0.44 |
| Pput_1835 | 148547070 | glutathione S-transferase-like protein                             | 1  | 1  | 1  | 54   | 3.4  | 0.1  |
| Pput_1838 | 148547073 | DsrH family protein                                                | 1  | 1  | 1  | 35   | 17.3 | 0.38 |
| Pput_1840 | 148547075 | sulfur transfer complex subunit TusD                               | 1  | 1  | 1  | 45   | 9.8  | 0.25 |
| Pput_1842 | 148547077 | hypothetical protein Pput_1842                                     | 1  | 1  | 1  | 60   | 8.5  | 0.16 |
| Pput_1847 | 148547081 | type III effector Hrp-dependent outer                              | 1  | 1  | 1  | 32   | 2.2  | 0.07 |
| Pput_1849 | 148547083 | pyruvate kinase                                                    | 6  | 1  | 1  | 244  | 2.5  | 0.42 |
| Pput_1877 | 148547107 | mandelate racemase/muconate lactonizing protein                    | 1  | 1  | 1  | 29   | 2.1  | 0.09 |
| Pput_1884 | 148547114 | glycoside hydrolase family protein                                 | 1  | 1  | 1  | 27   | 1.2  | 0.06 |
| Pput_1889 | 148547119 | aldehyde oxidase and xanthine dehydrogenase, molybdopterin binding | 1  | 1  | 1  | 25   | 0.7  | 0.03 |
| Pput_1913 | 148547143 | putative periplasmic protease                                      | 4  | 1  | 1  | 150  | 2.7  | 0.1  |
| Pput_1932 | 148547157 | alcohol dehydrogenase                                              | 8  | 6  | 5  | 1328 | 16.1 | 0.64 |
| Pput_1935 | 148547160 | PAS/PAC sensor signal transduction histidine kinase                | 1  | 2  | 2  | 86   | 6    | 0.18 |
| Pput_1938 | 148547163 | carbon storage regulator                                           | 3  | 1  | 1  | 136  | 23.1 | 1.16 |
| Pput_1943 | 148547168 | 2-nitropropane dioxygenase, NPD                                    | 1  | 1  | 1  | 47   | 3.3  | 0.1  |
| Pput_1945 | 148547170 | hypothetical protein Pput_1945                                     | 1  | 1  | 1  | 36   | 8    | 0.34 |
| Pput_1949 | 148547174 | UTP-glucose-1-phosphate uridylyltransferase                        | 3  | 2  | 3  | 190  | 12.2 | 0.41 |
| Pput_1950 | 148547175 | glutathione reductase                                              | 1  | 2  | 1  | 75   | 3.5  | 0.16 |
| Pput_1952 | 148547177 | ABC transporter related                                            | 3  | 1  | 3  | 101  | 3.1  | 0.09 |
| Pput_1955 | 148547180 | extracellular solute-binding protein                               | 3  | 1  | 1  | 86   | 2.1  | 0.1  |



|           |           |                                                                                         |    |    |    |      |      |      |
|-----------|-----------|-----------------------------------------------------------------------------------------|----|----|----|------|------|------|
| Pput_1956 | 148547181 | GTP cyclohydrolase II-like protein                                                      | 3  | 1  | 2  | 163  | 2.9  | 0.09 |
| Pput_1962 | 148547187 | thioesterase                                                                            | 1  | 1  | 1  | 27   | 6.7  | 0.14 |
| Pput_1963 | 148547188 | isochorismatase hydrolase                                                               | 1  | 2  | 2  | 62   | 13.1 | 0.43 |
| Pput_1991 | 148547213 | putative phage repressor                                                                | 1  | 2  | 2  | 55   | 6.9  | 0.24 |
| Pput_1998 | 148547220 | hypothetical protein Pput_1998                                                          | 5  | 6  | 4  | 363  | 24.6 | 2.11 |
| Pput_2000 | 148547222 | precorrin 6A synthase                                                                   | 2  | 1  | 2  | 57   | 3.6  | 0.14 |
| Pput_2002 | 148547224 | multi-sensor hybrid histidine kinase                                                    | 1  | 1  | 1  | 27   | 1.6  | 0.03 |
| Pput_2005 | 148547227 | response regulator receiver sensor signal transduction histidine kinase                 | 1  | 1  | 1  | 41   | 2.2  | 0.08 |
| Pput_2008 | 148547230 | 3-hydroxybutyryl-CoA dehydrogenase                                                      | 1  | 2  | 2  | 80   | 8.9  | 0.27 |
| Pput_2009 | 148547231 | beta-ketothiolase                                                                       | 1  | 4  | 4  | 120  | 14   | 0.42 |
| Pput_2017 | 148547239 | glycolate oxidase FAD binding subunit                                                   | 1  | 1  | 1  | 26   | 6.3  | 0.1  |
| Pput_2021 | 148547243 | glutathione S-transferase domain-containing protein                                     | 1  | 1  | 1  | 33   | 4.3  | 0.16 |
| Pput_2025 | 148547247 | GntR family transcriptional regulator                                                   | 2  | 2  | 2  | 109  | 9    | 0.3  |
| Pput_2029 | 148547251 | hypothetical protein Pput_2029                                                          | 1  | 1  | 1  | 27   | 1.2  | 0.04 |
| Pput_2033 | 148547255 | two component transcriptional regulator                                                 | 1  | 1  | 1  | 24   | 5.9  | 0.14 |
| Pput_2053 | 148547275 | muconate and chloromuconate cycloisomerase                                              | 1  | 1  | 1  | 26   | 2.4  | 0.09 |
| Pput_2054 | 148547276 | muconolactone Delta-isomerase                                                           | 1  | 1  | 1  | 25   | 14.6 | 0.36 |
| Pput_2061 | 148547283 | catalase/oxidase HPI                                                                    | 24 | 15 | 15 | 1575 | 20.9 | 0.94 |
| Pput_2066 | 148547288 | diguanylate cyclase                                                                     | 1  | 1  | 1  | 29   | 1.9  | 0.08 |
| Pput_2067 | 148547289 | hypothetical protein Pput_2067                                                          | 3  | 2  | 3  | 146  | 4.6  | 0.15 |
| Pput_2074 | 148547296 | outer membrane porin                                                                    | 2  | 2  | 2  | 166  | 5    | 0.17 |
| Pput_2079 | 148547301 | GAF sensor hybrid histidine kinase                                                      | 1  | 1  | 1  | 57   | 1.4  | 0.05 |
| Pput_2081 | 148547303 | GntR family transcriptional regulator                                                   | 3  | 5  | 6  | 214  | 20.8 | 0.87 |
| Pput_2084 | 148547306 | aldehyde dehydrogenase                                                                  | 3  | 1  | 1  | 86   | 2.2  | 0.07 |
| Pput_2087 | 148547309 | luciferase family protein                                                               | 1  | 1  | 1  | 83   | 3.8  | 0.1  |
| Pput_2102 | 148547323 | SH3 type 3 domain-containing protein                                                    | 1  | 1  | 1  | 29   | 4.6  | 0.16 |
| Pput_2110 | 148547331 | gluconate 2-dehydrogenase acceptor subunit                                              | 1  | 2  | 2  | 60   | 4.5  | 0.16 |
| Pput_2111 | 148547332 | aldehyde oxidase and xanthine dehydrogenase, molybdopterin binding                      | 3  | 6  | 6  | 260  | 9.2  | 0.31 |
| Pput_2113 | 148547334 | hypothetical protein Pput_2113                                                          | 2  | 1  | 1  | 84   | 1.2  | 0.1  |
| Pput_2140 | 148547361 | dihydrodipicolinate synthase                                                            | 4  | 3  | 6  | 388  | 21.5 | 0.58 |
| Pput_2150 | 148547371 | magnesium-translocating P-type ATPase                                                   | 3  | 1  | 1  | 91   | 1    | 0.08 |
| Pput_2155 | 148547376 | UspA domain-containing protein                                                          | 5  | 2  | 5  | 448  | 13.7 | 0.4  |
| Pput_2159 | 148547380 | hydratase/decarboxylase                                                                 | 1  | 1  | 1  | 26   | 5.4  | 0.14 |
| Pput_2164 | 148547385 | phosphate ABC transporter, periplasmic phosphate-binding protein                        | 1  | 2  | 2  | 68   | 6.1  | 0.22 |
| Pput_2167 | 148547388 | phosphate ABC transporter, ATPase subunit                                               | 2  | 1  | 1  | 82   | 5.7  | 0.13 |
| Pput_2173 | 148547394 | two component LuxR family transcriptional regulator                                     | 2  | 1  | 2  | 96   | 5    | 0.16 |
| Pput_2181 | 148547402 | malate/L-lactate dehydrogenase                                                          | 4  | 3  | 4  | 233  | 10.6 | 0.35 |
| Pput_2182 | 148547403 | aromatic amino acid aminotransferase                                                    | 7  | 5  | 5  | 680  | 12.8 | 0.51 |
| Pput_2183 | 148547404 | aromatic amino acid permease                                                            | 1  | 1  | 1  | 27   | 3.3  | 0.08 |
| Pput_2185 | 148547406 | redoxin domain-containing protein                                                       | 3  | 3  | 3  | 176  | 18.1 | 0.82 |
| Pput_2186 | 148547407 | RND family efflux transporter MFP subunit                                               | 1  | 1  | 1  | 61   | 2.1  | 0.08 |
| Pput_2187 | 148547408 | acriflavin resistance protein                                                           | 1  | 1  | 1  | 28   | 1    | 0.03 |
| Pput_2189 | 148547410 | RND efflux system outer membrane lipoprotein                                            | 4  | 1  | 3  | 133  | 2.6  | 0.07 |
| Pput_2193 | 148547414 | phosphoglucosyltransferase                                                              | 1  | 1  | 1  | 68   | 2.2  | 0.06 |
| Pput_2201 | 148547422 | flavoprotein involved in K+ transport-like protein                                      | 1  | 1  | 1  | 28   | 1.8  | 0.08 |
| Pput_2204 | 148547425 | carbohydrate-selective porin OprB                                                       | 1  | 1  | 1  | 25   | 2.1  | 0.08 |
| Pput_2205 | 148547426 | Pyrolo-quinoline quinone                                                                | 20 | 3  | 8  | 1123 | 5.6  | 0.18 |
| Pput_2216 | 148547437 | substrate-binding region of ABC-type glycine betaine transport system                   | 1  | 1  | 1  | 27   | 2.4  | 0.1  |
| Pput_2221 | 148547442 | acyl-CoA synthetase                                                                     | 2  | 1  | 1  | 115  | 2    | 0.12 |
| Pput_2224 | 148547445 | MarR family transcriptional regulator                                                   | 1  | 1  | 1  | 28   | 5.7  | 0.22 |
| Pput_2227 | 148547448 | short-chain dehydrogenase/reductase SDR                                                 | 2  | 3  | 3  | 183  | 16.9 | 0.5  |
| Pput_2228 | 148547449 | PAS/PAC sensor hybrid histidine kinase                                                  | 4  | 1  | 2  | 127  | 2.3  | 0.1  |
| Pput_2231 | 148547452 | cytochrome c oxidase cbb3 type, accessory protein FixG                                  | 1  | 1  | 1  | 30   | 1.5  | 0.07 |
| Pput_2234 | 148547455 | hydroxymethylglutaryl-CoA lyase                                                         | 2  | 1  | 2  | 163  | 9.4  | 0.25 |
| Pput_2239 | 148547460 | LysR family transcriptional regulator                                                   | 2  | 1  | 1  | 70   | 3.1  | 0.24 |
| Pput_2242 | 148547463 | lipid-binding START domain-containing protein                                           | 2  | 1  | 2  | 66   | 6.5  | 0.17 |
| Pput_2243 | 148547464 | hypothetical protein Pput_2243                                                          | 2  | 6  | 3  | 250  | 10.9 | 0.83 |
| Pput_2244 | 148547465 | coenzyme F420-dependent N5 N10-methylene tetrahydromethanopterin reductase-like protein | 1  | 1  | 1  | 27   | 2.2  | 0.07 |
| Pput_2247 | 148547468 | TetR family transcriptional regulator                                                   | 2  | 1  | 1  | 67   | 3.1  | 0.14 |
| Pput_2253 | 148547474 | hypothetical protein Pput_2253                                                          | 1  | 1  | 1  | 25   | 2.3  | 0.1  |
| Pput_2257 | 148547478 | hypothetical protein Pput_2257                                                          | 1  | 1  | 1  | 35   | 1.2  | 0.07 |
| Pput_2261 | 148547482 | hydantoinase B/oxoprolinase                                                             | 1  | 2  | 2  | 31   | 3.3  | 0.12 |
| Pput_2264 | 148547485 | branched-chain amino acid aminotransferase                                              | 10 | 2  | 5  | 784  | 19.5 | 0.79 |
| Pput_2268 | 148547489 | cobalamin biosynthesis protein CobW                                                     | 2  | 1  | 2  | 119  | 3.9  | 0.1  |
| Pput_2274 | 148547495 | peptidase U32                                                                           | 1  | 1  | 1  | 33   | 1.5  | 0.05 |
| Pput_2278 | 148547499 | LysR family transcriptional regulator                                                   | 1  | 1  | 1  | 32   | 2.6  | 0.11 |
| Pput_2279 | 148547500 | acyl-CoA dehydrogenase domain-containing protein                                        | 1  | 2  | 2  | 84   | 6    | 0.19 |
| Pput_2280 | 148547501 | enoyl-CoA hydratase/isomerase                                                           | 1  | 3  | 3  | 112  | 9.5  | 0.31 |
| Pput_2287 | 148547508 | response regulator receiver protein                                                     | 1  | 2  | 2  | 49   | 8    | 0.42 |
| Pput_2288 | 148547509 | type II secretion system protein E                                                      | 1  | 1  | 1  | 25   | 2.2  | 0.06 |
| Pput_2290 | 148547511 | hypothetical protein Pput_2290                                                          | 1  | 1  | 1  | 29   | 6.1  | 0.19 |
| Pput_2295 | 148547516 | type II secretion system protein G                                                      | 1  | 1  | 1  | 26   | 6.5  | 0.29 |
| Pput_2303 | 148547524 | hypothetical protein Pput_2303                                                          | 1  | 1  | 1  | 25   | 5.8  | 0.16 |
| Pput_2304 | 148547525 | FAD dependent oxidoreductase                                                            | 1  | 1  | 1  | 26   | 2.3  | 0.08 |
| Pput_2307 | 148547528 | hypothetical protein Pput_2307                                                          | 1  | 1  | 1  | 33   | 1.8  | 0.06 |
| Pput_2313 | 148547534 | hydrophobe/amphiphile efflux-1 (HAE1) family protein                                    | 1  | 1  | 1  | 26   | 0.8  | 0.03 |
| Pput_2314 | 148547535 | RND family efflux transporter MFP subunit                                               | 1  | 1  | 1  | 29   | 2.6  | 0.09 |
| Pput_2321 | 148547542 | aldehyde dehydrogenase                                                                  | 2  | 1  | 2  | 79   | 1.9  | 0.06 |
| Pput_2329 | 148547550 | 4-hydroxyphenylpyruvate dioxygenase                                                     | 10 | 13 | 15 | 1031 | 36.3 | 3.34 |
| Pput_2331 | 148547552 | ThiJ/Pfpl domain-containing protein                                                     | 1  | 2  | 2  | 58   | 6.6  | 0.32 |
| Pput_2335 | 148547556 | RND efflux system outer membrane lipoprotein                                            | 13 | 5  | 11 | 1309 | 16.3 | 0.96 |
| Pput_2336 | 148547557 | hydrophobe/amphiphile efflux-1 (HAE1) family protein                                    | 8  | 1  | 1  | 263  | 1    | 0.18 |
| Pput_2341 | 148547562 | integral membrane sensor signal transduction histidine kinase                           | 2  | 1  | 2  | 61   | 4.3  | 0.07 |
| Pput_2347 | 148547568 | LacI family transcriptional regulator                                                   | 1  | 1  | 1  | 57   | 3.2  | 0.1  |
| Pput_2348 | 148547569 | methyl-accepting chemotaxis sensory transducer                                          | 1  | 1  | 1  | 37   | 2    | 0.08 |
| Pput_2349 | 148547570 | Hpt sensor hybrid histidine kinase                                                      | 1  | 1  | 1  | 26   | 1    | 0.03 |
| Pput_2356 | 148547577 | Gcn5-related N-acetyltransferase                                                        | 1  | 1  | 1  | 37   | 6.9  | 0.21 |
| Pput_2358 | 148547579 | alpha/beta hydrolase fold                                                               | 2  | 1  | 1  | 91   | 3.8  | 0.12 |
| Pput_2359 | 148547580 | pirin domain-containing protein                                                         | 2  | 1  | 1  | 130  | 3.7  | 0.24 |

|           |           |                                                                      |    |    |    |      |      |      |
|-----------|-----------|----------------------------------------------------------------------|----|----|----|------|------|------|
| Pput_2367 | 148547588 | hypothetical protein Pput_2367                                       | 1  | 1  | 1  | 28   | 1.1  | 0.08 |
| Pput_2378 | 148547599 | regulatory protein, LacI                                             | 1  | 1  | 1  | 31   | 2.7  | 0.1  |
| Pput_2382 | 148547603 | gluconate 2-dehydrogenase                                            | 1  | 2  | 2  | 36   | 5    | 0.23 |
| Pput_2385 | 148547606 | surface antigen (D15)                                                | 2  | 1  | 2  | 53   | 1.5  | 0.04 |
| Pput_2387 | 148547608 | integral membrane sensor signal transduction histidine kinase        | 1  | 1  | 1  | 29   | 1.9  | 0.08 |
| Pput_2388 | 148547609 | aldo/keto reductase                                                  | 1  | 2  | 2  | 57   | 6    | 0.21 |
| Pput_2392 | 148547613 | LysR family transcriptional regulator                                | 1  | 1  | 1  | 43   | 3.4  | 0.11 |
| Pput_2412 | 148547633 | TonB-dependent siderophore receptor                                  | 2  | 3  | 5  | 248  | 5.3  | 0.15 |
| Pput_2419 | 148547639 | TonB-dependent siderophore receptor                                  | 3  | 1  | 2  | 89   | 1.4  | 0.05 |
| Pput_2423 | 148547643 | acriflavin resistance protein                                        | 1  | 1  | 1  | 29   | 1    | 0.03 |
| Pput_2425 | 148547645 | TetR family transcriptional regulator                                | 1  | 1  | 1  | 88   | 6.9  | 0.17 |
| Pput_2443 | 148547662 | hypothetical protein Pput_2443                                       | 5  | 6  | 6  | 502  | 39.2 | 3.51 |
| Pput_2460 | 148547677 | heat shock protein Hsp20                                             | 7  | 11 | 13 | 983  | 59.7 | 5.11 |
| Pput_2461 | 148547678 | hypothetical protein Pput_2461                                       | 1  | 1  | 1  | 27   | 3.7  | 0.14 |
| Pput_2463 | 148547680 | GCN5-related N-acetyltransferase                                     | 3  | 2  | 2  | 261  | 17.5 | 0.39 |
| Pput_2467 | 148547684 | beta-lactamase domain-containing protein                             | 1  | 1  | 1  | 58   | 3.1  | 0.07 |
| Pput_2469 | 148547686 | GCN5-related N-acetyltransferase                                     | 3  | 1  | 2  | 137  | 5.5  | 0.18 |
| Pput_2470 | 148547687 | UspA domain-containing protein                                       | 11 | 7  | 3  | 614  | 9.4  | 0.51 |
| Pput_2471 | 148547688 | CRP/FNR family transcriptional regulator                             | 1  | 1  | 1  | 28   | 2.9  | 0.12 |
| Pput_2474 | 148547691 | phenylacetic acid degradation protein PaaY                           | 1  | 1  | 1  | 45   | 7    | 0.18 |
| Pput_2475 | 148547692 | enoyl-CoA hydratase-isomerase                                        | 1  | 1  | 1  | 31   | 6.6  | 0.14 |
| Pput_2476 | 148547693 | enoyl-CoA hydratase                                                  | 4  | 1  | 2  | 220  | 5.7  | 0.26 |
| Pput_2477 | 148547694 | 3-hydroxy-acyl-CoA dehydrogenase                                     | 2  | 1  | 2  | 58   | 1.8  | 0.07 |
| Pput_2479 | 148547696 | beta-ketoadipyl CoA thiolase                                         | 6  | 7  | 7  | 489  | 13.8 | 1.32 |
| Pput_2480 | 148547697 | phenylacetate-CoA ligase                                             | 1  | 1  | 1  | 29   | 2.7  | 0.07 |
| Pput_2481 | 148547698 | phenylacetate-CoA oxygenase subunit PaaA                             | 1  | 1  | 1  | 30   | 4.6  | 0.1  |
| Pput_2483 | 148547700 | phenylacetate-CoA oxygenase, PaaI subunit                            | 3  | 2  | 2  | 140  | 4    | 0.42 |
| Pput_2485 | 148547702 | phenylacetate-CoA oxygenase/reductase, PaaK subunit                  | 2  | 1  | 1  | 80   | 2.2  | 0.18 |
| Pput_2488 | 148547705 | outer membrane porin                                                 | 1  | 2  | 2  | 76   | 6.8  | 0.17 |
| Pput_2489 | 148547706 | bifunctional aldehyde dehydrogenase/enoyl-CoA hydratase              | 32 | 16 | 14 | 3984 | 21.2 | 1.1  |
| Pput_2493 | 148547710 | peptidase S14, ClpP                                                  | 2  | 1  | 1  | 86   | 4.9  | 0.19 |
| Pput_2500 | 148547717 | hypothetical protein Pput_2500                                       | 1  | 1  | 1  | 26   | 9.7  | 0.23 |
| Pput_2506 | 148547723 | Ku family containing protein                                         | 1  | 1  | 1  | 28   | 3.3  | 0.12 |
| Pput_2524 | 148547741 | YheO domain-containing protein                                       | 1  | 1  | 1  | 62   | 7    | 0.17 |
| Pput_2527 | 148547744 | N-isopropylammelide isopropylaminohydrolase                          | 2  | 1  | 2  | 90   | 2.4  | 0.08 |
| Pput_2531 | 148547748 | TenA family transcription regulator                                  | 2  | 1  | 2  | 133  | 5.7  | 0.14 |
| Pput_2532 | 148547749 | multicopper oxidase, type 2                                          | 6  | 1  | 2  | 180  | 1.2  | 0.03 |
| Pput_2533 | 148547750 | electron transport protein SCO1/SenC                                 | 1  | 1  | 1  | 31   | 3.1  | 0.1  |
| Pput_2542 | 148547759 | aldo/keto reductase                                                  | 4  | 5  | 7  | 337  | 12.8 | 0.47 |
| Pput_2544 | 148547761 | luciferase family protein                                            | 5  | 3  | 3  | 237  | 7.7  | 0.35 |
| Pput_2553 | 148547770 | benzoate 1,2-dioxygenase                                             | 2  | 1  | 1  | 71   | 5.6  | 0.4  |
| Pput_2557 | 148547774 | histidinol-phosphate phosphatase, putative                           | 1  | 1  | 1  | 28   | 4.9  | 0.13 |
| Pput_2558 | 148547775 | UspA domain-containing protein                                       | 3  | 5  | 3  | 261  | 9.5  | 0.54 |
| Pput_2559 | 148547776 | TonB-dependent siderophore receptor                                  | 2  | 1  | 3  | 69   | 3.1  | 0.1  |
| Pput_2560 | 148547777 | hypothetical protein Pput_2560                                       | 4  | 3  | 3  | 321  | 18.5 | 0.77 |
| Pput_2566 | 148547783 | glutamate--putrescine ligase                                         | 2  | 1  | 2  | 63   | 2.2  | 0.07 |
| Pput_2569 | 148547786 | hypothetical protein Pput_2569                                       | 9  | 1  | 3  | 421  | 10.7 | 0.78 |
| Pput_2572 | 148547789 | undecaprenyl-phosphate galactose phosphotransferase                  | 1  | 1  | 1  | 27   | 1.9  | 0.07 |
| Pput_2573 | 148547790 | WecB/TagA/CpsF family glycosyl transferase                           | 1  | 1  | 1  | 27   | 4    | 0.13 |
| Pput_2574 | 148547791 | glycosyl transferase family protein                                  | 3  | 3  | 2  | 201  | 6.1  | 0.36 |
| Pput_2575 | 148547792 | glycosyl transferase, group 1                                        | 3  | 3  | 3  | 209  | 7.8  | 0.26 |
| Pput_2589 | 148547806 | hypothetical protein Pput_2589                                       | 3  | 5  | 7  | 574  | 21   | 0.85 |
| Pput_2606 | 148547823 | short-chain dehydrogenase/reductase SDR                              | 1  | 1  | 1  | 29   | 3.6  | 0.13 |
| Pput_2614 | 148547831 | hypothetical protein Pput_2614                                       | 1  | 2  | 2  | 52   | 9.6  | 0.35 |
| Pput_2617 | 148547834 | hypothetical protein Pput_2617                                       | 1  | 1  | 1  | 28   | 4.1  | 0.18 |
| Pput_2623 | 148547839 | hypothetical protein Pput_2623                                       | 2  | 1  | 1  | 93   | 2.2  | 0.07 |
| Pput_2627 | 148547843 | ATPase                                                               | 5  | 1  | 1  | 166  | 0.9  | 0.04 |
| Pput_2634 | 148547850 | hypothetical protein Pput_2634                                       | 4  | 3  | 3  | 239  | 14.5 | 0.76 |
| Pput_2635 | 148547851 | ImpA domain-containing protein                                       | 1  | 1  | 1  | 36   | 2.8  | 0.09 |
| Pput_2638 | 148547854 | secretion protein HlyD family protein                                | 1  | 1  | 1  | 26   | 3.2  | 0.09 |
| Pput_2646 | 148547862 | extracellular solute-binding protein                                 | 1  | 1  | 1  | 29   | 1.2  | 0.05 |
| Pput_2647 | 148547863 | binding-protein-dependent transport systems inner membrane component | 1  | 1  | 1  | 27   | 2    | 0.1  |
| Pput_2653 | 148547869 | acetoacetyl-CoA synthetase                                           | 2  | 2  | 3  | 115  | 3.2  | 0.1  |
| Pput_2654 | 148547870 | PpiC-type peptidyl-prolyl cis-trans isomerase                        | 1  | 1  | 1  | 28   | 9.9  | 0.39 |
| Pput_2659 | 148547875 | metallophosphoesterase                                               | 1  | 2  | 2  | 75   | 10   | 0.3  |
| Pput_2660 | 148547876 | Nitrilase/cyanide hydratase and apolipoprotein N-acyltransferase     | 2  | 1  | 1  | 102  | 4    | 0.28 |
| Pput_2665 | 148547881 | acyl-CoA dehydrogenase domain-containing protein                     | 1  | 1  | 1  | 31   | 1    | 0.06 |
| Pput_2671 | 148547887 | helix-turn-helix domain-containing protein                           | 1  | 1  | 1  | 39   | 3.2  | 0.1  |
| Pput_2690 | 148547906 | 3-dehydroquinate dehydratase                                         | 1  | 1  | 1  | 25   | 6.9  | 0.24 |
| Pput_2702 | 148547918 | MerR family transcriptional regulator                                | 1  | 1  | 1  | 28   | 8.2  | 0.22 |
| Pput_2703 | 148547919 | short-chain dehydrogenase/reductase SDR                              | 1  | 2  | 2  | 94   | 7.2  | 0.29 |
| Pput_2710 | 148547926 | alcohol dehydrogenase                                                | 2  | 1  | 2  | 91   | 3.6  | 0.11 |
| Pput_2725 | 148547941 | meta-pathway phenol degradation-like protein                         | 6  | 1  | 1  | 162  | 5.2  | 0.12 |
| Pput_2728 | 148547944 | nitrile hydratase, alpha subunit                                     | 1  | 1  | 1  | 30   | 5.2  | 0.18 |
| Pput_2729 | 148547945 | nitrile hydratase                                                    | 1  | 1  | 1  | 26   | 3.6  | 0.15 |
| Pput_2731 | 148547947 | methyl-accepting chemotaxis sensory transducer                       | 1  | 2  | 2  | 75   | 4.2  | 0.16 |
| Pput_2733 | 148547949 | GntR family transcriptional regulator                                | 1  | 1  | 1  | 32   | 1.5  | 0.07 |
| Pput_2735 | 148547951 | two component transcriptional regulator                              | 3  | 1  | 3  | 149  | 9.6  | 0.34 |
| Pput_2738 | 148547954 | oxidoreductase FAD/NAD(P)-binding subunit                            | 1  | 1  | 1  | 27   | 2.1  | 0.05 |
| Pput_2745 | 148547961 | response regulator receiver protein                                  | 2  | 1  | 2  | 58   | 2.4  | 0.07 |
| Pput_2751 | 148547967 | diaminopimelate epimerase                                            | 1  | 1  | 1  | 32   | 3.4  | 0.13 |
| Pput_2755 | 148547970 | ABC transporter related                                              | 1  | 1  | 1  | 27   | 2.8  | 0.06 |
| Pput_2758 | 148547973 | putative glutathione S-transferase YghU                              | 3  | 2  | 2  | 266  | 11.8 | 0.26 |
| Pput_2760 | 148547974 | amidase                                                              | 1  | 2  | 2  | 62   | 3.5  | 0.13 |
| Pput_2765 | 148547979 | methyltransferase type 12                                            | 1  | 2  | 2  | 84   | 6.3  | 0.21 |
| Pput_2774 | 148547988 | trehalose synthase                                                   | 2  | 2  | 2  | 65   | 2.6  | 0.1  |
| Pput_2775 | 148547989 | riboflavin synthase subunit alpha                                    | 1  | 1  | 1  | 39   | 4.8  | 0.17 |
| Pput_2777 | 148547991 | proline/glycine betaine transporter                                  | 2  | 1  | 1  | 112  | 2.6  | 0.07 |
| Pput_2778 | 148547992 | delta-aminolevulinic acid dehydratase                                | 6  | 10 | 11 | 787  | 22.5 | 1.48 |

|           |           |                                                                                         |    |    |    |       |      |        |
|-----------|-----------|-----------------------------------------------------------------------------------------|----|----|----|-------|------|--------|
| Pput_2783 | 148547997 | DNA-binding transcriptional regulator CsiR                                              | 1  | 1  | 1  | 30    | 8.3  | 0.12   |
| Pput_2784 | 148547998 | two component transcriptional regulator                                                 | 2  | 5  | 4  | 249   | 15   | 0.76   |
| Pput_2786 | 148548000 | cysteinyl-tRNA synthetase                                                               | 2  | 2  | 2  | 85    | 3.3  | 0.15   |
| Pput_2787 | 148548001 | glutaminyl-tRNA synthetase                                                              | 6  | 6  | 8  | 558   | 11.5 | 0.47   |
| Pput_2788 | 148548002 | peptidyl-prolyl cis-trans isomerase, cyclophilin type                                   | 4  | 5  | 6  | 356   | 22.4 | 1.25   |
| Pput_2790 | 148548004 | peptidase S45, penicillin amidase                                                       | 1  | 1  | 1  | 32    | 1    | 0.04   |
| Pput_2799 | 148548013 | GCN5-related N-acetyltransferase                                                        | 2  | 1  | 1  | 76    | 4.2  | 0.3    |
| Pput_2800 | 148548014 | exonuclease III                                                                         | 1  | 2  | 2  | 47    | 6.7  | 0.26   |
| Pput_2806 | 148548020 | XRE family transcriptional regulator                                                    | 3  | 1  | 3  | 93    | 6.1  | 0.19   |
| Pput_2808 | 148548022 | DSBA oxidoreductase                                                                     | 2  | 1  | 2  | 63    | 4.4  | 0.17   |
| Pput_2821 | 148548035 | XRE family transcriptional regulator                                                    | 1  | 1  | 1  | 85    | 11.1 | 0.17   |
| Pput_2822 | 148548036 | FAD-dependent pyridine nucleotide-disulphide oxidoreductase                             | 2  | 2  | 2  | 149   | 5.3  | 0.36   |
| Pput_2823 | 148548037 | azoreductase                                                                            | 3  | 3  | 4  | 167   | 15.3 | 0.64   |
| Pput_2824 | 148548038 | LysR family transcriptional regulator                                                   | 1  | 1  | 1  | 49    | 3    | 0.11   |
| Pput_2828 | 148548042 | methyl-accepting chemotaxis sensory transducer                                          | 1  | 2  | 2  | 71    | 3.7  | 0.13   |
| Pput_2836 | 148548050 | hypothetical protein Pput_2836                                                          | 1  | 1  | 1  | 39    | 2.8  | 0.08   |
| Pput_2838 | 148548052 | protein of unknown function DUF899, thioredoxin family protein                          | 2  | 3  | 4  | 114   | 12   | 0.46   |
| Pput_2840 | 148548054 | urease accessory protein UreG                                                           | 1  | 1  | 1  | 44    | 5.3  | 0.17   |
| Pput_2843 | 148548057 | urease accessory protein UreE                                                           | 1  | 1  | 1  | 47    | 7.2  | 0.21   |
| Pput_2844 | 148548058 | urease subunit alpha                                                                    | 1  | 1  | 1  | 30    | 1.8  | 0.06   |
| Pput_2848 | 148548062 | phage integrase family protein                                                          | 1  | 1  | 1  | 27    | 2.3  | 0.11   |
| Pput_2862 | 148548076 | alcohol dehydrogenase                                                                   | 8  | 3  | 2  | 325   | 5    | 0.42   |
| Pput_2863 | 148548077 | LysR family transcriptional regulator                                                   | 2  | 4  | 5  | 154   | 15.5 | 0.54   |
| Pput_2867 | 148548080 | RND family efflux transporter MFP subunit                                               | 1  | 2  | 2  | 78    | 3.5  | 0.18   |
| Pput_2868 | 148548081 | hydrophobe/amphiphile efflux-1 (HAE1) family protein                                    | 1  | 1  | 1  | 43    | 1.1  | 0.03   |
| Pput_2869 | 148548082 | RND efflux system outer membrane lipoprotein                                            | 2  | 1  | 2  | 79    | 2.3  | 0.07   |
| Pput_2870 | 148548083 | hypothetical protein Pput_2870                                                          | 1  | 1  | 1  | 25    | 12.1 | 0.61   |
| Pput_2871 | 148548084 | response regulator receiver protein                                                     | 1  | 1  | 1  | 71    | 5.3  | 0.16   |
| Pput_2872 | 148548085 | multi-sensor signal transduction histidine kinase                                       | 3  | 2  | 2  | 175   | 1.8  | 0.07   |
| Pput_2873 | 148548086 | 4-hydroxy-2-ketovaleate aldolase                                                        | 73 | 16 | 17 | 8565  | 27   | 3.02   |
| Pput_2874 | 148548087 | acetaldehyde dehydrogenase                                                              | 70 | 23 | 17 | 12652 | 36.1 | 11.74  |
| Pput_2875 | 148548088 | 4-oxalocrotonate decarboxylase                                                          | 35 | 69 | 23 | 9372  | 88.1 | 42.37  |
| Pput_2876 | 148548089 | glyoxalase/bleomycin resistance protein/dioxygenase                                     | 24 | 13 | 11 | 3820  | 21.3 | 1.42   |
| Pput_2877 | 148548090 | 2,3-dihydroxy-2,3-dihydrophenylpropionate dehydrogenase                                 | 41 | 6  | 23 | 6689  | 71.3 | 34.73  |
| Pput_2878 | 148548091 | FAD-dependent pyridine nucleotide-disulphide oxidoreductase                             | 65 | 11 | 24 | 16087 | 51   | 7.69   |
| Pput_2879 | 148548092 | Rieske (2Fe-2S) domain-containing protein                                               | 6  | 1  | 2  | 248   | 16.8 | 1.32   |
| Pput_2880 | 148548093 | toluene dioxygenase                                                                     | 40 | 96 | 18 | 11627 | 51.3 | 322.57 |
| Pput_2881 | 148548094 | ring hydroxylating dioxygenase, alpha subunit                                           | 74 | 17 | 27 | 24762 | 48   | 13.42  |
| Pput_2882 | 148548095 | alpha/beta hydrolase fold                                                               | 41 | 31 | 16 | 4813  | 48.6 | 19.4   |
| Pput_2883 | 148548096 | membrane protein involved in aromatic hydrocarbon degradation                           | 3  | 1  | 2  | 100   | 5.1  | 0.16   |
| Pput_2888 | 148548100 | 4-hydroxy-2-ketovaleate aldolase                                                        | 64 | 24 | 11 | 7072  | 22.3 | 1.8    |
| Pput_2889 | 148548101 | acetaldehyde dehydrogenase                                                              | 45 | 4  | 14 | 8595  | 37.6 | 6.73   |
| Pput_2890 | 148548102 | 4-oxalocrotonate decarboxylase                                                          | 8  | 3  | 9  | 1406  | 49.6 | 3.01   |
| Pput_2891 | 148548103 | alpha/beta hydrolase fold                                                               | 45 | 41 | 17 | 7765  | 45.1 | 7.98   |
| Pput_2893 | 148548105 | class II aldolase/adducin family protein                                                | 9  | 12 | 10 | 999   | 37.4 | 3.36   |
| Pput_2894 | 148548106 | Rieske (2Fe-2S) domain-containing protein                                               | 1  | 1  | 1  | 28    | 11.9 | 0.3    |
| Pput_2895 | 148548107 | short-chain dehydrogenase/reductase SDR                                                 | 34 | 9  | 12 | 4335  | 52.9 | 4.36   |
| Pput_2896 | 148548108 | glyoxalase/bleomycin resistance protein/dioxygenase                                     | 32 | 3  | 13 | 2804  | 34   | 2.04   |
| Pput_2897 | 148548109 | aromatic-ring-hydroxylating dioxygenase, beta subunit                                   | 24 | 5  | 9  | 2979  | 41.1 | 5.4    |
| Pput_2898 | 148548110 | ring hydroxylating dioxygenase, alpha subunit                                           | 42 | 16 | 12 | 4287  | 23.3 | 1.77   |
| Pput_2899 | 148548111 | FAD-dependent pyridine nucleotide-disulphide oxidoreductase                             | 23 | 17 | 18 | 2081  | 36.1 | 3.08   |
| Pput_2900 | 148548112 | propionyl-CoA synthetase                                                                | 56 | 10 | 21 | 5457  | 22.5 | 1.36   |
| Pput_2901 | 148548113 | membrane protein involved in aromatic hydrocarbon degradation                           | 17 | 10 | 9  | 2004  | 22   | 0.94   |
| Pput_2902 | 148548114 | oxidoreductase FAD-binding subunit                                                      | 32 | 4  | 11 | 2404  | 24.1 | 1.77   |
| Pput_2903 | 148548115 | fatty acid desaturase                                                                   | 31 | 4  | 9  | 2920  | 15.2 | 0.65   |
| Pput_2904 | 148548116 | aldehyde dehydrogenase                                                                  | 74 | 10 | 24 | 14331 | 42.1 | 5.6    |
| Pput_2905 | 148548117 | short-chain dehydrogenase/reductase SDR                                                 | 22 | 6  | 9  | 1875  | 33.7 | 1.58   |
| Pput_2906 | 148548118 | dienelactone hydrolase                                                                  | 4  | 3  | 5  | 412   | 15.5 | 0.55   |
| Pput_2908 | 148548120 | TetR family transcriptional regulator                                                   | 3  | 1  | 3  | 195   | 10.7 | 0.35   |
| Pput_2921 | 148548132 | hypothetical protein Pput_2921                                                          | 1  | 1  | 1  | 27    | 9.2  | 0.4    |
| Pput_2948 | 148548158 | Type IV secretory pathway VirB4 components-like protein                                 | 2  | 1  | 1  | 72    | 1.4  | 0.08   |
| Pput_2952 | 148548162 | hypothetical protein Pput_2952                                                          | 1  | 1  | 1  | 25    | 4.1  | 0.14   |
| Pput_2960 | 148548170 | hypothetical protein Pput_2960                                                          | 1  | 1  | 1  | 58    | 12.4 | 0.29   |
| Pput_2968 | 148548178 | RND efflux transporter                                                                  | 1  | 1  | 1  | 31    | 0.6  | 0.04   |
| Pput_2974 | 148548184 | Beta-ketoacyl synthase-like protein                                                     | 1  | 1  | 1  | 30    | 3    | 0.09   |
| Pput_2989 | 148548199 | luciferase family protein                                                               | 1  | 1  | 1  | 29    | 1.9  | 0.09   |
| Pput_2994 | 148548204 | ABC transporter related                                                                 | 1  | 1  | 1  | 31    | 2    | 0.07   |
| Pput_2997 | 148548207 | hypothetical protein Pput_2997                                                          | 1  | 1  | 1  | 26    | 9.4  | 0.29   |
| Pput_3002 | 148548212 | ABC-type branched-chain amino acid transport systems periplasmic component-like protein | 3  | 1  | 1  | 88    | 2.8  | 0.07   |
| Pput_3007 | 148548217 | hypothetical protein Pput_3007                                                          | 1  | 1  | 1  | 30    | 1.9  | 0.07   |
| Pput_3008 | 148548218 | UspA domain-containing protein                                                          | 1  | 1  | 1  | 32    | 3    | 0.11   |
| Pput_3013 | 148548223 | MerR family transcriptional regulator                                                   | 1  | 1  | 1  | 59    | 3.1  | 0.12   |
| Pput_3014 | 148548224 | putative PAS/PAC sensor protein                                                         | 1  | 1  | 1  | 30    | 10.8 | 0.22   |
| Pput_3022 | 148548232 | deoxyribodipyrimidine photolyase-related protein                                        | 1  | 1  | 1  | 30    | 1.8  | 0.06   |
| Pput_3024 | 148548234 | hypothetical protein Pput_3024                                                          | 1  | 1  | 1  | 82    | 6.2  | 0.19   |
| Pput_3027 | 148548237 | short-chain dehydrogenase/reductase SDR                                                 | 1  | 1  | 1  | 29    | 3.1  | 0.14   |
| Pput_3038 | 148548248 | integral membrane sensor signal transduction histidine kinase                           | 2  | 2  | 3  | 186   | 5.9  | 0.15   |
| Pput_3039 | 148548249 | two component transcriptional regulator                                                 | 2  | 1  | 2  | 87    | 6.4  | 0.15   |
| Pput_3041 | 148548251 | short chain dehydrogenase                                                               | 11 | 12 | 13 | 1193  | 47   | 2.81   |
| Pput_3042 | 148548252 | hypothetical protein Pput_3042                                                          | 5  | 4  | 4  | 627   | 20.4 | 1.01   |
| Pput_3043 | 148548253 | AMP-dependent synthetase and ligase                                                     | 4  | 7  | 8  | 413   | 14.5 | 0.61   |
| Pput_3044 | 148548254 | hypothetical protein Pput_3044                                                          | 4  | 3  | 4  | 521   | 19.9 | 0.54   |
| Pput_3051 | 148548261 | LysR family transcriptional regulator                                                   | 1  | 1  | 1  | 28    | 3.2  | 0.11   |
| Pput_3058 | 148548268 | aldehyde dehydrogenase                                                                  | 1  | 1  | 1  | 41    | 2.3  | 0.07   |
| Pput_3079 | 148548289 | PAS/PAC sensor hybrid histidine kinase                                                  | 1  | 2  | 2  | 40    | 3.2  | 0.12   |
| Pput_3083 | 148548293 | aldehyde dehydrogenase                                                                  | 7  | 14 | 11 | 1223  | 27.3 | 1.5    |
| Pput_3084 | 148548294 | Pyrrolo-quinoline quinone                                                               | 1  | 1  | 1  | 51    | 2.4  | 0.06   |
| Pput_3086 | 148548296 | hypothetical protein Pput_3086                                                          | 1  | 1  | 1  | 26    | 3.2  | 0.14   |
| Pput_3091 | 148548301 | two component LuxR family transcriptional regulator                                     | 2  | 1  | 2  | 94    | 5.2  | 0.16   |

|           |           |                                                                                         |    |    |    |       |      |        |
|-----------|-----------|-----------------------------------------------------------------------------------------|----|----|----|-------|------|--------|
| Pput_3093 | 148548303 | ABC-type branched-chain amino acid transport systems periplasmic component-like protein | 1  | 1  | 1  | 26    | 2.5  | 0.09   |
| Pput_3095 | 148548305 | ABC transporter related                                                                 | 5  | 4  | 6  | 388   | 26   | 1.18   |
| Pput_3102 | 148548312 | GntR domain-containing protein                                                          | 3  | 10 | 10 | 511   | 32.5 | 2.64   |
| Pput_3108 | 148548318 | hypothetical protein Pput_3108                                                          | 2  | 1  | 2  | 89    | 7.3  | 0.18   |
| Pput_3109 | 148548319 | TonB-dependent siderophore receptor                                                     | 2  | 6  | 6  | 374   | 9.4  | 0.32   |
| Pput_3124 | 148548334 | IclR family transcriptional regulator                                                   | 1  | 2  | 1  | 45    | 3.9  | 0.14   |
| Pput_3126 | 148548336 | metal dependent phosphohydrolase                                                        | 1  | 1  | 1  | 26    | 0.8  | 0.03   |
| Pput_3128 | 148548338 | putative aminotransferase                                                               | 1  | 1  | 1  | 29    | 2    | 0.07   |
| Pput_3133 | 148548343 | GCN5-related N-acetyltransferase                                                        | 2  | 1  | 1  | 77    | 5.5  | 0.21   |
| Pput_3134 | 148548344 | heme oxygenase                                                                          | 1  | 1  | 1  | 36    | 4.6  | 0.18   |
| Pput_3146 | 148548356 | general substrate transporter                                                           | 15 | 4  | 4  | 2032  | 7.7  | 0.27   |
| Pput_3151 | 148548361 | pirin domain-containing protein                                                         | 1  | 1  | 1  | 25    | 4.7  | 0.15   |
| Pput_3161 | 148548371 | 4-hydroxyphenylpyruvate dioxygenase                                                     | 1  | 2  | 2  | 87    | 3    | 0.11   |
| Pput_3164 | 148548374 | LysR family transcriptional regulator                                                   | 1  | 1  | 1  | 26    | 4.1  | 0.11   |
| Pput_3165 | 148548375 | hypothetical protein Pput_3165                                                          | 3  | 1  | 2  | 149   | 9.7  | 0.32   |
| Pput_3177 | 148548385 | short-chain dehydrogenase/reductase SDR                                                 | 3  | 1  | 3  | 275   | 11.2 | 0.3    |
| Pput_3182 | 148548390 | major facilitator transporter                                                           | 2  | 1  | 2  | 57    | 2.3  | 0.09   |
| Pput_3187 | 148548395 | D-isomer specific 2-hydroxyacid dehydrogenase, NAD-binding                              | 1  | 2  | 2  | 104   | 7.1  | 0.22   |
| Pput_3189 | 148548397 | 5~-nucleotidase                                                                         | 1  | 1  | 1  | 25    | 2.1  | 0.1    |
| Pput_3191 | 148548399 | O-acetylhomoserine aminocarboxypropyltransferase                                        | 1  | 1  | 1  | 42    | 2.8  | 0.08   |
| Pput_3194 | 148548402 | ATPase-like protein                                                                     | 1  | 2  | 2  | 105   | 6.5  | 0.18   |
| Pput_3200 | 148548408 | protocatechuate 4,5-dioxygenase                                                         | 1  | 1  | 1  | 31    | 2.1  | 0.08   |
| Pput_3217 | 148548425 | diguanylate cyclase                                                                     | 2  | 1  | 2  | 174   | 5.8  | 0.2    |
| Pput_3219 | 148548427 | integration host factor subunit alpha                                                   | 3  | 1  | 2  | 198   | 20   | 0.81   |
| Pput_3220 | 148548428 | phenylalanyl-tRNA synthetase subunit beta                                               | 11 | 6  | 6  | 479   | 7.3  | 0.28   |
| Pput_3221 | 148548429 | phenylalanyl-tRNA synthetase subunit alpha                                              | 2  | 5  | 4  | 206   | 9.5  | 0.45   |
| Pput_3222 | 148548430 | 50S ribosomal protein L20                                                               | 13 | 2  | 4  | 630   | 22.9 | 1.82   |
| Pput_3223 | 148548431 | 50S ribosomal protein L35                                                               | 4  | 2  | 2  | 238   | 23.4 | 1.46   |
| Pput_3224 | 148548432 | translation initiation factor IF-3                                                      | 4  | 6  | 6  | 489   | 33.3 | 1.75   |
| Pput_3225 | 148548433 | threonyl-tRNA synthetase                                                                | 5  | 6  | 6  | 343   | 9.5  | 0.35   |
| Pput_3228 | 148548436 | hypothetical protein Pput_3228                                                          | 6  | 1  | 3  | 503   | 28.3 | 3.02   |
| Pput_3244 | 148548452 | sporulation domain-containing protein                                                   | 1  | 1  | 1  | 59    | 6.3  | 0.18   |
| Pput_3245 | 148548453 | FAD dependent oxidoreductase                                                            | 1  | 1  | 1  | 54    | 2.8  | 0.08   |
| Pput_3251 | 148548459 | serine/threonine transporter SstT                                                       | 1  | 1  | 1  | 32    | 2.5  | 0.09   |
| Pput_3252 | 148548460 | hypothetical protein Pput_3252                                                          | 3  | 9  | 7  | 610   | 43   | 5.11   |
| Pput_3255 | 148548463 | alkyl hydroperoxide reductase subunit F                                                 | 1  | 1  | 1  | 34    | 3.3  | 0.07   |
| Pput_3256 | 148548464 | alkyl hydroperoxide reductase/ Thiol specific antioxidant/ Mal allergen                 | 2  | 1  | 2  | 81    | 6.4  | 0.19   |
| Pput_3257 | 148548465 | integral membrane protein TerC                                                          | 1  | 1  | 1  | 27    | 2    | 0.09   |
| Pput_3259 | 148548467 | LysR family transcriptional regulator                                                   | 1  | 3  | 2  | 56    | 3.9  | 0.36   |
| Pput_3263 | 148548471 | dihydropteridine reductase                                                              | 2  | 1  | 2  | 63    | 4.6  | 0.16   |
| Pput_3264 | 148548472 | LysR family transcriptional regulator                                                   | 1  | 1  | 1  | 26    | 3.9  | 0.11   |
| Pput_3271 | 148548479 | 2~-5~ RNA ligase                                                                        | 1  | 1  | 1  | 32    | 4.4  | 0.19   |
| Pput_3273 | 148548481 | alkylhydroperoxidase                                                                    | 1  | 1  | 1  | 29    | 4.4  | 0.34   |
| Pput_3275 | 148548483 | TonB-dependent siderophore receptor                                                     | 2  | 1  | 2  | 52    | 1.1  | 0.08   |
| Pput_3292 | 148548500 | two component transcriptional regulator                                                 | 1  | 1  | 1  | 25    | 6.1  | 0.13   |
| Pput_3313 | 148548521 | major facilitator transporter                                                           | 1  | 1  | 1  | 30    | 2.5  | 0.08   |
| Pput_3320 | 148548528 | B12-dependent methionine synthase                                                       | 8  | 1  | 3  | 382   | 1.8  | 0.05   |
| Pput_3324 | 148548532 | sulfite reductase (ferredoxin)                                                          | 3  | 5  | 8  | 392   | 12.4 | 0.41   |
| Pput_3326 | 148548534 | leucine-rich repeat-containing protein                                                  | 1  | 1  | 1  | 24    | 0.6  | 0.02   |
| Pput_3327 | 148548535 | 2,5-diketo-D-gluconate reductase B                                                      | 1  | 3  | 3  | 98    | 12   | 0.45   |
| Pput_3331 | 148548539 | peptidase M14, carboxypeptidase A                                                       | 31 | 6  | 7  | 1851  | 14.9 | 0.66   |
| Pput_3333 | 148548541 | fimbrial biogenesis outer membrane usher protein                                        | 1  | 1  | 1  | 29    | 1.8  | 0.04   |
| Pput_3339 | 148548547 | multi-sensor signal transduction histidine kinase                                       | 2  | 2  | 2  | 90    | 2.7  | 0.09   |
| Pput_3340 | 148548548 | response regulator receiver protein                                                     | 2  | 1  | 1  | 92    | 7.2  | 0.46   |
| Pput_3341 | 148548549 | multi-sensor hybrid histidine kinase                                                    | 2  | 1  | 2  | 71    | 1.1  | 0.04   |
| Pput_3345 | 148548553 | AMP-dependent synthetase and ligase                                                     | 4  | 2  | 2  | 234   | 4.1  | 0.11   |
| Pput_3346 | 148548554 | LysR family transcriptional regulator                                                   | 1  | 1  | 1  | 26    | 4.5  | 0.12   |
| Pput_3364 | 148548572 | hypothetical protein Pput_3364                                                          | 1  | 1  | 1  | 26    | 14.4 | 0.28   |
| Pput_3366 | 148548574 | hypothetical protein Pput_3366                                                          | 1  | 1  | 1  | 28    | 6.4  | 0.21   |
| Pput_3398 | 148548606 | putative phage repressor                                                                | 1  | 2  | 2  | 91    | 8.2  | 0.25   |
| Pput_3412 | 148548620 | hypothetical protein Pput_3412                                                          | 1  | 1  | 1  | 31    | 4.7  | 0.2    |
| Pput_3431 | 161936356 | bifunctional aconitate hydratase 2/2-methylisocitrate dehydratase                       | 55 | 3  | 18 | 5410  | 11.3 | 0.53   |
| Pput_3432 | 148548640 | 2-methylcitrate dehydratase                                                             | 2  | 1  | 5  | 123   | 7.5  | 0.3    |
| Pput_3433 | 148548641 | putative AcnD-accessory protein PrpF                                                    | 17 | 9  | 13 | 1908  | 35.6 | 3      |
| Pput_3434 | 148548642 | aconitate hydratase                                                                     | 49 | 5  | 23 | 4877  | 17.5 | 0.71   |
| Pput_3435 | 148548643 | methylcitrate synthase                                                                  | 35 | 12 | 12 | 3126  | 30.9 | 2.28   |
| Pput_3436 | 148548644 | 2-methylisocitrate lyase                                                                | 11 | 11 | 8  | 1152  | 20.6 | 1.73   |
| Pput_3437 | 148548645 | GntR family transcriptional regulator                                                   | 2  | 1  | 5  | 143   | 18.9 | 0.69   |
| Pput_3439 | 148548647 | hypothetical protein Pput_3439                                                          | 3  | 1  | 3  | 150   | 2.7  | 0.07   |
| Pput_3440 | 148548648 | alpha-L-glutamate ligase-like protein                                                   | 1  | 2  | 2  | 64    | 7.1  | 0.22   |
| Pput_3442 | 148548650 | phosphoadenosine phosphosulfate reductase                                               | 1  | 4  | 2  | 77    | 10.7 | 0.66   |
| Pput_3443 | 148548651 | transcriptional regulator CysB                                                          | 9  | 2  | 6  | 608   | 14.2 | 0.64   |
| Pput_3446 | 148548654 | phospho-2-dehydro-3-deoxyheptonate aldolase                                             | 3  | 4  | 6  | 187   | 9.2  | 0.44   |
| Pput_3448 | 148548656 | outer membrane lipoprotein OprI                                                         | 71 | 54 | 11 | 25648 | 59   | 417.95 |
| Pput_3452 | 148548660 | ABC transporter related                                                                 | 1  | 2  | 2  | 40    | 8.8  | 0.33   |
| Pput_3458 | 148548666 | TatD-related deoxyribonuclease                                                          | 2  | 2  | 2  | 114   | 12.5 | 0.25   |
| Pput_3459 | 148548667 | methyl-accepting chemotaxis sensory transducer                                          | 1  | 3  | 3  | 78    | 7.5  | 0.23   |
| Pput_3461 | 148548669 | Acyl-CoA thioesterase-like protein                                                      | 1  | 1  | 1  | 33    | 3    | 0.13   |
| Pput_3462 | 148548670 | CHAD domain-containing protein                                                          | 5  | 6  | 6  | 482   | 29   | 1.06   |
| Pput_3463 | 148548671 | hypothetical protein Pput_3463                                                          | 4  | 2  | 2  | 358   | 27.2 | 0.94   |
| Pput_3464 | 148548672 | patatin                                                                                 | 4  | 4  | 3  | 342   | 11.3 | 0.32   |
| Pput_3466 | 148548674 | histone family protein DNA-binding protein                                              | 5  | 2  | 3  | 228   | 24.4 | 1.99   |
| Pput_3467 | 148548675 | ATP-dependent protease La                                                               | 5  | 4  | 7  | 237   | 6.1  | 0.23   |
| Pput_3468 | 148548676 | ATP-dependent protease ATP-binding subunit ClpX                                         | 9  | 8  | 8  | 989   | 19.9 | 0.7    |
| Pput_3469 | 148548677 | ATP-dependent Clp protease proteolytic subunit                                          | 5  | 1  | 5  | 597   | 20.7 | 2.75   |
| Pput_3470 | 148548678 | trigger factor                                                                          | 17 | 11 | 12 | 1402  | 22.7 | 1.27   |
| Pput_3473 | 148548681 | extracellular solute-binding protein                                                    | 2  | 1  | 2  | 53    | 2.1  | 0.06   |
| Pput_3478 | 148548686 | ABC transporter related                                                                 | 3  | 1  | 3  | 91    | 5.2  | 0.19   |
| Pput_3484 | 148548692 | GntR domain-containing protein                                                          | 2  | 1  | 1  | 62    | 4.3  | 0.15   |

|           |           |                                                                      |    |    |    |      |      |      |
|-----------|-----------|----------------------------------------------------------------------|----|----|----|------|------|------|
| Pput_3489 | 148548697 | methyl-accepting chemotaxis sensory transducer                       | 2  | 1  | 2  | 73   | 3.2  | 0.11 |
| Pput_3502 | 148548710 | peptidase M24                                                        | 3  | 2  | 5  | 155  | 3    | 0.12 |
| Pput_3508 | 148548716 | XRE family transcriptional regulator                                 | 1  | 1  | 1  | 75   | 7    | 0.18 |
| Pput_3517 | 148548725 | hypothetical protein Pput_3517                                       | 3  | 1  | 1  | 113  | 5    | 0.44 |
| Pput_3521 | 148548729 | enoyl-CoA hydratase/isomerase                                        | 6  | 9  | 6  | 638  | 26.8 | 2.15 |
| Pput_3522 | 148548730 | acyl-CoA dehydrogenase domain-containing protein                     | 5  | 2  | 4  | 254  | 9.1  | 0.19 |
| Pput_3523 | 148548731 | acetyl-CoA acetyltransferase                                         | 5  | 6  | 6  | 629  | 14.6 | 0.54 |
| Pput_3524 | 148548732 | short-chain dehydrogenase/reductase SDR                              | 3  | 1  | 3  | 161  | 16.1 | 0.5  |
| Pput_3525 | 148548733 | AMP-dependent synthetase and ligase                                  | 6  | 4  | 5  | 339  | 9.1  | 0.27 |
| Pput_3528 | 148548736 | LysR family transcriptional regulator                                | 1  | 1  | 1  | 49   | 2.4  | 0.12 |
| Pput_3546 | 148548753 | water stress/hypersensitive response protein                         | 2  | 1  | 1  | 75   | 6.3  | 0.22 |
| Pput_3547 | 148548754 | hypothetical protein Pput_3547                                       | 2  | 1  | 1  | 64   | 9.2  | 0.41 |
| Pput_3550 | 148548757 | UspA domain-containing protein                                       | 1  | 2  | 1  | 37   | 4.9  | 0.12 |
| Pput_3552 | 148548759 | formate dehydrogenase, alpha subunit                                 | 1  | 1  | 1  | 29   | 0.9  | 0.03 |
| Pput_3556 | 148548763 | XRE family transcriptional regulator                                 | 1  | 1  | 1  | 55   | 5.4  | 0.19 |
| Pput_3561 | 148548768 | LysR family transcriptional regulator                                | 1  | 1  | 1  | 30   | 4    | 0.12 |
| Pput_3574 | 161936355 | transaldolase B                                                      | 1  | 1  | 1  | 65   | 3.6  | 0.11 |
| Pput_3575 | 148548781 | hypothetical protein Pput_3575                                       | 1  | 1  | 1  | 27   | 2.8  | 0.05 |
| Pput_3577 | 148548783 | response regulator receiver protein                                  | 2  | 3  | 4  | 158  | 8.7  | 0.28 |
| Pput_3579 | 148548785 | VacJ family lipoprotein                                              | 8  | 9  | 9  | 736  | 35.3 | 1.58 |
| Pput_3582 | 148548788 | 7-cyano-7-deazaguanine reductase                                     | 3  | 1  | 2  | 133  | 4    | 0.38 |
| Pput_3584 | 148548790 | two component heavy metal response transcriptional regulator         | 1  | 1  | 1  | 65   | 6.2  | 0.15 |
| Pput_3586 | 148548792 | LolC/E family lipoprotein releasing system, transmembrane protein    | 1  | 1  | 1  | 28   | 2.7  | 0.08 |
| Pput_3587 | 148548793 | lipoprotein releasing system, ATP-binding protein                    | 1  | 2  | 2  | 60   | 9.9  | 0.32 |
| Pput_3588 | 148548794 | LolC/E family lipoprotein releasing system, transmembrane protein    | 1  | 1  | 1  | 28   | 2.4  | 0.08 |
| Pput_3590 | 148548796 | glycerophosphoryl diester phosphodiesterase                          | 3  | 3  | 3  | 213  | 14.3 | 0.49 |
| Pput_3591 | 148548797 | soluble pyridine nucleotide transhydrogenase                         | 11 | 6  | 6  | 937  | 11.9 | 0.53 |
| Pput_3593 | 148548799 | glyceraldehyde-3-phosphate dehydrogenase                             | 33 | 13 | 11 | 2900 | 22   | 0.97 |
| Pput_3594 | 148548800 | transcription-repair coupling factor                                 | 1  | 1  | 1  | 26   | 0.8  | 0.03 |
| Pput_3596 | 148548802 | non-specific serine/threonine protein kinase                         | 1  | 1  | 1  | 29   | 0.9  | 0.03 |
| Pput_3597 | 148548803 | beta-hexosaminidase                                                  | 3  | 3  | 3  | 163  | 7.7  | 0.34 |
| Pput_3598 | 148548804 | TetR family transcriptional regulator                                | 2  | 2  | 2  | 86   | 9.8  | 0.31 |
| Pput_3599 | 148548805 | LexA repressor                                                       | 2  | 3  | 3  | 105  | 15.3 | 0.61 |
| Pput_3603 | 148548809 | DNA topoisomerase I                                                  | 7  | 3  | 4  | 277  | 3    | 0.12 |
| Pput_3605 | 148548811 | 3-ketoacyl-CoA thiolase                                              | 4  | 4  | 8  | 652  | 22.8 | 1.57 |
| Pput_3606 | 148548812 | multifunctional fatty acid oxidation complex subunit alpha           | 12 | 1  | 6  | 635  | 6.2  | 0.21 |
| Pput_3608 | 148548814 | UspA domain-containing protein                                       | 4  | 2  | 2  | 154  | 15.1 | 0.53 |
| Pput_3609 | 148548815 | ABC transporter related                                              | 5  | 1  | 2  | 185  | 1.7  | 0.05 |
| Pput_3612 | 148548818 | putative CheW protein                                                | 1  | 1  | 1  | 30   | 3.2  | 0.11 |
| Pput_3619 | 148548825 | molybdenum cofactor biosynthesis protein B                           | 6  | 1  | 1  | 399  | 8.4  | 1.2  |
| Pput_3622 | 148548828 | lipid ABC transporter ATPase/inner membrane protein                  | 3  | 1  | 2  | 139  | 1.5  | 0.06 |
| Pput_3624 | 148548830 | erythronate-4-phosphate dehydrogenase                                | 1  | 2  | 2  | 60   | 5    | 0.19 |
| Pput_3627 | 148548833 | aconitate hydratase                                                  | 8  | 1  | 5  | 290  | 2    | 0.08 |
| Pput_3628 | 148548834 | methyl-accepting chemotaxis sensory transducer                       | 4  | 3  | 3  | 225  | 4.4  | 0.13 |
| Pput_3634 | 148548840 | protein of unknown function DUF883, ElaB                             | 4  | 1  | 1  | 219  | 10.6 | 0.7  |
| Pput_3640 | 148548846 | hypothetical protein Pput_3640                                       | 4  | 1  | 1  | 180  | 7.9  | 0.6  |
| Pput_3643 | 229328218 | 23S rRNA m(2)G2445 methyltransferase                                 | 11 | 1  | 5  | 533  | 5.5  | 0.19 |
| Pput_3644 | 148548850 | ribosome modulation factor                                           | 5  | 2  | 2  | 213  | 28.2 | 1.25 |
| Pput_3645 | 148548851 | dihydroorotate dehydrogenase 2                                       | 6  | 4  | 5  | 303  | 11.1 | 0.44 |
| Pput_3649 | 148548855 | protein kinase                                                       | 1  | 1  | 1  | 29   | 2.2  | 0.06 |
| Pput_3651 | 148548857 | OmpF family protein                                                  | 32 | 8  | 13 | 4273 | 36.9 | 2.5  |
| Pput_3653 | 148548859 | TM helix repeat-containing protein                                   | 13 | 1  | 1  | 734  | 3.6  | 0.52 |
| Pput_3656 | 148548862 | ribonuclease activity regulator protein RraA                         | 4  | 4  | 3  | 253  | 19.6 | 1.2  |
| Pput_3658 | 148548864 | phosphoenolpyruvate synthase                                         | 14 | 10 | 10 | 684  | 12.1 | 0.46 |
| Pput_3659 | 148548865 | hypothetical protein Pput_3659                                       | 3  | 2  | 2  | 144  | 8.8  | 0.26 |
| Pput_3660 | 148548866 | NAD-glutamate dehydrogenase                                          | 20 | 2  | 16 | 1191 | 4.9  | 0.15 |
| Pput_3669 | 148548875 | LysR family transcriptional regulator                                | 3  | 1  | 2  | 143  | 3.1  | 0.11 |
| Pput_3686 | 148548892 | LysR family transcriptional regulator                                | 1  | 1  | 1  | 32   | 3    | 0.11 |
| Pput_3689 | 148548895 | HAD family hydrolase                                                 | 1  | 1  | 1  | 27   | 1.3  | 0.05 |
| Pput_3692 | 148548898 | iron-containing alcohol dehydrogenase                                | 1  | 1  | 1  | 29   | 2.1  | 0.09 |
| Pput_3694 | 148548900 | 3-hydroxybutyryl-CoA epimerase                                       | 1  | 1  | 1  | 43   | 2.7  | 0.08 |
| Pput_3710 | 148548916 | ATPase                                                               | 2  | 4  | 4  | 274  | 13.8 | 0.5  |
| Pput_3711 | 148548917 | hypothetical protein Pput_3711                                       | 1  | 1  | 1  | 29   | 2.8  | 0.1  |
| Pput_3715 | 148548921 | hypothetical protein Pput_3715                                       | 1  | 1  | 1  | 27   | 1.7  | 0.06 |
| Pput_3725 | 148548931 | aminopeptidase N                                                     | 4  | 3  | 4  | 247  | 3.5  | 0.12 |
| Pput_3730 | 148548936 | inorganic polyphosphate/ATP-NAD kinase                               | 1  | 1  | 1  | 34   | 3.4  | 0.12 |
| Pput_3732 | 148548938 | cytochrome B561                                                      | 2  | 1  | 1  | 58   | 3.3  | 0.38 |
| Pput_3734 | 148548940 | NADH:flavin oxidoreductase/NADH oxidase                              | 2  | 3  | 3  | 151  | 4.6  | 0.16 |
| Pput_3738 | 148548944 | short-chain dehydrogenase/reductase SDR                              | 3  | 5  | 6  | 245  | 24.5 | 0.98 |
| Pput_3740 | 148548946 | helix-turn-helix domain-containing protein                           | 1  | 1  | 1  | 27   | 3.7  | 0.11 |
| Pput_3742 | 148548948 | LysR family transcriptional regulator                                | 1  | 1  | 1  | 30   | 3    | 0.12 |
| Pput_3743 | 148548949 | short-chain dehydrogenase/reductase SDR                              | 1  | 1  | 1  | 30   | 3.5  | 0.14 |
| Pput_3755 | 148548961 | fimbrial biogenesis outer membrane usher protein                     | 1  | 1  | 1  | 26   | 0.9  | 0.04 |
| Pput_3759 | 148548965 | oxidoreductase                                                       | 1  | 1  | 1  | 34   | 2.7  | 0.14 |
| Pput_3760 | 148548966 | O-succinylhomoserine sulphydrylase                                   | 6  | 6  | 6  | 461  | 18.1 | 0.64 |
| Pput_3761 | 148548967 | amidophosphoribosyltransferase                                       | 12 | 7  | 7  | 644  | 10.6 | 0.57 |
| Pput_3765 | 148548971 | acetyl-CoA carboxylase subunit beta                                  | 15 | 1  | 7  | 1195 | 20.2 | 1.14 |
| Pput_3768 | 148548974 | peptidoglycan-binding LysM                                           | 4  | 1  | 2  | 136  | 1.1  | 0.04 |
| Pput_3770 | 148548976 | aspartate-semialdehyde dehydrogenase                                 | 1  | 4  | 4  | 120  | 11.9 | 0.42 |
| Pput_3771 | 148548977 | 3-isopropylmalate dehydrogenase                                      | 2  | 2  | 3  | 111  | 7.5  | 0.2  |
| Pput_3772 | 148548978 | methyltransferase type 11                                            | 1  | 1  | 1  | 46   | 3.5  | 0.13 |
| Pput_3773 | 148548979 | isopropylmalate isomerase small subunit                              | 1  | 1  | 1  | 50   | 5.1  | 0.16 |
| Pput_3774 | 148548980 | isopropylmalate isomerase large subunit                              | 3  | 3  | 3  | 128  | 7.8  | 0.23 |
| Pput_3776 | 148548982 | diguanylate cyclase/phosphodiesterase with PAS/PAC and GAF sensor(s) | 1  | 1  | 1  | 46   | 0.7  | 0.03 |
| Pput_3777 | 148548983 | heat shock protein Hsp20                                             | 6  | 5  | 10 | 684  | 51   | 4.65 |
| Pput_3779 | 148548985 | dihydrouridine synthase, DuS                                         | 1  | 1  | 1  | 29   | 2.8  | 0.1  |
| Pput_3783 | 148548989 | glutamyl-tRNA synthetase                                             | 2  | 4  | 5  | 317  | 8.9  | 0.29 |
| Pput_3786 | 148548992 | excinuclease ABC subunit B                                           | 2  | 3  | 4  | 145  | 5.1  | 0.15 |
| Pput_3787 | 148548993 | aromatic amino acid aminotransferase                                 | 16 | 6  | 8  | 1384 | 27.1 | 0.94 |

|           |           |                                                                  |    |    |    |      |      |      |
|-----------|-----------|------------------------------------------------------------------|----|----|----|------|------|------|
| Pput_3789 | 148548995 | hypothetical protein Pput_3789                                   | 2  | 2  | 3  | 187  | 16.2 | 0.4  |
| Pput_3790 | 148548996 | hypothetical protein Pput_3790                                   | 2  | 3  | 3  | 132  | 15.4 | 0.6  |
| Pput_3792 | 148548998 | TetR family transcriptional regulator                            | 1  | 1  | 1  | 26   | 3.8  | 0.15 |
| Pput_3795 | 148549001 | thymidylate kinase                                               | 1  | 1  | 1  | 29   | 4.8  | 0.17 |
| Pput_3798 | 229328217 | 3-oxoacyl-(acyl carrier protein) synthase II                     | 2  | 1  | 2  | 107  | 7.2  | 0.18 |
| Pput_3800 | 148549006 | 3-ketoacyl-(acyl-carrier-protein) reductase                      | 17 | 5  | 8  | 2001 | 41.9 | 3.03 |
| Pput_3801 | 148549007 | malonyl CoA-acyl carrier protein transacylase                    | 1  | 1  | 1  | 68   | 3.5  | 0.11 |
| Pput_3803 | 148549009 | 50S ribosomal protein L32                                        | 5  | 3  | 3  | 260  | 45   | 6.5  |
| Pput_3804 | 148549010 | hypothetical protein Pput_3804                                   | 1  | 1  | 1  | 66   | 6.3  | 0.2  |
| Pput_3805 | 148549011 | Maf-like protein                                                 | 3  | 2  | 2  | 186  | 13   | 0.39 |
| Pput_3806 | 148549012 | signal peptide peptidase SppA, 36K type                          | 1  | 1  | 1  | 31   | 2.7  | 0.1  |
| Pput_3808 | 148549014 | RluA family pseudouridine synthase                               | 1  | 1  | 1  | 52   | 3    | 0.1  |
| Pput_3809 | 148549015 | ribonuclease                                                     | 43 | 11 | 14 | 3119 | 8.1  | 0.35 |
| Pput_3810 | 148549016 | UDP-N-acetylenolpyruvoylglucosamine reductase                    | 2  | 2  | 3  | 178  | 6.2  | 0.21 |
| Pput_3811 | 148549017 | protein tyrosine phosphatase                                     | 1  | 1  | 1  | 31   | 5.2  | 0.23 |
| Pput_3812 | 148549018 | 3-deoxy-manno-octulosonate cytidyltransferase                    | 1  | 1  | 1  | 26   | 3.5  | 0.14 |
| Pput_3818 | 148549024 | hypothetical protein Pput_3818                                   | 1  | 1  | 1  | 27   | 7.6  | 0.16 |
| Pput_3820 | 148549026 | ABC transporter related                                          | 1  | 1  | 1  | 108  | 4.2  | 0.11 |
| Pput_3821 | 148549027 | glutathione S-transferase domain-containing protein              | 1  | 1  | 1  | 25   | 6.8  | 0.16 |
| Pput_3822 | 148549028 | acyl-CoA dehydrogenase                                           | 4  | 5  | 5  | 247  | 6    | 0.23 |
| Pput_3827 | 148549033 | outer membrane autotransporter                                   | 1  | 1  | 1  | 53   | 1.2  | 0.05 |
| Pput_3829 | 148549035 | YD repeat-/RHS repeat-containing protein                         | 1  | 1  | 1  | 24   | 0.7  | 0.03 |
| Pput_3830 | 148549036 | hypothetical protein Pput_3830                                   | 3  | 1  | 3  | 83   | 1.6  | 0.04 |
| Pput_3839 | 148549045 | hypothetical protein Pput_3839                                   | 4  | 1  | 5  | 332  | 11.2 | 0.38 |
| Pput_3840 | 148549046 | histidine kinase                                                 | 1  | 1  | 1  | 31   | 1    | 0.04 |
| Pput_3841 | 148549047 | glutathione peroxidase                                           | 4  | 1  | 1  | 176  | 7.4  | 0.42 |
| Pput_3842 | 148549048 | methionine sulfoxide reductase B                                 | 1  | 1  | 1  | 34   | 6.1  | 0.25 |
| Pput_3843 | 148549049 | aminotransferase AlaT                                            | 3  | 3  | 3  | 262  | 7.4  | 0.27 |
| Pput_3844 | 148549050 | heat shock protein HtpX                                          | 3  | 1  | 2  | 133  | 6.8  | 0.12 |
| Pput_3847 | 148549053 | DEAD/DEAH box helicase domain-containing protein                 | 7  | 3  | 4  | 471  | 6.4  | 0.19 |
| Pput_3849 | 148549055 | phospho-2-dehydro-3-deoxyheptonate aldolase                      | 2  | 5  | 4  | 144  | 9.2  | 0.43 |
| Pput_3851 | 148549057 | LysR family transcriptional regulator                            | 3  | 1  | 1  | 88   | 3.9  | 0.36 |
| Pput_3855 | 148549061 | OsmC family protein                                              | 4  | 2  | 2  | 236  | 16.9 | 1.2  |
| Pput_3856 | 148549062 | elongation factor P                                              | 10 | 4  | 5  | 1005 | 25.9 | 1.29 |
| Pput_3857 | 148549063 | hypothetical protein Pput_3857                                   | 1  | 1  | 1  | 61   | 4.2  | 0.09 |
| Pput_3860 | 148549066 | 3-ketoacyl-(acyl-carrier-protein) reductase                      | 2  | 3  | 3  | 198  | 12.4 | 0.52 |
| Pput_3867 | 148549073 | Mg2+ transporter protein, CorA family protein                    | 1  | 1  | 1  | 91   | 3.4  | 0.1  |
| Pput_3868 | 148549074 | amidotransferase                                                 | 1  | 1  | 1  | 62   | 4.5  | 0.14 |
| Pput_3878 | 148549084 | hypothetical protein Pput_3878                                   | 1  | 2  | 1  | 80   | 6.2  | 0.43 |
| Pput_3880 | 148549086 | chorismate synthase                                              | 1  | 4  | 4  | 215  | 14   | 0.44 |
| Pput_3884 | 148549090 | N5-glutamine S-adenosyl-L-methionine-dependent methyltransferase | 2  | 3  | 3  | 274  | 11.9 | 0.37 |
| Pput_3885 | 148549091 | isochorismatase hydrolase                                        | 4  | 2  | 2  | 298  | 12.2 | 0.39 |
| Pput_3888 | 148549094 | GTP cyclohydrolase I                                             | 10 | 3  | 4  | 491  | 14.9 | 0.68 |
| Pput_3895 | 148549101 | alcohol dehydrogenase                                            | 3  | 5  | 3  | 287  | 9.9  | 0.64 |
| Pput_3896 | 148549102 | orotidine 5~-phosphate decarboxylase                             | 1  | 1  | 1  | 51   | 4.7  | 0.15 |
| Pput_3897 | 148549103 | hypothetical protein Pput_3897                                   | 7  | 1  | 2  | 297  | 40   | 1.79 |
| Pput_3898 | 148549104 | helix-hairpin-helix repeat-containing competence protein ComEA   | 2  | 1  | 1  | 70   | 8.1  | 0.34 |
| Pput_3905 | 148549111 | polysaccharide export protein                                    | 1  | 1  | 1  | 41   | 3.7  | 0.1  |
| Pput_3906 | 148549112 | capsule polysaccharide biosynthesis protein                      | 1  | 1  | 1  | 29   | 1.3  | 0.04 |
| Pput_3908 | 148549114 | 2-dehydro-3-deoxyphosphooctonate aldolase                        | 1  | 1  | 1  | 45   | 2.9  | 0.12 |
| Pput_3915 | 148549121 | sulfatase                                                        | 1  | 1  | 1  | 29   | 1.7  | 0.07 |
| Pput_3923 | 148549129 | dTDP-4-dehydrothamnose 3,5-epimerase                             | 2  | 1  | 1  | 85   | 4.4  | 0.19 |
| Pput_3928 | 148549134 | DegT/DnrJ/EryC1/StrS aminotransferase                            | 1  | 1  | 1  | 87   | 3.8  | 0.09 |
| Pput_3929 | 148549135 | glycosyl transferase family protein                              | 1  | 1  | 1  | 60   | 3.2  | 0.11 |
| Pput_3930 | 148549136 | WxcM domain-containing protein                                   | 2  | 1  | 1  | 116  | 3.2  | 0.11 |
| Pput_3933 | 148549139 | glucose-1-phosphate thymidyltransferase                          | 2  | 1  | 2  | 58   | 3.7  | 0.11 |
| Pput_3934 | 148549140 | dTDP-4-dehydrothamnose reductase                                 | 1  | 1  | 1  | 44   | 2.7  | 0.12 |
| Pput_3938 | 148549144 | NAD-dependent epimerase/dehydratase                              | 1  | 1  | 1  | 35   | 2.5  | 0.11 |
| Pput_3941 | 148549147 | integration host factor subunit beta                             | 1  | 1  | 1  | 50   | 10.2 | 0.36 |
| Pput_3942 | 148549148 | 30S ribosomal protein S1                                         | 29 | 14 | 16 | 2914 | 17.9 | 2.16 |
| Pput_3944 | 148549150 | 3-phosphoshikimate 1-carboxyvinyltransferase                     | 3  | 1  | 4  | 233  | 6.6  | 0.26 |
| Pput_3945 | 148549151 | chorismate mutase                                                | 3  | 9  | 7  | 377  | 22.3 | 1.21 |
| Pput_3946 | 148549152 | phosphoserine aminotransferase                                   | 3  | 4  | 5  | 201  | 10.9 | 0.39 |
| Pput_3947 | 148549153 | DNA gyrase subunit A                                             | 17 | 6  | 8  | 1112 | 5.3  | 0.24 |
| Pput_3949 | 148549155 | 3-demethylubiquinone-9 3-methyltransferase                       | 3  | 3  | 4  | 233  | 18.1 | 0.5  |
| Pput_3950 | 148549156 | phosphoglycolate phosphatase                                     | 1  | 1  | 1  | 27   | 6.3  | 0.15 |
| Pput_3955 | 148549161 | DSBA oxidoreductase                                              | 1  | 1  | 1  | 46   | 5.2  | 0.17 |
| Pput_3958 | 148549164 | hypothetical protein Pput_3958                                   | 3  | 1  | 1  | 86   | 2.9  | 0.2  |
| Pput_3959 | 148549165 | fumarate hydratase                                               | 1  | 2  | 2  | 61   | 5    | 0.16 |
| Pput_3962 | 148549168 | hypothetical protein Pput_3962                                   | 5  | 7  | 7  | 401  | 17.9 | 0.55 |
| Pput_3964 | 148549170 | asparagine synthase (glutamine-hydrolyzing)                      | 2  | 1  | 1  | 82   | 1.3  | 0.12 |
| Pput_3966 | 148549172 | peptidase M42 family protein                                     | 1  | 1  | 1  | 67   | 2.8  | 0.09 |
| Pput_3973 | 148549179 | hypothetical protein Pput_3973                                   | 1  | 1  | 1  | 33   | 1.7  | 0.04 |
| Pput_3976 | 148549182 | acetate permease                                                 | 47 | 2  | 4  | 4592 | 6.9  | 0.56 |
| Pput_3977 | 148549183 | hypothetical protein Pput_3977                                   | 2  | 1  | 1  | 118  | 12.6 | 0.34 |
| Pput_3982 | 148549188 | VacJ family lipoprotein                                          | 3  | 2  | 3  | 132  | 7.6  | 0.26 |
| Pput_3985 | 148549191 | septum formation inhibitor                                       | 1  | 1  | 1  | 46   | 3.1  | 0.14 |
| Pput_3986 | 148549192 | septum site-determining protein MinD                             | 10 | 5  | 7  | 847  | 22.2 | 0.82 |
| Pput_3987 | 148549193 | cell division topological specificity factor MinE                | 6  | 2  | 3  | 249  | 23.8 | 2    |
| Pput_3988 | 148549194 | pseudouridine synthase                                           | 1  | 1  | 1  | 29   | 4.7  | 0.16 |
| Pput_3989 | 148549195 | putative aminopeptidase 2                                        | 1  | 2  | 2  | 50   | 4.4  | 0.16 |
| Pput_3994 | 148549200 | type I phosphodiesterase/nucleotide pyrophosphatase              | 3  | 1  | 2  | 148  | 7.3  | 0.12 |
| Pput_3997 | 148549203 | ABC transporter related                                          | 1  | 3  | 3  | 70   | 9.1  | 0.34 |
| Pput_3999 | 148549205 | quinone oxidoreductase putative, PIG3                            | 2  | 1  | 2  | 104  | 6.9  | 0.23 |
| Pput_4000 | 148549206 | carboxyl-terminal protease                                       | 1  | 1  | 1  | 60   | 1.6  | 0.05 |
| Pput_4005 | 148549211 | peptidylprolyl isomerase, FKBP-type                              | 1  | 1  | 1  | 65   | 4.4  | 0.14 |
| Pput_4006 | 148549212 | LysR family transcriptional regulator                            | 1  | 1  | 1  | 61   | 3.2  | 0.11 |
| Pput_4018 | 148549224 | recombination associated protein                                 | 3  | 3  | 3  | 261  | 10.7 | 0.35 |
| Pput_4025 | 148549231 | integral membrane sensor hybrid histidine kinase                 | 7  | 1  | 1  | 373  | 1    | 0.12 |

|           |           |                                                               |    |    |    |      |      |       |
|-----------|-----------|---------------------------------------------------------------|----|----|----|------|------|-------|
| Pput_4026 | 148549232 | hypothetical protein Pput_4026                                | 2  | 1  | 1  | 80   | 1.6  | 0.07  |
| Pput_4030 | 148549236 | membrane protein involved in aromatic hydrocarbon degradation | 2  | 6  | 7  | 621  | 17.1 | 0.73  |
| Pput_4031 | 148549237 | LysR family transcriptional regulator                         | 1  | 1  | 1  | 26   | 2.6  | 0.11  |
| Pput_4047 | 148549253 | cob(I)tyrinic acid a,c-diamide adenosyltransferase            | 3  | 4  | 5  | 202  | 19.7 | 0.86  |
| Pput_4049 | 148549255 | NLP/P60 protein                                               | 1  | 1  | 1  | 29   | 2.4  | 0.17  |
| Pput_4050 | 148549256 | DNA replication initiation factor                             | 1  | 2  | 2  | 114  | 8.5  | 0.31  |
| Pput_4052 | 148549258 | hypothetical protein Pput_4052                                | 1  | 2  | 2  | 44   | 5.4  | 0.21  |
| Pput_4054 | 148549260 | phosphoribosylglycinamide formyltransferase                   | 1  | 1  | 1  | 27   | 3.7  | 0.16  |
| Pput_4055 | 148549261 | hypothetical protein Pput_4055                                | 2  | 3  | 2  | 109  | 8.1  | 0.31  |
| Pput_4060 | 148549266 | hypothetical protein Pput_4060                                | 2  | 2  | 3  | 86   | 10.6 | 0.41  |
| Pput_4062 | 148549268 | (p)ppGpp synthetase I, SpoT/RelA                              | 4  | 1  | 6  | 227  | 5.4  | 0.19  |
| Pput_4063 | 148549269 | 23S rRNA 5-methyluridine methyltransferase                    | 1  | 3  | 3  | 81   | 6.2  | 0.24  |
| Pput_4064 | 148549270 | cysteine synthase B                                           | 2  | 4  | 5  | 147  | 14.7 | 0.53  |
| Pput_4067 | 148549273 | multi-sensor hybrid histidine kinase                          | 1  | 1  | 1  | 27   | 1    | 0.04  |
| Pput_4073 | 148549279 | flavodoxin/nitric oxide synthase                              | 5  | 6  | 3  | 334  | 18.9 | 0.94  |
| Pput_4075 | 148549281 | 3-methyladenine DNA glycosylase-like protein                  | 1  | 1  | 1  | 28   | 4.5  | 0.15  |
| Pput_4076 | 148549282 | PP-loop domain-containing protein                             | 7  | 1  | 2  | 259  | 4.4  | 0.72  |
| Pput_4079 | 148549285 | oxidoreductase FAD/NAD(P)-binding subunit                     | 2  | 2  | 2  | 85   | 6.2  | 0.27  |
| Pput_4082 | 148549288 | two component LuxR family transcriptional regulator           | 3  | 4  | 5  | 212  | 19.4 | 0.82  |
| Pput_4088 | 148549294 | recombinase A                                                 | 11 | 3  | 5  | 880  | 16.6 | 0.61  |
| Pput_4089 | 148549295 | CinA domain-containing protein                                | 1  | 1  | 1  | 26   | 6.3  | 0.23  |
| Pput_4095 | 148549301 | hypothetical protein Pput_4095                                | 1  | 1  | 1  | 26   | 9.1  | 0.22  |
| Pput_4109 | 148549315 | HK97 family phage protein                                     | 1  | 1  | 1  | 30   | 9.3  | 0.22  |
| Pput_4147 | 148549353 | hypothetical protein Pput_4147                                | 1  | 1  | 1  | 26   | 8.5  | 0.29  |
| Pput_4154 | 148549360 | RNA polymerase sigma factor RpoS                              | 1  | 1  | 1  | 25   | 2.4  | 0.1   |
| Pput_4155 | 148549361 | peptidase M23B                                                | 2  | 1  | 2  | 80   | 4.6  | 0.14  |
| Pput_4156 | 148549362 | protein-L-isaspartate O-methyltransferase                     | 1  | 1  | 1  | 29   | 4.5  | 0.15  |
| Pput_4157 | 148549363 | stationary phase survival protein SurE                        | 5  | 1  | 2  | 171  | 5.2  | 0.14  |
| Pput_4158 | 148549364 | tRNA pseudouridine synthase D                                 | 2  | 2  | 3  | 196  | 9.4  | 0.32  |
| Pput_4161 | 148549367 | S-(hydroxymethyl)glutathione dehydrogenase                    | 2  | 3  | 3  | 139  | 8.9  | 0.31  |
| Pput_4163 | 148549369 | 2-C-methyl-D-erythritol 4-phosphate cytidilyltransferase      | 1  | 1  | 1  | 46   | 5.5  | 0.15  |
| Pput_4165 | 148549371 | phosphopyruvate hydratase                                     | 6  | 5  | 5  | 648  | 13.1 | 0.48  |
| Pput_4167 | 148549373 | CTP synthetase                                                | 12 | 3  | 9  | 937  | 11.6 | 0.62  |
| Pput_4169 | 148549375 | tRNA(Ile)-lysidine synthetase                                 | 1  | 1  | 1  | 43   | 2.1  | 0.08  |
| Pput_4170 | 148549376 | acetyl-CoA carboxylase carboxyltransferase subunit alpha      | 4  | 5  | 7  | 431  | 15.1 | 1.15  |
| Pput_4174 | 148549380 | UDP-N-acetylglucosamine acyltransferase                       | 1  | 2  | 2  | 116  | 12   | 0.29  |
| Pput_4175 | 148549381 | (3R)-hydroxymyristoyl-ACP dehydratase                         | 2  | 2  | 2  | 67   | 11   | 0.75  |
| Pput_4176 | 148549382 | UDP-3-O-[3-hydroxymyristoyl] glucosamine N-acyltransferase    | 2  | 2  | 3  | 154  | 6.6  | 0.22  |
| Pput_4177 | 148549383 | outer membrane chaperone Skp (OmpH)                           | 3  | 2  | 3  | 124  | 13.2 | 0.45  |
| Pput_4178 | 148549384 | surface antigen (D15)                                         | 4  | 9  | 8  | 427  | 11.8 | 0.46  |
| Pput_4182 | 148549388 | undecaprenyl diphosphate synthase                             | 3  | 1  | 1  | 168  | 4.4  | 0.26  |
| Pput_4183 | 148549389 | ribosome recycling factor                                     | 3  | 3  | 3  | 207  | 16.8 | 0.69  |
| Pput_4184 | 148549390 | uridylyate kinase                                             | 2  | 2  | 1  | 179  | 4.5  | 0.45  |
| Pput_4185 | 148549391 | elongation factor Ts                                          | 11 | 10 | 10 | 960  | 27.9 | 1.86  |
| Pput_4186 | 148549392 | 30S ribosomal protein S2                                      | 18 | 4  | 12 | 1989 | 41.2 | 10.96 |
| Pput_4187 | 148549393 | methionine aminopeptidase                                     | 2  | 4  | 4  | 237  | 15.4 | 0.63  |
| Pput_4188 | 148549394 | PII uridylyl-transferase                                      | 1  | 1  | 1  | 27   | 1    | 0.04  |
| Pput_4189 | 148549395 | succinyldiaminopimelate transaminase                          | 3  | 3  | 4  | 170  | 6.8  | 0.28  |
| Pput_4190 | 148549396 | Na <sup>+</sup> /H <sup>+</sup> antiporter                    | 4  | 1  | 3  | 108  | 2    | 0.12  |
| Pput_4192 | 148549398 | XRE family plasmid maintenance system antidote protein        | 1  | 1  | 1  | 37   | 11.1 | 0.36  |
| Pput_4194 | 148549400 | tetrahydrodipicolinate N-succinyltransferase-like protein     | 3  | 5  | 4  | 494  | 10.5 | 0.64  |
| Pput_4195 | 148549401 | aminotransferase, class V                                     | 1  | 2  | 2  | 65   | 6    | 0.18  |
| Pput_4197 | 148549403 | UBA/THIF-type NAD/FAD binding protein                         | 1  | 2  | 2  | 35   | 8.2  | 0.27  |
| Pput_4198 | 148549404 | glycosyl transferase family protein                           | 1  | 1  | 1  | 28   | 0.9  | 0.04  |
| Pput_4199 | 148549405 | succinyl-diaminopimelate desuccinylase                        | 1  | 1  | 1  | 29   | 3.4  | 0.09  |
| Pput_4203 | 148549409 | glycerol-3-phosphate acyltransferase                          | 1  | 1  | 1  | 26   | 1.8  | 0.04  |
| Pput_4209 | 148549415 | hypothetical protein Pput_4209                                | 3  | 2  | 2  | 158  | 8.9  | 0.29  |
| Pput_4215 | 148549421 | peptidase M22, glycoprotease                                  | 1  | 1  | 1  | 29   | 6.3  | 0.16  |
| Pput_4216 | 148549422 | adenylate kinase                                              | 4  | 6  | 7  | 409  | 32.4 | 1.48  |
| Pput_4217 | 148549423 | phosphoenolpyruvate carboxylase                               | 15 | 2  | 10 | 633  | 5.6  | 0.21  |
| Pput_4219 | 148549425 | hypothetical protein Pput_4219                                | 4  | 1  | 1  | 231  | 7.6  | 0.56  |
| Pput_4220 | 148549426 | OmpA/MotB domain-containing protein                           | 3  | 5  | 7  | 641  | 37.3 | 1.36  |
| Pput_4223 | 148549429 | hypothetical protein Pput_4223                                | 1  | 1  | 1  | 54   | 2.9  | 0.07  |
| Pput_4226 | 148549432 | lysyl-tRNA synthetase                                         | 9  | 5  | 6  | 437  | 10.6 | 0.37  |
| Pput_4227 | 148549433 | peptide chain release factor 2                                | 2  | 2  | 6  | 197  | 21.1 | 0.88  |
| Pput_4228 | 148549434 | response regulator receiver modulated diguanylate cyclase     | 1  | 1  | 1  | 91   | 3.9  | 0.1   |
| Pput_4234 | 148549440 | methyl-accepting chemotaxis sensory transducer                | 2  | 1  | 3  | 154  | 5.2  | 0.13  |
| Pput_4235 | 148549441 | hypothetical protein Pput_4235                                | 2  | 3  | 7  | 253  | 29.6 | 1.8   |
| Pput_4237 | 148549443 | spermidine/putrescine ABC transporter ATPase subunit          | 8  | 2  | 4  | 359  | 9.9  | 0.33  |
| Pput_4240 | 161936354 | gamma-aminobutyraldehyde dehydrogenase                        | 8  | 4  | 5  | 511  | 9.7  | 0.33  |
| Pput_4243 | 148549449 | NADH:flavin oxidoreductase/NADH oxidase                       | 11 | 5  | 11 | 1102 | 27.4 | 1.64  |
| Pput_4244 | 148549450 | single-stranded-DNA-specific exonuclease RecJ                 | 1  | 1  | 1  | 26   | 1.8  | 0.06  |
| Pput_4245 | 148549451 | YaeQ family protein                                           | 2  | 1  | 2  | 70   | 5.6  | 0.18  |
| Pput_4246 | 148549452 | L-carnitine dehydratase/bile acid-inducible protein F         | 1  | 1  | 1  | 74   | 4    | 0.09  |
| Pput_4250 | 148549456 | threonine synthase                                            | 3  | 3  | 3  | 273  | 7.7  | 0.23  |
| Pput_4251 | 148549457 | homoserine dehydrogenase                                      | 4  | 2  | 3  | 278  | 4.4  | 0.43  |
| Pput_4252 | 148549458 | thiol:disulfide interchange protein DsbC                      | 3  | 1  | 1  | 92   | 3.2  | 0.28  |
| Pput_4256 | 148549462 | 50S ribosomal protein L19                                     | 9  | 12 | 10 | 1874 | 64.7 | 23.04 |
| Pput_4259 | 148549465 | 30S ribosomal protein S16                                     | 6  | 2  | 5  | 704  | 45.8 | 1.99  |
| Pput_4260 | 148549466 | signal recognition particle protein                           | 2  | 2  | 3  | 124  | 5.9  | 0.16  |
| Pput_4262 | 148549468 | transporter-associated region                                 | 2  | 1  | 1  | 121  | 2.2  | 0.08  |
| Pput_4264 | 148549470 | phosphoribosylglycinamide formyltransferase 2                 | 8  | 5  | 8  | 531  | 13.2 | 0.52  |
| Pput_4266 | 148549472 | hypothetical protein Pput_4266                                | 1  | 1  | 1  | 24   | 10.4 | 0.54  |
| Pput_4267 | 148549473 | hexapptide repeat-containing transferase                      | 2  | 1  | 2  | 112  | 13.2 | 0.46  |
| Pput_4270 | 148549476 | hypothetical protein Pput_4270                                | 1  | 1  | 1  | 29   | 2.7  | 0.19  |
| Pput_4276 | 148549482 | carbohydrate-selective porin OprB                             | 1  | 5  | 4  | 71   | 8.1  | 0.34  |
| Pput_4277 | 148549483 | Pyrrolo-quinoline quinone                                     | 5  | 1  | 4  | 165  | 2.4  | 0.09  |
| Pput_4278 | 148549484 | ATP-dependent protease La                                     | 13 | 2  | 8  | 1081 | 6    | 0.22  |
| Pput_4280 | 148549486 | putative methyltransferase                                    | 2  | 1  | 1  | 56   | 3.2  | 0.28  |

|           |           |                                                                                     |    |    |    |       |      |       |
|-----------|-----------|-------------------------------------------------------------------------------------|----|----|----|-------|------|-------|
| Pput_4285 | 148549491 | pyridoxine 5~-phosphate synthase                                                    | 4  | 4  | 6  | 414   | 24.2 | 0.72  |
| Pput_4287 | 148549493 | GTP-binding protein Era                                                             | 2  | 3  | 3  | 103   | 8.7  | 0.37  |
| Pput_4288 | 148549494 | ribonuclease III                                                                    | 2  | 5  | 5  | 151   | 20.5 | 1     |
| Pput_4289 | 148549495 | signal peptidase I                                                                  | 1  | 1  | 1  | 43    | 3.2  | 0.12  |
| Pput_4290 | 148549496 | GTP-binding protein LepA                                                            | 2  | 1  | 3  | 138   | 3.9  | 0.12  |
| Pput_4291 | 148549497 | protease Do                                                                         | 6  | 3  | 3  | 305   | 7.1  | 0.24  |
| Pput_4292 | 148549498 | sigma E regulatory protein, MucB/RseB                                               | 2  | 3  | 3  | 157   | 9.3  | 0.36  |
| Pput_4294 | 148549500 | RNA polymerase sigma factor AlgU                                                    | 2  | 4  | 3  | 148   | 18.7 | 0.88  |
| Pput_4295 | 148549501 | L-aspartate oxidase                                                                 | 3  | 1  | 1  | 132   | 1.7  | 0.06  |
| Pput_4297 | 148549503 | hypothetical protein Pput_4297                                                      | 1  | 1  | 1  | 29    | 9.5  | 0.39  |
| Pput_4298 | 148549504 | glycine cleavage T protein (aminomethyl transferase)                                | 1  | 1  | 1  | 62    | 3.5  | 0.11  |
| Pput_4301 | 148549507 | two component transcriptional regulator                                             | 2  | 2  | 1  | 106   | 4    | 0.33  |
| Pput_4303 | 148549509 | hypothetical protein Pput_4303                                                      | 1  | 1  | 1  | 27    | 4.9  | 0.11  |
| Pput_4309 | 148549515 | enoyl-CoA hydratase/isomerase                                                       | 4  | 3  | 3  | 314   | 7.6  | 0.3   |
| Pput_4318 | 148549523 | hypothetical protein Pput_4318                                                      | 1  | 1  | 1  | 40    | 3    | 0.08  |
| Pput_4325 | 148549530 | hypothetical protein Pput_4325                                                      | 1  | 1  | 1  | 49    | 7.5  | 0.17  |
| Pput_4328 | 148549533 | AraC-like transcriptional regulator                                                 | 1  | 1  | 1  | 60    | 4.2  | 0.11  |
| Pput_4332 | 148549537 | NAD-dependent epimerase/dehydratase                                                 | 4  | 4  | 6  | 328   | 29.4 | 0.9   |
| Pput_4333 | 148549538 | LysR family transcriptional regulator                                               | 1  | 1  | 1  | 32    | 2.3  | 0.11  |
| Pput_4334 | 148549539 | PEP phosphonmutase and related enzymes-like protein                                 | 1  | 1  | 1  | 47    | 3.5  | 0.12  |
| Pput_4336 | 148549541 | TetR family transcriptional regulator                                               | 1  | 3  | 3  | 93    | 15.2 | 0.56  |
| Pput_4337 | 148549542 | RND family efflux transporter MFP subunit                                           | 2  | 1  | 1  | 67    | 2.3  | 0.09  |
| Pput_4338 | 148549543 | hydrophobe/amphiphile efflux-1 (HAE1) family protein                                | 10 | 1  | 4  | 466   | 2    | 0.1   |
| Pput_4339 | 148549544 | RND efflux system outer membrane lipoprotein                                        | 36 | 10 | 12 | 3689  | 22.9 | 0.85  |
| Pput_4341 | 148549546 | hypothetical protein Pput_4341                                                      | 3  | 1  | 1  | 132   | 6.9  | 0.6   |
| Pput_4343 | 148549548 | 3-oxoadipate enol-lactonase                                                         | 1  | 1  | 1  | 44    | 3    | 0.13  |
| Pput_4345 | 148549550 | major facilitator superfamily metabolite/H(+) symporter                             | 2  | 1  | 1  | 78    | 2.6  | 0.08  |
| Pput_4346 | 148549551 | beta-ketoacyl CoA thiolase                                                          | 1  | 1  | 1  | 28    | 6.3  | 0.09  |
| Pput_4348 | 148549553 | beta-ketoacyl pathway transcription regulator                                       | 3  | 1  | 1  | 99    | 3.4  | 0.24  |
| Pput_4351 | 148549556 | protein of unknown function DUF853, NPT hydrolase putative                          | 3  | 4  | 4  | 227   | 8.6  | 0.32  |
| Pput_4352 | 148549557 | methyl-accepting chemotaxis sensory transducer                                      | 2  | 4  | 7  | 316   | 11.1 | 0.31  |
| Pput_4354 | 148549559 | hypothetical protein Pput_4354                                                      | 1  | 1  | 1  | 69    | 6.7  | 0.13  |
| Pput_4356 | 148549561 | formyltetrahydrofolate deformylase                                                  | 1  | 2  | 2  | 44    | 8.1  | 0.24  |
| Pput_4357 | 148549562 | hypothetical protein Pput_4357                                                      | 7  | 7  | 6  | 823   | 41.6 | 3.36  |
| Pput_4361 | 148549566 | hypothetical protein Pput_4361                                                      | 2  | 1  | 1  | 61    | 7.8  | 0.52  |
| Pput_4362 | 148549567 | pyruvate kinase                                                                     | 20 | 2  | 10 | 1174  | 9.3  | 0.41  |
| Pput_4363 | 148549568 | chaperonin GroEL                                                                    | 66 | 26 | 38 | 20192 | 41.4 | 10.21 |
| Pput_4364 | 148549569 | co-chaperonin GroES                                                                 | 8  | 1  | 3  | 371   | 10.3 | 0.39  |
| Pput_4365 | 148549570 | FxsA                                                                                | 19 | 3  | 3  | 1138  | 15   | 0.85  |
| Pput_4366 | 148549571 | pyridoxamine 5~-phosphate oxidase-related, FMN-binding                              | 1  | 4  | 4  | 79    | 19.3 | 0.68  |
| Pput_4367 | 148549572 | hypothetical protein Pput_4367                                                      | 1  | 1  | 1  | 31    | 2.4  | 0.1   |
| Pput_4371 | 148549576 | MscS mechanosensitive ion channel                                                   | 1  | 1  | 1  | 25    | 3.9  | 0.12  |
| Pput_4372 | 148549577 | putative nucleotide-binding protein                                                 | 4  | 1  | 4  | 151   | 13.7 | 0.46  |
| Pput_4374 | 148549579 | multi-sensor signal transduction histidine kinase                                   | 1  | 2  | 2  | 55    | 3    | 0.1   |
| Pput_4375 | 148549580 | ATP--cobalamin adenosyltransferase                                                  | 1  | 1  | 1  | 46    | 6.9  | 0.19  |
| Pput_4377 | 148549582 | glutathione S-transferase domain-containing protein                                 | 2  | 2  | 2  | 178   | 11   | 0.35  |
| Pput_4378 | 148549583 | bifunctional ornithine acetyltransferase/N-acetylglutamate synthase protein         | 4  | 3  | 3  | 347   | 7.7  | 0.29  |
| Pput_4379 | 148549584 | preprotein translocase subunit SecA                                                 | 36 | 3  | 14 | 1974  | 8.4  | 0.31  |
| Pput_4381 | 148549586 | UDP-3-O-[3-hydroxymyristoyl] N-acetylglucosamine deacetylase                        | 7  | 9  | 9  | 576   | 20.5 | 1.36  |
| Pput_4382 | 148549587 | cell division protein FtsZ                                                          | 17 | 8  | 9  | 1342  | 21.9 | 0.98  |
| Pput_4383 | 148549588 | cell division protein FtsA                                                          | 8  | 9  | 11 | 827   | 24.8 | 1.05  |
| Pput_4385 | 148549590 | D-alanine--D-alanine ligase                                                         | 2  | 2  | 2  | 108   | 6.6  | 0.23  |
| Pput_4386 | 148549591 | UDP-N-acetylmuramate--L-alanine ligase                                              | 12 | 6  | 6  | 1114  | 13.9 | 0.51  |
| Pput_4387 | 148549592 | undecaprenyldiphospho-muramoylpentapeptide beta-N- acetylglucosaminyltransferase    | 2  | 1  | 2  | 133   | 4.2  | 0.1   |
| Pput_4389 | 148549594 | UDP-N-acetylmuramoyl-L-alanyl-D-glutamate synthetase                                | 6  | 8  | 7  | 411   | 13.3 | 0.81  |
| Pput_4390 | 148549595 | phospho-N-acetylmuramoyl-pentapeptide-transferase                                   | 1  | 1  | 1  | 35    | 2.8  | 0.1   |
| Pput_4391 | 148549596 | UDP-N-acetylmuramoylalanyl-D-glutamyl-2,6-diaminopimelate--D-alanyl-D-alanyl ligase | 4  | 3  | 3  | 291   | 7.5  | 0.26  |
| Pput_4392 | 148549597 | UDP-N-acetylmuramoylalanyl-D-glutamate--2,6-diaminopimelate ligase                  | 2  | 2  | 6  | 241   | 13.5 | 0.49  |
| Pput_4395 | 148549600 | S-adenosyl-methyltransferase MraW                                                   | 2  | 4  | 4  | 232   | 12.7 | 0.52  |
| Pput_4396 | 148549601 | cell division protein MraZ                                                          | 1  | 2  | 2  | 62    | 11.9 | 0.5   |
| Pput_4399 | 148549603 | LppC family lipoprotein                                                             | 2  | 1  | 5  | 175   | 7.6  | 0.32  |
| Pput_4402 | 148549606 | transport-associated                                                                | 13 | 7  | 9  | 1380  | 55.2 | 4.45  |
| Pput_4404 | 148549608 | glutathione S-transferase domain-containing protein                                 | 2  | 2  | 2  | 166   | 12.6 | 0.35  |
| Pput_4405 | 148549609 | ubiquinol--cytochrome c reductase, cytochrome c1                                    | 6  | 5  | 5  | 506   | 19.3 | 1.68  |
| Pput_4406 | 148549610 | cytochrome b/b6 domain-containing protein                                           | 1  | 1  | 1  | 48    | 2    | 0.08  |
| Pput_4407 | 148549611 | ubiquinol-cytochrome c reductase, iron-sulfur subunit                               | 15 | 7  | 8  | 1503  | 29.9 | 2.22  |
| Pput_4408 | 148549612 | 30S ribosomal protein S9                                                            | 10 | 12 | 8  | 1760  | 50   | 9.83  |
| Pput_4409 | 148549613 | 50S ribosomal protein L13                                                           | 4  | 6  | 10 | 609   | 51.4 | 7.96  |
| Pput_4410 | 148549614 | aldo/keto reductase                                                                 | 2  | 3  | 3  | 147   | 8.1  | 0.32  |
| Pput_4412 | 148549616 | AFG1 family ATPase                                                                  | 1  | 1  | 1  | 38    | 2.5  | 0.09  |
| Pput_4413 | 148549617 | tryptophanyl-tRNA synthetase                                                        | 4  | 7  | 8  | 411   | 16.3 | 0.66  |
| Pput_4415 | 148549619 | hypothetical protein Pput_4415                                                      | 10 | 2  | 5  | 835   | 27.6 | 2.31  |
| Pput_4416 | 148549620 | methionine gamma-lyase                                                              | 2  | 2  | 2  | 180   | 5.5  | 0.18  |
| Pput_4421 | 148549623 | bifunctional sulfate adenyllyltransferase subunit 1/adenyllylsulfate kinase protein | 38 | 2  | 12 | 3083  | 18   | 0.6   |
| Pput_4422 | 148549624 | sulfate adenyllyltransferase subunit 2                                              | 4  | 1  | 3  | 220   | 8.5  | 0.22  |
| Pput_4423 | 148549625 | hypothetical protein Pput_4423                                                      | 1  | 1  | 1  | 62    | 4.8  | 0.14  |
| Pput_4425 | 148549627 | ABC transporter related                                                             | 4  | 6  | 6  | 436   | 25.6 | 1.08  |
| Pput_4427 | 148549629 | polar amino acid ABC transporter, inner membrane subunit                            | 2  | 1  | 2  | 94    | 5.1  | 0.18  |
| Pput_4428 | 148549630 | extracellular solute-binding protein                                                | 7  | 3  | 6  | 353   | 10.8 | 0.48  |
| Pput_4429 | 148549631 | carboxylesterase                                                                    | 2  | 1  | 1  | 135   | 6.4  | 0.32  |
| Pput_4430 | 148549632 | ATP-dependent RNA helicase RhlB                                                     | 1  | 1  | 1  | 27    | 3.5  | 0.07  |
| Pput_4434 | 148549636 | PhoH family protein                                                                 | 13 | 2  | 5  | 704   | 9.7  | 0.51  |
| Pput_4435 | 148549637 | polysaccharide deacetylase                                                          | 1  | 1  | 1  | 28    | 1.9  | 0.09  |
| Pput_4447 | 148549649 | hypothetical protein Pput_4447                                                      | 1  | 1  | 1  | 28    | 2.3  | 0.16  |
| Pput_4450 | 148549652 | hypothetical protein Pput_4450                                                      | 2  | 1  | 1  | 89    | 6.5  | 0.22  |
| Pput_4451 | 148549653 | short chain dehydrogenase                                                           | 1  | 1  | 1  | 44    | 4.4  | 0.13  |
| Pput_4455 | 148549657 | LysR family transcriptional regulator                                               | 1  | 1  | 1  | 25    | 12   | 0.11  |
| Pput_4461 | 148549663 | LysR family transcriptional regulator                                               | 1  | 1  | 1  | 49    | 2.5  | 0.11  |
| Pput_4462 | 148549664 | D-isomer specific 2-hydroxyacid dehydrogenase, NAD-binding                          | 7  | 5  | 6  | 433   | 18.2 | 0.67  |



|           |           |                                                                                           |    |    |    |      |      |       |
|-----------|-----------|-------------------------------------------------------------------------------------------|----|----|----|------|------|-------|
| Pput_4465 | 148549667 | TonB-dependent siderophore receptor                                                       | 1  | 1  | 1  | 30   | 1.4  | 0.04  |
| Pput_4467 | 148549669 | ECF subfamily RNA polymerase sigma-24 factor                                              | 1  | 1  | 1  | 27   | 4.1  | 0.17  |
| Pput_4472 | 148549674 | hypothetical protein Pput_4472                                                            | 1  | 1  | 1  | 25   | 7.3  | 0.38  |
| Pput_4477 | 148549679 | Glu/Leu/Phe/Val dehydrogenase, dimerisation region                                        | 2  | 2  | 2  | 106  | 3.8  | 0.1   |
| Pput_4479 | 148549681 | maleylacetoacetate isomerase                                                              | 2  | 4  | 3  | 193  | 17.6 | 0.59  |
| Pput_4480 | 148549682 | fumarylacetoacetase                                                                       | 2  | 3  | 3  | 113  | 8.4  | 0.26  |
| Pput_4481 | 148549683 | homogentisate 1,2-dioxygenase                                                             | 5  | 2  | 2  | 201  | 5.8  | 0.16  |
| Pput_4483 | 148549685 | hypothetical protein Pput_4483                                                            | 1  | 1  | 1  | 32   | 0.7  | 0.03  |
| Pput_4493 | 148549695 | short chain dehydrogenase                                                                 | 1  | 1  | 1  | 27   | 3.7  | 0.14  |
| Pput_4497 | 148549699 | trans-2-enoyl-CoA reductase                                                               | 15 | 10 | 12 | 1063 | 22.6 | 1.24  |
| Pput_4498 | 148549700 | acetyl-CoA acetyltransferase                                                              | 1  | 4  | 4  | 118  | 14.3 | 0.42  |
| Pput_4503 | 148549705 | carbon starvation protein CstA                                                            | 29 | 1  | 3  | 1651 | 2.8  | 0.1   |
| Pput_4504 | 148549706 | type IV pilus assembly PilZ                                                               | 1  | 2  | 1  | 38   | 8.3  | 0.27  |
| Pput_4507 | 148549709 | large-conductance mechanosensitive channel                                                | 1  | 1  | 1  | 41   | 5.8  | 0.27  |
| Pput_4508 | 148549710 | oxidoreductase FAD/NAD(P)-binding subunit                                                 | 1  | 3  | 2  | 147  | 9.5  | 0.25  |
| Pput_4513 | 148549715 | cytochrome bd ubiquinol oxidase, subunit I                                                | 3  | 1  | 2  | 105  | 5    | 0.07  |
| Pput_4517 | 148549719 | protocatechuate 3,4-dioxygenase, alpha subunit                                            | 1  | 1  | 1  | 31   | 4.5  | 0.17  |
| Pput_4518 | 148549720 | protocatechuate 3,4-dioxygenase, beta subunit                                             | 2  | 3  | 4  | 131  | 20.9 | 0.48  |
| Pput_4519 | 148549721 | protein of unknown function, zinc metallopeptidase putative                               | 3  | 1  | 2  | 117  | 6.4  | 0.25  |
| Pput_4520 | 148549722 | methyl-accepting chemotaxis sensory transducer                                            | 1  | 2  | 2  | 68   | 3    | 0.11  |
| Pput_4522 | 148549724 | LysR family transcriptional regulator                                                     | 1  | 1  | 1  | 30   | 2.7  | 0.11  |
| Pput_4526 | 148549728 | LysR family transcriptional regulator                                                     | 2  | 1  | 1  | 58   | 2.7  | 0.24  |
| Pput_4530 | 148549732 | 3-hydroxyisobutyrate dehydrogenase                                                        | 3  | 4  | 1  | 281  | 5.1  | 0.54  |
| Pput_4531 | 148549733 | methylmalonate-semialdehyde dehydrogenase                                                 | 2  | 7  | 8  | 376  | 13.4 | 0.59  |
| Pput_4538 | 148549740 | exodeoxyribonuclease V, gamma subunit                                                     | 1  | 1  | 1  | 29   | 0.7  | 0.03  |
| Pput_4541 | 148549743 | CDP-diacylglycerol--serine O-phosphatidyltransferase                                      | 8  | 1  | 1  | 408  | 3.9  | 0.84  |
| Pput_4542 | 148549744 | ketol-acid reductoisomerase                                                               | 23 | 29 | 15 | 4250 | 43.5 | 6.06  |
| Pput_4543 | 148549745 | acetolactate synthase 3 regulatory subunit                                                | 4  | 2  | 2  | 211  | 16.6 | 0.48  |
| Pput_4544 | 148549746 | acetolactate synthase 3 catalytic subunit                                                 | 9  | 6  | 7  | 467  | 8.9  | 0.41  |
| Pput_4546 | 148549748 | hypothetical protein Pput_4546                                                            | 8  | 4  | 4  | 722  | 14.3 | 1.36  |
| Pput_4548 | 148549750 | hypothetical protein Pput_4548                                                            | 4  | 3  | 4  | 336  | 7.5  | 0.27  |
| Pput_4556 | 148549758 | hypothetical protein Pput_4556                                                            | 1  | 3  | 3  | 125  | 8.2  | 0.29  |
| Pput_4560 | 148549762 | multi-sensor signal transduction histidine kinase                                         | 2  | 1  | 2  | 84   | 1    | 0.03  |
| Pput_4561 | 148549763 | two component, sigma54 specific, Fis family transcriptional regulator                     | 4  | 3  | 7  | 283  | 11.5 | 0.51  |
| Pput_4562 | 148549764 | poly(A) polymerase                                                                        | 5  | 5  | 6  | 250  | 10   | 0.41  |
| Pput_4564 | 148549766 | 3-methyl-2-oxobutanoate hydroxymethyltransferase                                          | 1  | 1  | 1  | 34   | 4.9  | 0.14  |
| Pput_4565 | 148549767 | pantoate--beta-alanine ligase                                                             | 2  | 1  | 2  | 76   | 3.5  | 0.12  |
| Pput_4566 | 148549768 | glucose-6-phosphate isomerase                                                             | 8  | 2  | 7  | 471  | 11.4 | 0.6   |
| Pput_4567 | 148549769 | acetyl-CoA synthetase                                                                     | 8  | 4  | 5  | 493  | 7    | 0.22  |
| Pput_4573 | 148549775 | polynucleotide phosphorylase/polyadenylase                                                | 26 | 14 | 18 | 2486 | 22   | 0.96  |
| Pput_4574 | 148549776 | 30S ribosomal protein S15                                                                 | 1  | 1  | 1  | 27   | 7.9  | 0.4   |
| Pput_4576 | 148549778 | ribosome-binding factor A                                                                 | 1  | 1  | 1  | 35   | 6.1  | 0.26  |
| Pput_4577 | 148549779 | translation initiation factor IF-2                                                        | 21 | 3  | 11 | 2071 | 7.9  | 0.32  |
| Pput_4578 | 148549780 | transcription elongation factor NusA                                                      | 13 | 16 | 12 | 1139 | 23.5 | 1.69  |
| Pput_4579 | 148549781 | hypothetical protein Pput_4579                                                            | 2  | 2  | 2  | 66   | 9.5  | 0.45  |
| Pput_4580 | 148549782 | preprotein translocase subunit SecG                                                       | 2  | 1  | 1  | 157  | 13.6 | 0.29  |
| Pput_4581 | 148549783 | triosephosphate isomerase                                                                 | 1  | 2  | 2  | 92   | 9.6  | 0.31  |
| Pput_4582 | 148549784 | phosphoglucosamine mutase                                                                 | 13 | 7  | 9  | 746  | 15   | 0.57  |
| Pput_4584 | 148549786 | ATP-dependent metalloprotease FtsH                                                        | 11 | 4  | 7  | 768  | 12   | 0.37  |
| Pput_4588 | 148549790 | transcription elongation factor GreA                                                      | 2  | 1  | 1  | 97   | 5.6  | 0.22  |
| Pput_4589 | 148549791 | carbamoyl phosphate synthase large subunit                                                | 31 | 4  | 12 | 1770 | 5.8  | 0.45  |
| Pput_4590 | 148549792 | carbamoyl phosphate synthase small subunit                                                | 5  | 1  | 5  | 379  | 11.7 | 0.41  |
| Pput_4591 | 148549793 | dihydrodipicolinate reductase                                                             | 6  | 6  | 7  | 610  | 21.7 | 1.12  |
| Pput_4592 | 148549794 | chaperone protein DnaJ                                                                    | 17 | 7  | 9  | 947  | 17.4 | 0.86  |
| Pput_4593 | 148549795 | molecular chaperone DnaK                                                                  | 51 | 2  | 27 | 5100 | 33.6 | 2.96  |
| Pput_4594 | 148549796 | GrpE protein                                                                              | 5  | 4  | 4  | 286  | 17.8 | 0.98  |
| Pput_4596 | 148549798 | ferric uptake regulator family protein                                                    | 7  | 6  | 4  | 845  | 30.6 | 2.94  |
| Pput_4602 | 148549804 | L-lactate dehydrogenase                                                                   | 4  | 9  | 8  | 485  | 24.4 | 1.18  |
| Pput_4612 | 148549814 | N-6 DNA methylase                                                                         | 1  | 1  | 1  | 50   | 1.8  | 0.07  |
| Pput_4613 | 148549815 | hypothetical protein Pput_4613                                                            | 1  | 1  | 1  | 30   | 3.6  | 0.12  |
| Pput_4634 | 148549836 | alcohol dehydrogenase                                                                     | 4  | 1  | 3  | 169  | 6    | 0.22  |
| Pput_4636 | 148549838 | acyl-CoA thioesterase II                                                                  | 2  | 1  | 1  | 86   | 3.1  | 0.12  |
| Pput_4637 | 148549839 | GCN5-related N-acetyltransferase                                                          | 2  | 1  | 1  | 105  | 5.8  | 0.18  |
| Pput_4639 | 148549841 | histone deacetylase superfamily protein                                                   | 1  | 1  | 1  | 54   | 3.5  | 0.11  |
| Pput_4641 | 148549843 | DEAD/DEAH box helicase domain-containing protein                                          | 2  | 2  | 2  | 134  | 5.6  | 0.16  |
| Pput_4643 | 148549845 | DNA polymerase III, epsilon subunit                                                       | 1  | 1  | 1  | 55   | 5.7  | 0.17  |
| Pput_4652 | 148549854 | AsnC family transcriptional regulator                                                     | 6  | 1  | 2  | 354  | 12   | 0.48  |
| Pput_4655 | 148549857 | AMP nucleosidase                                                                          | 4  | 4  | 4  | 316  | 7.9  | 0.28  |
| Pput_4656 | 148549858 | acyl-CoA dehydrogenase domain-containing protein                                          | 3  | 11 | 11 | 521  | 21.1 | 0.82  |
| Pput_4658 | 148549860 | phosphomethylpyrimidine kinase                                                            | 2  | 4  | 4  | 167  | 20.8 | 0.64  |
| Pput_4659 | 148549861 | thiamine-phosphate pyrophosphorylase                                                      | 10 | 3  | 4  | 339  | 19.3 | 0.62  |
| Pput_4660 | 148549862 | glutamate-1-semialdehyde aminotransferase                                                 | 4  | 2  | 4  | 449  | 6.6  | 0.17  |
| Pput_4663 | 148549865 | PhoH family protein                                                                       | 2  | 2  | 3  | 267  | 9.9  | 0.33  |
| Pput_4664 | 148549866 | putative metalloprotease                                                                  | 2  | 2  | 4  | 97   | 14.6 | 0.8   |
| Pput_4665 | 148549867 | CBS domain-containing protein                                                             | 1  | 2  | 2  | 39   | 6.5  | 0.25  |
| Pput_4669 | 148549871 | leucyl-tRNA synthetase                                                                    | 5  | 3  | 4  | 207  | 3.2  | 0.11  |
| Pput_4670 | 148549872 | rare lipoprotein B                                                                        | 19 | 23 | 19 | 2695 | 68.7 | 25.87 |
| Pput_4673 | 148549875 | lytic murein transglycosylase                                                             | 3  | 1  | 1  | 137  | 2.3  | 0.08  |
| Pput_4675 | 148549877 | lipoyl synthase                                                                           | 1  | 1  | 1  | 32   | 3.8  | 0.1   |
| Pput_4676 | 148549878 | lipoyltransferase                                                                         | 1  | 1  | 1  | 30   | 3.7  | 0.16  |
| Pput_4677 | 148549879 | hypothetical protein Pput_4677                                                            | 1  | 1  | 1  | 37   | 9.9  | 0.39  |
| Pput_4678 | 148549880 | Serine-type D-Ala-D-Ala carboxypeptidase                                                  | 4  | 4  | 6  | 366  | 11.2 | 0.38  |
| Pput_4684 | 148549886 | iojap-like protein                                                                        | 3  | 1  | 2  | 100  | 5.7  | 0.44  |
| Pput_4685 | 148549887 | nicotinic acid mononucleotide adenyltransferase                                           | 1  | 1  | 1  | 55   | 4.3  | 0.15  |
| Pput_4686 | 148549888 | gamma-glutamyl phosphate reductase                                                        | 6  | 3  | 4  | 320  | 7.3  | 0.27  |
| Pput_4692 | 148549894 | dehydratase                                                                               | 2  | 1  | 1  | 129  | 7.3  | 0.51  |
| Pput_4694 | 148549896 | Zinc finger-domain-containing protein                                                     | 1  | 1  | 1  | 50   | 2.2  | 0.07  |
| Pput_4697 | 148549899 | bifunctional phosphoribosylaminoimidazolecarboxamide formyltransferase/IMP cyclohydrolase | 6  | 1  | 7  | 406  | 6.7  | 0.37  |
| Pput_4698 | 148549900 | phosphoribosylamine--glycine ligase                                                       | 2  | 1  | 1  | 132  | 2.6  | 0.16  |

|           |           |                                                                                  |    |    |    |      |      |      |
|-----------|-----------|----------------------------------------------------------------------------------|----|----|----|------|------|------|
| Pput_4699 | 148549901 | integral membrane sensor hybrid histidine kinase                                 | 1  | 1  | 1  | 33   | 1.4  | 0.04 |
| Pput_4703 | 148549905 | hypothetical protein Pput_4703                                                   | 1  | 1  | 1  | 27   | 5.8  | 0.15 |
| Pput_4708 | 148549910 | precorrin-Gy C5,15-methyltransferase (decarboxylating), CbiE subunit             | 2  | 1  | 2  | 69   | 3.2  | 0.09 |
| Pput_4711 | 148549913 | hypothetical protein Pput_4711                                                   | 1  | 1  | 1  | 52   | 6.9  | 0.24 |
| Pput_4716 | 148549918 | TonB-dependent copper receptor                                                   | 1  | 1  | 1  | 29   | 1.5  | 0.05 |
| Pput_4726 | 148549928 | chaperone DnaJ domain-containing protein                                         | 6  | 10 | 10 | 469  | 29.2 | 1.8  |
| Pput_4732 | 148549934 | alpha/beta hydrolase fold                                                        | 1  | 1  | 1  | 50   | 2.7  | 0.12 |
| Pput_4733 | 148549935 | DNA-binding transcriptional activator OsmE                                       | 2  | 1  | 1  | 76   | 8.8  | 0.32 |
| Pput_4734 | 148549936 | Ferritin, Dps family protein                                                     | 2  | 1  | 2  | 91   | 6.3  | 0.19 |
| Pput_4738 | 148549940 | N-acylglucosamine 2-epimerase                                                    | 2  | 1  | 2  | 92   | 3    | 0.09 |
| Pput_4740 | 148549942 | short-chain dehydrogenase/reductase SDR                                          | 2  | 2  | 4  | 237  | 27.6 | 0.67 |
| Pput_4741 | 148549943 | ABC transporter related                                                          | 9  | 6  | 5  | 759  | 23.9 | 1.25 |
| Pput_4742 | 148549944 | ABC transporter related                                                          | 3  | 3  | 5  | 213  | 12   | 0.55 |
| Pput_4743 | 148549945 | inner-membrane translocator                                                      | 2  | 2  | 1  | 107  | 3.5  | 0.25 |
| Pput_4745 | 148549947 | extracellular ligand-binding receptor                                            | 2  | 1  | 4  | 147  | 8.2  | 0.31 |
| Pput_4747 | 148549949 | NAD synthetase                                                                   | 2  | 3  | 2  | 277  | 7.6  | 0.71 |
| Pput_4748 | 148549950 | azurin                                                                           | 1  | 1  | 1  | 29   | 4    | 0.24 |
| Pput_4754 | 148549956 | replicative DNA helicase                                                         | 1  | 2  | 2  | 47   | 3.7  | 0.15 |
| Pput_4755 | 148549957 | 50S ribosomal protein L9                                                         | 6  | 4  | 6  | 469  | 33.1 | 2.86 |
| Pput_4757 | 148549959 | 30S ribosomal protein S18                                                        | 1  | 2  | 2  | 57   | 34.2 | 1.11 |
| Pput_4758 | 148549960 | 30S ribosomal protein S6                                                         | 5  | 5  | 6  | 638  | 40.4 | 2.57 |
| Pput_4759 | 148549961 | RNA methyltransferase                                                            | 2  | 3  | 3  | 360  | 21.4 | 0.48 |
| Pput_4760 | 148549962 | ribonuclease R                                                                   | 21 | 1  | 12 | 1472 | 11.7 | 0.4  |
| Pput_4764 | 148549966 | methyl-accepting chemotaxis sensory transducer                                   | 5  | 5  | 6  | 323  | 6.5  | 0.3  |
| Pput_4765 | 148549967 | adenylosuccinate synthetase                                                      | 7  | 6  | 9  | 430  | 14.7 | 0.58 |
| Pput_4766 | 148549968 | ATP phosphoribosyltransferase regulatory subunit                                 | 2  | 4  | 4  | 101  | 9.9  | 0.39 |
| Pput_4767 | 148549969 | HflC protein                                                                     | 5  | 10 | 10 | 440  | 28.7 | 1.95 |
| Pput_4768 | 148549970 | HflK protein                                                                     | 6  | 2  | 10 | 787  | 28.8 | 1.29 |
| Pput_4769 | 148549971 | GTP-binding protein, HSR1-related                                                | 1  | 1  | 1  | 35   | 1.8  | 0.08 |
| Pput_4770 | 148549972 | RNA-binding protein Hfq                                                          | 5  | 3  | 2  | 339  | 34.9 | 1.92 |
| Pput_4771 | 148549973 | tRNA delta(2)-isopentenylpyrophosphate transferase                               | 2  | 1  | 1  | 68   | 3.1  | 0.11 |
| Pput_4774 | 148549976 | hypothetical protein Pput_4774                                                   | 2  | 1  | 2  | 100  | 7.6  | 0.23 |
| Pput_4775 | 148549977 | carbohydrate kinase, YjeF related protein                                        | 1  | 1  | 1  | 72   | 5.9  | 0.12 |
| Pput_4776 | 148549978 | putative iron-sulfur cluster binding protein                                     | 3  | 1  | 1  | 92   | 3.4  | 0.18 |
| Pput_4778 | 148549980 | oligoribonuclease                                                                | 3  | 3  | 3  | 136  | 14.4 | 0.66 |
| Pput_4779 | 148549981 | ribosome-associated GTPase                                                       | 2  | 1  | 1  | 81   | 5.5  | 0.1  |
| Pput_4783 | 148549985 | rhodanese domain-containing protein                                              | 2  | 8  | 7  | 256  | 34.9 | 1.63 |
| Pput_4784 | 148549986 | phosphatidylserine decarboxylase                                                 | 3  | 4  | 6  | 432  | 16.7 | 0.57 |
| Pput_4785 | 148549987 | phosphoserine phosphatase SerB                                                   | 1  | 1  | 1  | 40   | 2    | 0.09 |
| Pput_4786 | 148549988 | hypothetical protein Pput_4786                                                   | 2  | 4  | 4  | 160  | 9.1  | 0.31 |
| Pput_4787 | 148549989 | hypothetical protein Pput_4787                                                   | 1  | 1  | 1  | 34   | 3.6  | 0.14 |
| Pput_4788 | 148549990 | DNA topoisomerase IV subunit A                                                   | 3  | 6  | 7  | 387  | 9    | 0.3  |
| Pput_4790 | 148549992 | hypothetical protein Pput_4790                                                   | 1  | 1  | 1  | 37   | 3    | 0.1  |
| Pput_4795 | 148549997 | NUDIX hydrolase                                                                  | 2  | 1  | 1  | 203  | 5.9  | 0.32 |
| Pput_4796 | 148549998 | hypothetical protein Pput_4796                                                   | 1  | 1  | 1  | 26   | 3.2  | 0.14 |
| Pput_4799 | 148550001 | TolC family type I secretion outer membrane protein                              | 1  | 1  | 1  | 47   | 1.7  | 0.07 |
| Pput_4800 | 148550002 | 3-deoxy-D-manno-octulosonic-acid transferase                                     | 3  | 1  | 2  | 112  | 2.4  | 0.16 |
| Pput_4803 | 148550005 | FAD dependent oxidoreductase                                                     | 2  | 4  | 4  | 141  | 13.3 | 0.41 |
| Pput_4804 | 148550006 | aldo/keto reductase                                                              | 1  | 1  | 1  | 45   | 5.6  | 0.13 |
| Pput_4806 | 148550008 | bifunctional heptose 7-phosphate kinase/heptose 1-phosphate adenylyltransferase  | 5  | 4  | 5  | 271  | 8.5  | 0.33 |
| Pput_4807 | 148550009 | lipid A ABC exporter, fused ATPase and inner membrane subunits MsbA              | 7  | 4  | 5  | 466  | 6.8  | 0.24 |
| Pput_4809 | 148550011 | hypothetical protein Pput_4809                                                   | 4  | 4  | 3  | 399  | 14.3 | 1.44 |
| Pput_4810 | 148550012 | glycosyl transferase, group 1                                                    | 1  | 1  | 1  | 56   | 3    | 0.09 |
| Pput_4811 | 148550013 | hypothetical protein Pput_4811                                                   | 2  | 1  | 1  | 61   | 2.7  | 0.13 |
| Pput_4814 | 148550016 | Mig-14 family protein                                                            | 1  | 1  | 1  | 42   | 3    | 0.11 |
| Pput_4815 | 148550017 | glycosyl transferase, group 1                                                    | 3  | 1  | 3  | 86   | 3.7  | 0.09 |
| Pput_4816 | 148550018 | carbamoyltransferase                                                             | 2  | 3  | 3  | 138  | 5    | 0.18 |
| Pput_4817 | 148550019 | hypothetical protein Pput_4817                                                   | 2  | 1  | 1  | 99   | 3.6  | 0.24 |
| Pput_4818 | 148550020 | sodium/proline symporter                                                         | 4  | 1  | 1  | 191  | 2.6  | 0.21 |
| Pput_4819 | 148550021 | pyrroline-5-carboxylate dehydrogenase                                            | 13 | 1  | 9  | 558  | 4.6  | 0.14 |
| Pput_4822 | 148550024 | peptidase U62, modulator of DNA gyrase                                           | 1  | 2  | 2  | 57   | 4    | 0.15 |
| Pput_4823 | 148550025 | hypothetical protein Pput_4823                                                   | 1  | 1  | 1  | 46   | 2.1  | 0.08 |
| Pput_4825 | 148550027 | ATP-dependent RNA helicase DbpA                                                  | 3  | 1  | 2  | 124  | 2.8  | 0.14 |
| Pput_4829 | 148550031 | GCN5-related N-acetyltransferase                                                 | 2  | 1  | 1  | 111  | 10   | 0.46 |
| Pput_4833 | 148550035 | fructose-1,6-bisphosphate aldolase                                               | 18 | 7  | 12 | 1488 | 26   | 1.3  |
| Pput_4834 | 148550036 | hypothetical protein Pput_4834                                                   | 2  | 1  | 1  | 84   | 8.3  | 0.33 |
| Pput_4836 | 148550038 | phosphoglycerate kinase                                                          | 4  | 7  | 9  | 354  | 19.4 | 0.87 |
| Pput_4837 | 148550039 | D-erythrose-4-phosphate dehydrogenase                                            | 3  | 1  | 1  | 174  | 2.5  | 0.2  |
| Pput_4838 | 148550040 | transketolase                                                                    | 14 | 12 | 13 | 1039 | 12.6 | 0.73 |
| Pput_4840 | 148550042 | S-adenosylmethionine synthetase                                                  | 5  | 4  | 6  | 321  | 10.9 | 0.78 |
| Pput_4841 | 148550043 | NAD-dependent DNA ligase LigB                                                    | 1  | 1  | 1  | 27   | 1.8  | 0.06 |
| Pput_4842 | 148550044 | hypothetical protein Pput_4842                                                   | 1  | 1  | 1  | 37   | 6.2  | 0.27 |
| Pput_4845 | 148550047 | hypothetical protein Pput_4845                                                   | 13 | 1  | 1  | 692  | 8.6  | 3.36 |
| Pput_4849 | 148550051 | S-adenosyl-L-homocysteine hydrolase                                              | 7  | 2  | 6  | 465  | 6.2  | 0.15 |
| Pput_4850 | 148550052 | 5,10-methylenetetrahydrofolate reductase                                         | 2  | 2  | 2  | 155  | 10.7 | 0.25 |
| Pput_4853 | 148550055 | DEAD/DEAH box helicase domain-containing protein                                 | 7  | 1  | 3  | 329  | 2.6  | 0.05 |
| Pput_4857 | 148550059 | hypothetical protein Pput_4857                                                   | 1  | 1  | 1  | 26   | 6.9  | 0.15 |
| Pput_4858 | 148550060 | adenosylmethionine--8-amino-7-oxononanoate transaminase                          | 1  | 1  | 1  | 56   | 1.7  | 0.07 |
| Pput_4861 | 148550063 | CheW domain-containing protein                                                   | 3  | 1  | 1  | 143  | 5.7  | 0.22 |
| Pput_4864 | 148550066 | putative CheW protein                                                            | 1  | 1  | 1  | 36   | 4.3  | 0.19 |
| Pput_4867 | 148550069 | glutathione synthetase                                                           | 2  | 1  | 1  | 104  | 3.5  | 0.22 |
| Pput_4871 | 148550073 | bifunctional pyrimidine regulatory protein PyrR uracil phosphoribosyltransferase | 2  | 3  | 3  | 144  | 14.5 | 0.76 |
| Pput_4872 | 148550074 | aspartate carbamoyltransferase catalytic subunit                                 | 5  | 1  | 7  | 305  | 21.3 | 0.8  |
| Pput_4873 | 148550075 | dihydroorotase                                                                   | 8  | 4  | 6  | 519  | 11.6 | 0.38 |
| Pput_4874 | 229328216 | ATP-dependent protease peptidase subunit                                         | 3  | 6  | 5  | 421  | 27.3 | 3.18 |
| Pput_4875 | 148550077 | ATP-dependent protease ATP-binding subunit HslU                                  | 40 | 8  | 21 | 4933 | 34.2 | 2.92 |
| Pput_4877 | 148550079 | poly(R)-hydroxyalkanoic acid synthase, class II                                  | 1  | 1  | 1  | 45   | 2.9  | 0.06 |
| Pput_4878 | 148550080 | poly(3-hydroxyalkanoate) depolymerase                                            | 2  | 1  | 1  | 51   | 3.3  | 0.11 |
| Pput_4880 | 148550082 | TetR family transcriptional regulator                                            | 2  | 1  | 1  | 123  | 4.4  | 0.32 |

|           |           |                                                               |    |    |    |      |      |      |
|-----------|-----------|---------------------------------------------------------------|----|----|----|------|------|------|
| Pput_4881 | 148550083 | poly(hydroxyalkanoate) granule-associated protein             | 22 | 5  | 7  | 1658 | 24.9 | 1.58 |
| Pput_4885 | 148550087 | ubiquinone/menaquinone biosynthesis methyltransferase         | 5  | 8  | 8  | 1092 | 34.8 | 1.72 |
| Pput_4886 | 148550088 | hypothetical protein Pput_4886                                | 1  | 1  | 1  | 92   | 6.8  | 0.17 |
| Pput_4887 | 148550089 | 2-polyprenylphenol 6-hydroxylase                              | 1  | 1  | 1  | 34   | 1.7  | 0.06 |
| Pput_4888 | 148550090 | phosphoribosyl-AMP cyclohydrolase                             | 1  | 1  | 1  | 42   | 8.5  | 0.26 |
| Pput_4890 | 148550092 | twin arginine translocase protein A                           | 1  | 1  | 1  | 38   | 12.2 | 0.4  |
| Pput_4894 | 148550096 | methyl-accepting chemotaxis sensory transducer                | 2  | 8  | 8  | 202  | 13.3 | 0.52 |
| Pput_4896 | 148550098 | ABC transporter related                                       | 1  | 1  | 1  | 36   | 3.7  | 0.14 |
| Pput_4897 | 148550099 | polar amino acid ABC transporter, inner membrane subunit      | 2  | 1  | 1  | 65   | 3.4  | 0.11 |
| Pput_4898 | 148550100 | extracellular solute-binding protein                          | 3  | 2  | 2  | 168  | 9.4  | 0.27 |
| Pput_4899 | 148550101 | glucosyltransferase MdoH                                      | 12 | 3  | 7  | 894  | 4.8  | 0.12 |
| Pput_4902 | 148550104 | proline iminopeptidase                                        | 3  | 3  | 3  | 245  | 8.4  | 0.34 |
| Pput_4907 | 148550109 | urocanate hydratase                                           | 1  | 2  | 2  | 94   | 4.3  | 0.13 |
| Pput_4909 | 148550111 | GntR family transcriptional regulator                         | 1  | 3  | 3  | 157  | 15.3 | 0.47 |
| Pput_4911 | 148550113 | Lipocalin family protein                                      | 2  | 2  | 2  | 69   | 9.5  | 0.37 |
| Pput_4913 | 148550115 | hypothetical protein Pput_4913                                | 2  | 3  | 2  | 172  | 11.6 | 0.83 |
| Pput_4914 | 148550116 | fructose-1,6-bisphosphatase                                   | 5  | 6  | 7  | 264  | 16.4 | 0.78 |
| Pput_4915 | 148550117 | glycogen/starch/alpha-glucan phosphorylase                    | 21 | 1  | 14 | 1540 | 7.8  | 0.27 |
| Pput_4918 | 148550120 | GTP-binding protein TypA                                      | 10 | 13 | 15 | 837  | 21.1 | 1.01 |
| Pput_4920 | 148550122 | glutamine synthetase, type I                                  | 39 | 3  | 17 | 3177 | 27.1 | 2.03 |
| Pput_4922 | 148550124 | signal transduction histidine kinase, nitrogen specific, NtrB | 1  | 1  | 1  | 42   | 2.2  | 0.09 |
| Pput_4923 | 148550125 | nitrogen metabolism transcriptional regulator NtrC            | 3  | 1  | 4  | 164  | 6.1  | 0.23 |
| Pput_4926 | 148550128 | preprotein translocase subunit SecB                           | 4  | 4  | 3  | 254  | 23.6 | 1.2  |
| Pput_4928 | 148550130 | rhodanese domain-containing protein                           | 1  | 1  | 1  | 33   | 7.3  | 0.26 |
| Pput_4929 | 148550131 | phosphoglyceromutase                                          | 6  | 3  | 4  | 407  | 8    | 0.22 |
| Pput_4931 | 148550133 | carboxyl-terminal protease                                    | 3  | 2  | 2  | 133  | 5.3  | 0.17 |
| Pput_4933 | 148550135 | hypothetical protein Pput_4933                                | 1  | 1  | 1  | 30   | 0.5  | 0.02 |
| Pput_4935 | 148550137 | transcriptional regulator BetI                                | 2  | 6  | 4  | 272  | 18.3 | 1.08 |
| Pput_4937 | 148550139 | choline dehydrogenase                                         | 2  | 1  | 2  | 71   | 3.5  | 0.06 |
| Pput_4940 | 148550142 | potassium efflux protein KefA                                 | 1  | 1  | 1  | 31   | 1.3  | 0.03 |
| Pput_4941 | 148550143 | hypothetical protein Pput_4941                                | 2  | 1  | 2  | 124  | 4.1  | 0.14 |
| Pput_4942 | 148550144 | thioredoxin                                                   | 1  | 1  | 1  | 27   | 7.6  | 0.24 |
| Pput_4948 | 148550150 | glutamate synthase subunit beta                               | 3  | 2  | 3  | 154  | 4    | 0.3  |
| Pput_4949 | 148550151 | glutamate synthase subunit alpha                              | 5  | 5  | 6  | 333  | 3.8  | 0.12 |
| Pput_4950 | 148550152 | sporulation domain-containing protein                         | 1  | 1  | 1  | 40   | 2.4  | 0.07 |
| Pput_4951 | 148550153 | 3-dehydroquinate synthase                                     | 1  | 1  | 1  | 44   | 3.8  | 0.09 |
| Pput_4952 | 148550154 | shikimate kinase                                              | 3  | 4  | 3  | 224  | 17.4 | 1.06 |
| Pput_4958 | 148550160 | malate dehydrogenase                                          | 6  | 9  | 11 | 787  | 21.2 | 1.03 |
| Pput_4960 | 148550162 | ribosomal protein L31                                         | 1  | 1  | 1  | 35   | 10   | 0.36 |
| Pput_4962 | 148550164 | arginyl-tRNA synthetase                                       | 7  | 6  | 8  | 473  | 10.4 | 0.4  |
| Pput_4963 | 148550165 | sporulation domain-containing protein                         | 1  | 1  | 1  | 28   | 6.5  | 0.15 |
| Pput_4966 | 148550168 | twitching motility protein                                    | 1  | 1  | 1  | 26   | 2.7  | 0.1  |
| Pput_4967 | 148550169 | alanine racemase domain-containing protein                    | 2  | 5  | 5  | 263  | 28.1 | 1.07 |
| Pput_4968 | 148550170 | pyrroline-5-carboxylate reductase                             | 7  | 8  | 8  | 684  | 23.2 | 1.4  |
| Pput_4970 | 148550172 | homoserine O-acetyltransferase                                | 2  | 2  | 2  | 149  | 6.1  | 0.19 |
| Pput_4971 | 148550173 | methionine biosynthesis protein MetW                          | 1  | 1  | 1  | 26   | 6.3  | 0.16 |
| Pput_4973 | 148550175 | putative deoxyribonucleotide triphosphate pyrophosphatase     | 2  | 1  | 1  | 145  | 6.6  | 0.18 |
| Pput_4977 | 148550179 | thiazole synthase                                             | 3  | 2  | 2  | 139  | 6.7  | 0.28 |
| Pput_4981 | 148550183 | RNA polymerase factor sigma-32                                | 1  | 1  | 1  | 84   | 3.5  | 0.12 |
| Pput_4983 | 148550185 | cell division ATP-binding protein FtsE                        | 2  | 2  | 3  | 119  | 13   | 0.33 |
| Pput_4984 | 148550186 | signal recognition particle-docking protein FtsY              | 2  | 1  | 2  | 71   | 2    | 0.07 |
| Pput_4985 | 148550187 | peptidase M16 domain-containing protein                       | 1  | 1  | 1  | 40   | 2.2  | 0.07 |
| Pput_4987 | 148550189 | putative methyltransferase                                    | 1  | 1  | 1  | 27   | 6.5  | 0.17 |
| Pput_4992 | 148550194 | rhodanese domain-containing protein                           | 1  | 3  | 3  | 106  | 13   | 0.41 |
| Pput_4994 | 148550196 | aldehyde dehydrogenase                                        | 1  | 2  | 2  | 41   | 4    | 0.15 |
| Pput_4997 | 148550199 | phosphopantetheine adenylyltransferase                        | 2  | 2  | 2  | 79   | 13.8 | 0.48 |
| Pput_5001 | 148550203 | hypothetical protein Pput_5001                                | 4  | 2  | 5  | 183  | 8.3  | 0.27 |
| Pput_5002 | 148550204 | dihydroxy-acid dehydratase                                    | 4  | 6  | 7  | 324  | 11.6 | 0.39 |
| Pput_5007 | 148550209 | GTP-binding protein, HSR1-related                             | 3  | 2  | 3  | 171  | 4.4  | 0.15 |
| Pput_5012 | 148550214 | heavy metal translocating P-type ATPase                       | 1  | 1  | 1  | 76   | 1.6  | 0.05 |
| Pput_5016 | 148550218 | hypothetical protein Pput_5016                                | 1  | 1  | 1  | 28   | 2.5  | 0.06 |
| Pput_5023 | 148550225 | major facilitator transporter                                 | 1  | 1  | 1  | 29   | 2    | 0.08 |
| Pput_5028 | 148550230 | hypothetical protein Pput_5028                                | 1  | 1  | 1  | 29   | 3.8  | 0.27 |
| Pput_5037 | 148550237 | hypothetical protein Pput_5037                                | 1  | 1  | 1  | 30   | 7.4  | 0.29 |
| Pput_5043 | 148550243 | thymidylate synthase                                          | 1  | 1  | 1  | 26   | 2.9  | 0.12 |
| Pput_5049 | 148550249 | prolipoprotein diacylglycerol transferase                     | 4  | 1  | 1  | 122  | 2.6  | 0.24 |
| Pput_5052 | 148550252 | phosphoenolpyruvate-protein phosphotransferase PtsP           | 10 | 5  | 8  | 532  | 7    | 0.24 |
| Pput_5056 | 148550256 | threonine dehydratase                                         | 1  | 2  | 2  | 83   | 6    | 0.14 |
| Pput_5057 | 148550257 | ribose-5-phosphate isomerase A                                | 1  | 1  | 1  | 36   | 6.3  | 0.16 |
| Pput_5059 | 148550259 | SdiA-regulated domain-containing protein                      | 1  | 2  | 2  | 50   | 6.9  | 0.24 |
| Pput_5060 | 148550260 | fumarylacetoacetate (FAA) hydrolase                           | 2  | 1  | 1  | 90   | 5    | 0.16 |
| Pput_5061 | 148550261 | FAD linked oxidase domain-containing protein                  | 1  | 1  | 1  | 52   | 2.3  | 0.07 |
| Pput_5062 | 148550262 | D-3-phosphoglycerate dehydrogenase                            | 8  | 7  | 8  | 1019 | 19.8 | 0.76 |
| Pput_5071 | 148550271 | peptidase S45, penicillin amidase                             | 1  | 1  | 1  | 33   | 1.3  | 0.04 |
| Pput_5075 | 148550275 | sulfate ABC transporter, ATPase subunit                       | 3  | 4  | 3  | 181  | 10.6 | 0.47 |
| Pput_5080 | 148550280 | acriflavin resistance protein                                 | 1  | 1  | 1  | 36   | 0.9  | 0.03 |
| Pput_5081 | 148550281 | RND family efflux transporter MFP subunit                     | 1  | 1  | 1  | 24   | 8.5  | 0.1  |
| Pput_5086 | 148550286 | spermidine/putrescine ABC transporter ATPase subunit          | 4  | 7  | 7  | 322  | 17.6 | 0.8  |
| Pput_5089 | 148550289 | putative aminotransferase                                     | 2  | 1  | 1  | 59   | 1.8  | 0.14 |
| Pput_5090 | 148550290 | glutamate--putrescine ligase                                  | 11 | 3  | 4  | 452  | 6    | 0.24 |
| Pput_5091 | 148550291 | glutamate--putrescine ligase                                  | 5  | 2  | 2  | 255  | 3.3  | 0.07 |
| Pput_5092 | 148550292 | N-acetylglutamate synthase                                    | 3  | 3  | 4  | 163  | 4.9  | 0.25 |
| Pput_5093 | 148550293 | acetylomithine deacetylase                                    | 3  | 2  | 3  | 191  | 9.5  | 0.29 |
| Pput_5094 | 148550294 | adenylate cyclase                                             | 1  | 1  | 1  | 89   | 2.6  | 0.07 |
| Pput_5101 | 148550301 | glycine cleavage system aminomethyltransferase T              | 1  | 3  | 3  | 97   | 9.7  | 0.31 |
| Pput_5104 | 148550304 | 2-octaprenyl-3-methyl-6-methoxy-1,4-benzoquinol hydroxylase   | 4  | 7  | 7  | 555  | 15.7 | 0.5  |
| Pput_5106 | 148550306 | 2-octaprenyl-6-methoxyphenyl hydroxylase                      | 2  | 2  | 3  | 164  | 6.3  | 0.18 |
| Pput_5107 | 148550307 | peptidase M24                                                 | 4  | 4  | 4  | 350  | 11   | 0.34 |
| Pput_5111 | 148550311 | 5-formyltetrahydrofolate cyclo-ligase                         | 1  | 1  | 1  | 51   | 4.5  | 0.16 |

|           |           |                                                                                     |    |    |    |      |      |       |
|-----------|-----------|-------------------------------------------------------------------------------------|----|----|----|------|------|-------|
| Pput_5114 | 148550314 | secretion protein HlyD family protein                                               | 1  | 2  | 2  | 146  | 7.8  | 0.23  |
| Pput_5119 | 148550319 | alcohol dehydrogenase                                                               | 1  | 2  | 2  | 77   | 7.1  | 0.24  |
| Pput_5122 | 148550322 | UbiD family decarboxylase                                                           | 1  | 1  | 1  | 28   | 1.4  | 0.07  |
| Pput_5123 | 148550323 | transcription termination factor Rho                                                | 12 | 13 | 13 | 1442 | 30.3 | 1.69  |
| Pput_5125 | 148550325 | Ppx/GppA phosphatase                                                                | 11 | 4  | 6  | 700  | 7.4  | 0.38  |
| Pput_5126 | 148550326 | polyphosphate kinase                                                                | 16 | 1  | 4  | 816  | 3.3  | 0.14  |
| Pput_5129 | 148550329 | isoprenoid biosynthesis protein with amidotransferase-like domain                   | 2  | 1  | 1  | 70   | 7.8  | 0.16  |
| Pput_5136 | 148550336 | diaminopimelate decarboxylase                                                       | 5  | 1  | 4  | 259  | 8.2  | 0.27  |
| Pput_5137 | 148550337 | diaminopimelate epimerase                                                           | 1  | 1  | 1  | 42   | 2.9  | 0.12  |
| Pput_5138 | 148550338 | hypothetical protein Pput_5138                                                      | 2  | 1  | 2  | 232  | 11.9 | 0.5   |
| Pput_5140 | 148550340 | HAD family hydrolase                                                                | 4  | 1  | 3  | 171  | 7.8  | 0.32  |
| Pput_5143 | 148550343 | nitrogen regulatory protein P-II                                                    | 4  | 2  | 2  | 236  | 19.6 | 1.5   |
| Pput_5144 | 148550344 | hypothetical protein Pput_5144                                                      | 1  | 1  | 1  | 31   | 7.5  | 0.26  |
| Pput_5152 | 148550352 | ATPase domain-containing protein                                                    | 1  | 1  | 1  | 27   | 0.5  | 0.02  |
| Pput_5155 | 148550355 | AraC family transcriptional regulator                                               | 1  | 1  | 1  | 28   | 3.4  | 0.1   |
| Pput_5161 | 148550361 | protein of unknown function DUF894, DitE                                            | 2  | 1  | 2  | 64   | 2.8  | 0.06  |
| Pput_5162 | 148550362 | amidohydrolase 3                                                                    | 2  | 1  | 2  | 74   | 1.7  | 0.05  |
| Pput_5167 | 148550367 | FAD dependent oxidoreductase                                                        | 1  | 1  | 1  | 30   | 2.1  | 0.07  |
| Pput_5168 | 148550368 | aldehyde dehydrogenase                                                              | 2  | 2  | 4  | 205  | 6.9  | 0.22  |
| Pput_5173 | 148550373 | diguanylate cyclase/phosphodiesterase                                               | 1  | 2  | 2  | 84   | 4.7  | 0.12  |
| Pput_5175 | 148550375 | xanthine phosphoribosyltransferase                                                  | 3  | 4  | 4  | 227  | 25.3 | 0.99  |
| Pput_5179 | 148550379 | alanine racemase                                                                    | 1  | 3  | 2  | 95   | 6.2  | 0.2   |
| Pput_5180 | 148550380 | D-amino acid dehydrogenase small subunit                                            | 2  | 3  | 3  | 179  | 7.6  | 0.25  |
| Pput_5181 | 148550381 | AsnC family transcriptional regulator                                               | 2  | 2  | 2  | 105  | 11.1 | 0.45  |
| Pput_5183 | 148550383 | FAD dependent oxidoreductase                                                        | 1  | 1  | 1  | 56   | 2.6  | 0.08  |
| Pput_5188 | 148550388 | aldehyde dehydrogenase                                                              | 2  | 2  | 4  | 267  | 9.1  | 0.29  |
| Pput_5191 | 148550391 | 50S ribosomal protein L33                                                           | 1  | 1  | 1  | 79   | 29.4 | 0.71  |
| Pput_5192 | 148550392 | 50S ribosomal protein L28                                                           | 5  | 2  | 6  | 677  | 65.4 | 8.38  |
| Pput_5194 | 148550394 | DNA repair protein RadC                                                             | 1  | 1  | 1  | 26   | 3.4  | 0.15  |
| Pput_5195 | 148550395 | bifunctional phosphopantothoenylcysteine decarboxylase/phosphopantothenate synthase | 5  | 7  | 7  | 517  | 17.6 | 0.73  |
| Pput_5198 | 148550398 | acetylglutamate kinase                                                              | 4  | 2  | 2  | 242  | 8    | 0.25  |
| Pput_5200 | 148550400 | exodeoxyribonuclease III Xth                                                        | 3  | 3  | 3  | 218  | 15.1 | 0.43  |
| Pput_5202 | 148550402 | ribonuclease PH                                                                     | 1  | 1  | 1  | 62   | 7.9  | 0.15  |
| Pput_5203 | 148550403 | hypothetical protein Pput_5203                                                      | 2  | 3  | 6  | 409  | 21.3 | 1.44  |
| Pput_5204 | 148550404 | guanylate kinase                                                                    | 1  | 2  | 2  | 80   | 7.3  | 0.36  |
| Pput_5209 | 148550409 | LysR family transcriptional regulator                                               | 1  | 1  | 1  | 50   | 3.4  | 0.1   |
| Pput_5210 | 148550410 | DNA-directed RNA polymerase subunit omega                                           | 2  | 1  | 1  | 125  | 11.5 | 0.82  |
| Pput_5211 | 148550411 | (p)ppGpp synthetase I, SpoT/RelA                                                    | 3  | 1  | 6  | 215  | 4.7  | 0.2   |
| Pput_5212 | 148550412 | putative endoribonuclease L-PSP                                                     | 2  | 2  | 1  | 70   | 7.1  | 0.58  |
| Pput_5214 | 148550414 | NAD-dependent epimerase/dehydratase                                                 | 1  | 1  | 1  | 43   | 4.6  | 0.12  |
| Pput_5215 | 148550415 | TonB-system energizer ExbB type-1                                                   | 1  | 1  | 1  | 33   | 2.8  | 0.11  |
| Pput_5218 | 148550418 | LysR family transcriptional regulator                                               | 3  | 3  | 3  | 348  | 10.7 | 0.37  |
| Pput_5219 | 148550419 | ATP-dependent DNA helicase RecG                                                     | 1  | 1  | 1  | 31   | 1.7  | 0.05  |
| Pput_5220 | 148550420 | putative signal transduction protein                                                | 1  | 2  | 2  | 121  | 4.5  | 0.15  |
| Pput_5222 | 148550422 | histone family protein DNA-binding protein                                          | 11 | 7  | 7  | 739  | 37.4 | 11.82 |
| Pput_5223 | 148550423 | FAD-dependent pyridine nucleotide-disulphide oxidoreductase                         | 1  | 1  | 1  | 38   | 2.4  | 0.09  |
| Pput_5229 | 148550429 | PAS/PAC sensor signal transduction histidine kinase                                 | 1  | 1  | 1  | 37   | 2.1  | 0.08  |
| Pput_5232 | 148550432 | response regulator receiver protein                                                 | 1  | 1  | 1  | 25   | 7.5  | 0.12  |
| Pput_5233 | 148550433 | phosphate uptake regulator, PhoU                                                    | 3  | 2  | 5  | 190  | 8.2  | 0.28  |
| Pput_5234 | 148550434 | phosphate ABC transporter, ATPase subunit                                           | 1  | 2  | 2  | 66   | 4    | 0.26  |
| Pput_5235 | 148550435 | phosphate ABC transporter, inner membrane subunit PstA                              | 1  | 1  | 1  | 27   | 0.9  | 0.06  |
| Pput_5238 | 148550438 | major facilitator transporter                                                       | 1  | 1  | 1  | 27   | 3.7  | 0.08  |
| Pput_5241 | 148550441 | hypothetical protein Pput_5241                                                      | 1  | 1  | 1  | 28   | 5.1  | 0.2   |
| Pput_5243 | 148550443 | phosphoribosylaminoimidazole carboxylase ATPase subunit                             | 1  | 2  | 2  | 102  | 6.4  | 0.2   |
| Pput_5244 | 148550444 | phosphoribosylaminoimidazole carboxylase, catalytic subunit                         | 1  | 1  | 1  | 30   | 8.6  | 0.23  |
| Pput_5247 | 148550447 | aspartate ammonia-lyase                                                             | 1  | 1  | 1  | 84   | 2.5  | 0.07  |
| Pput_5255 | 148550455 | pyruvate carboxylase subunit B                                                      | 25 | 3  | 9  | 1516 | 9.1  | 0.47  |
| Pput_5256 | 148550456 | acetyl-CoA carboxylase subunit A                                                    | 7  | 1  | 12 | 683  | 20.6 | 0.99  |
| Pput_5259 | 148550459 | glucose-6-phosphate 1-dehydrogenase                                                 | 1  | 1  | 1  | 36   | 2.1  | 0.07  |
| Pput_5260 | 148550460 | DNA-dependent helicase II                                                           | 3  | 3  | 4  | 258  | 4.8  | 0.14  |
| Pput_5261 | 148550461 | import inner membrane translocase, subunit Tim44                                    | 2  | 3  | 3  | 285  | 13.8 | 0.4   |
| Pput_5262 | 148550462 | hypothetical protein Pput_5262                                                      | 1  | 1  | 1  | 52   | 6.7  | 0.25  |
| Pput_5265 | 148550465 | pyridoxamine kinase                                                                 | 2  | 1  | 1  | 90   | 5.5  | 0.12  |
| Pput_5273 | 148550473 | cyclopropane-fatty-acyl-phospholipid synthase                                       | 1  | 1  | 1  | 33   | 2.2  | 0.08  |
| Pput_5274 | 148550474 | dihydrolipoamide dehydrogenase                                                      | 2  | 2  | 3  | 183  | 5.4  | 0.4   |
| Pput_5278 | 148550478 | short-chain dehydrogenase/reductase SDR                                             | 1  | 2  | 2  | 93   | 9.2  | 0.32  |
| Pput_5279 | 148550479 | LysR family transcriptional regulator                                               | 1  | 1  | 1  | 29   | 3    | 0.11  |
| Pput_5288 | 148550488 | regulatory protein, IclR                                                            | 1  | 1  | 1  | 28   | 3.6  | 0.13  |
| Pput_5291 | 148550491 | glucosamine--fructose-6-phosphate aminotransferase                                  | 1  | 2  | 2  | 74   | 3.9  | 0.11  |
| Pput_5293 | 148550493 | UDP-N-acetylglucosamine pyrophosphorylase                                           | 3  | 1  | 3  | 162  | 5.1  | 0.16  |
| Pput_5294 | 148550494 | F0F1 ATP synthase subunit epsilon                                                   | 4  | 2  | 3  | 414  | 20.9 | 1.03  |
| Pput_5295 | 148550495 | F0F1 ATP synthase subunit beta                                                      | 31 | 7  | 20 | 4911 | 38.4 | 2.99  |
| Pput_5296 | 148550496 | F0F1 ATP synthase subunit gamma                                                     | 6  | 6  | 6  | 431  | 18.9 | 0.97  |
| Pput_5297 | 148550497 | F0F1 ATP synthase subunit alpha                                                     | 34 | 23 | 26 | 5887 | 32.1 | 2.91  |
| Pput_5298 | 148550498 | F0F1 ATP synthase subunit delta                                                     | 2  | 3  | 3  | 132  | 15.7 | 0.73  |
| Pput_5299 | 148550499 | F0F1 ATP synthase subunit B                                                         | 34 | 13 | 13 | 4598 | 51.3 | 6.81  |
| Pput_5303 | 148550503 | parB-like partition protein                                                         | 1  | 6  | 5  | 128  | 19.3 | 0.94  |
| Pput_5304 | 148550504 | cobyrinic acid a,c-diamide synthase                                                 | 3  | 1  | 1  | 212  | 5.3  | 0.26  |
| Pput_5308 | 148550508 | tRNA modification GTPase TrmE                                                       | 2  | 4  | 5  | 220  | 8.8  | 0.34  |
| Pput_5309 | 148550509 | putative inner membrane protein translocase component YidC                          | 7  | 2  | 3  | 656  | 6.8  | 0.19  |
| Pput_5311 | 148550511 | ribonuclease P                                                                      | 1  | 1  | 1  | 84   | 14.2 | 0.26  |

| Pput name | Accession # | Protein name                                                               | Total no. of<br>detected<br>gel slices | Total no. of<br>accepted<br>peptides | No. of<br>unique<br>peptides | Sum of<br>macot score | % of<br>sequence<br>coverage | Sum of<br>emPAI |
|-----------|-------------|----------------------------------------------------------------------------|----------------------------------------|--------------------------------------|------------------------------|-----------------------|------------------------------|-----------------|
| Pput_0001 | 148545260   | chromosomal replication initiation protein                                 | 1                                      | 1                                    | 1                            | 55                    | 2.2                          | 0.07            |
| Pput_0002 | 148545261   | DNA polymerase III subunit beta                                            | 2                                      | 10                                   | 12                           | 683                   | 25.3                         | 3.04            |
| Pput_0003 | 148545262   | recombination protein F                                                    | 2                                      | 1                                    | 1                            | 64                    | 3                            | 0.18            |
| Pput_0004 | 148545263   | DNA gyrase subunit B                                                       | 3                                      | 5                                    | 5                            | 283                   | 7.3                          | 0.34            |
| Pput_0006 | 148545265   | integrase catalytic subunit                                                | 1                                      | 1                                    | 1                            | 29                    | 1.8                          | 0.05            |
| Pput_0009 | 148545268   | hypothetical protein Pput_0009                                             | 3                                      | 1                                    | 2                            | 115                   | 9.2                          | 0.88            |
| Pput_0011 | 148545270   | hypothetical protein Pput_0011                                             | 1                                      | 1                                    | 1                            | 27                    | 11.3                         | 0.24            |
| Pput_0013 | 148545272   | copper resistance B precursor                                              | 1                                      | 1                                    | 1                            | 28                    | 4.3                          | 0.09            |
| Pput_0014 | 148545273   | hypothetical protein Pput_0014                                             | 1                                      | 1                                    | 1                            | 29                    | 4.4                          | 0.32            |
| Pput_0016 | 148545275   | hypothetical protein Pput_0016                                             | 5                                      | 1                                    | 1                            | 119                   | 7.4                          | 2.83            |
| Pput_0017 | 148545276   | two component heavy metal response transcriptional regulator               | 1                                      | 2                                    | 2                            | 34                    | 10.7                         | 0.32            |
| Pput_0020 | 148545279   | outer membrane efflux protein                                              | 1                                      | 1                                    | 1                            | 30                    | 1.9                          | 0.08            |
| Pput_0021 | 148545280   | RND family efflux transporter MFP subunit                                  | 3                                      | 1                                    | 2                            | 85                    | 1                            | 0.21            |
| Pput_0022 | 148545281   | CzcA family heavy metal efflux protein                                     | 1                                      | 1                                    | 1                            | 33                    | 1.1                          | 0.03            |
| Pput_0028 | 148545286   | YVTN beta-propeller repeat-containing protein                              | 4                                      | 8                                    | 6                            | 437                   | 17.6                         | 2               |
| Pput_0043 | 148545300   | two component heavy metal response transcriptional regulator               | 1                                      | 6                                    | 5                            | 139                   | 21.9                         | 1               |
| Pput_0044 | 148545301   | heavy metal sensor signal transduction histidine kinase                    | 1                                      | 1                                    | 1                            | 33                    | 2.5                          | 0.07            |
| Pput_0051 | 148545308   | phosphate-selective porin O and P                                          | 1                                      | 1                                    | 1                            | 28                    | 3.7                          | 0.08            |
| Pput_0053 | 148545310   | hypothetical protein Pput_0053                                             | 1                                      | 1                                    | 1                            | 28                    | 2.9                          | 0.1             |
| Pput_0059 | 148545316   | outer membrane efflux protein                                              | 1                                      | 1                                    | 1                            | 28                    | 2                            | 0.09            |
| Pput_0060 | 148545317   | outer membrane porin                                                       | 2                                      | 1                                    | 1                            | 72                    | 2.7                          | 0.16            |
| Pput_0068 | 148545325   | beta-lactamase domain-containing protein                                   | 3                                      | 3                                    | 3                            | 140                   | 6.5                          | 0.89            |
| Pput_0071 | 148545328   | LysR family transcriptional regulator                                      | 1                                      | 1                                    | 1                            | 30                    | 1.7                          | 0.11            |
| Pput_0074 | 148545331   | phospholipid/glycerol acyltransferase                                      | 3                                      | 2                                    | 2                            | 108                   | 6.9                          | 0.54            |
| Pput_0076 | 148545333   | glycyl-tRNA synthetase subunit beta                                        | 2                                      | 9                                    | 10                           | 487                   | 12.9                         | 0.94            |
| Pput_0077 | 148545334   | glycyl-tRNA synthetase subunit alpha                                       | 4                                      | 5                                    | 6                            | 420                   | 15.9                         | 1.5             |
| Pput_0078 | 148545335   | DNA-3-methyladenine glycosylase I                                          | 1                                      | 1                                    | 1                            | 29                    | 5.5                          | 0.18            |
| Pput_0079 | 148545336   | lipid A biosynthesis lauroyl acyltransferase                               | 1                                      | 1                                    | 1                            | 28                    | 4.7                          | 0.11            |
| Pput_0081 | 148545338   | potassium transporter peripheral membrane component                        | 2                                      | 5                                    | 5                            | 119                   | 12.5                         | 0.51            |
| Pput_0082 | 148545339   | sun protein                                                                | 1                                      | 1                                    | 1                            | 31                    | 3.7                          | 0.08            |
| Pput_0084 | 148545341   | peptide deformylase                                                        | 1                                      | 2                                    | 2                            | 48                    | 15.5                         | 0.43            |
| Pput_0086 | 148545343   | SUA5/yciO/yrdC domain-containing protein                                   | 3                                      | 3                                    | 4                            | 198                   | 9.7                          | 1.23            |
| Pput_0088 | 148545345   | alcohol dehydrogenase                                                      | 4                                      | 6                                    | 6                            | 310                   | 14.8                         | 1.58            |
| Pput_0089 | 148545346   | coproporphyrinogen III oxidase                                             | 2                                      | 2                                    | 2                            | 118                   | 8.6                          | 0.34            |
| Pput_0090 | 148545347   | shikimate 5-dehydrogenase                                                  | 2                                      | 2                                    | 3                            | 143                   | 7.7                          | 0.4             |
| Pput_0094 | 148545351   | LysR family transcriptional regulator                                      | 1                                      | 1                                    | 1                            | 29                    | 4.7                          | 0.11            |
| Pput_0097 | 148545354   | tryptophan synthase subunit alpha                                          | 8                                      | 7                                    | 7                            | 923                   | 23.4                         | 4.18            |
| Pput_0098 | 148545355   | tryptophan synthase subunit beta                                           | 3                                      | 4                                    | 4                            | 278                   | 8.4                          | 0.94            |
| Pput_0099 | 148545356   | LysR family transcriptional regulator                                      | 1                                      | 1                                    | 1                            | 26                    | 3                            | 0.12            |
| Pput_0103 | 148545360   | luciferase family protein                                                  | 2                                      | 9                                    | 8                            | 494                   | 19.5                         | 2.37            |
| Pput_0104 | 148545361   | OsmC family protein                                                        | 1                                      | 2                                    | 1                            | 35                    | 8.5                          | 0.27            |
| Pput_0106 | 148545363   | hypothetical protein Pput_0106                                             | 5                                      | 6                                    | 8                            | 669                   | 43.1                         | 5.92            |
| Pput_0109 | 148545366   | HAD family hydrolase                                                       | 2                                      | 1                                    | 2                            | 84                    | 3.4                          | 0.28            |
| Pput_0110 | 148545367   | carbonic anhydrase                                                         | 1                                      | 2                                    | 2                            | 122                   | 13.7                         | 0.43            |
| Pput_0111 | 148545368   | oligopeptidase A                                                           | 3                                      | 10                                   | 9                            | 399                   | 11.8                         | 0.75            |
| Pput_0115 | 148545372   | carbonate dehydratase                                                      | 6                                      | 13                                   | 11                           | 818                   | 43.1                         | 9.31            |
| Pput_0118 | 148545375   | hypothetical protein Pput_0118                                             | 3                                      | 3                                    | 4                            | 232                   | 18.8                         | 1.07            |
| Pput_0119 | 148545376   | cytochrome c oxidase, subunit II                                           | 1                                      | 1                                    | 1                            | 39                    | 3.5                          | 0.09            |
| Pput_0129 | 148545386   | NLPA lipoprotein                                                           | 2                                      | 3                                    | 4                            | 201                   | 13.3                         | 0.94            |
| Pput_0131 | 148545388   | ABC transporter related                                                    | 2                                      | 1                                    | 2                            | 67                    | 3.3                          | 0.2             |
| Pput_0133 | 148545390   | hypothetical protein Pput_0133                                             | 4                                      | 8                                    | 7                            | 554                   | 29.8                         | 3.42            |
| Pput_0136 | 148545393   | ferric uptake regulator family protein                                     | 1                                      | 1                                    | 1                            | 31                    | 8.1                          | 0.21            |
| Pput_0137 | 148545394   | periplasmic solute binding protein                                         | 3                                      | 2                                    | 2                            | 271                   | 8.9                          | 0.46            |
| Pput_0138 | 148545395   | homoserine kinase                                                          | 1                                      | 2                                    | 2                            | 40                    | 5.1                          | 0.22            |
| Pput_0140 | 148545397   | DNA polymerase I                                                           | 2                                      | 7                                    | 6                            | 282                   | 5.7                          | 0.48            |
| Pput_0141 | 148545398   | ribosome biogenesis GTP-binding protein YsxC                               | 3                                      | 6                                    | 5                            | 383                   | 24.3                         | 2.38            |
| Pput_0143 | 148545400   | cytochrome c, class I                                                      | 2                                      | 1                                    | 2                            | 54                    | 4.9                          | 0.36            |
| Pput_0145 | 148545402   | endonuclease/exonuclease/phosphatase                                       | 1                                      | 1                                    | 1                            | 41                    | 2.8                          | 0.12            |
| Pput_0147 | 148545404   | N-acetylmuramoyl-L-alanine amidase                                         | 2                                      | 6                                    | 7                            | 257                   | 24                           | 1.9             |
| Pput_0149 | 148545406   | multi-sensor signal transduction histidine kinase                          | 2                                      | 1                                    | 1                            | 105                   | 1.7                          | 0.12            |
| Pput_0150 | 148545407   | two component, sigma54 specific, Fis family transcriptional regulator      | 1                                      | 3                                    | 3                            | 103                   | 6.5                          | 0.24            |
| Pput_0151 | 148545408   | transport-associated                                                       | 2                                      | 4                                    | 5                            | 136                   | 16.1                         | 0.89            |
| Pput_0157 | 148545414   | ABC-type uncharacterized transport system auxiliary component-like protein | 1                                      | 4                                    | 3                            | 89                    | 15.2                         | 0.58            |
| Pput_0158 | 148545415   | hypothetical protein Pput_0158                                             | 1                                      | 1                                    | 1                            | 25                    | 5.4                          | 0.11            |
| Pput_0159 | 148545416   | ABC transporter related                                                    | 1                                      | 2                                    | 2                            | 46                    | 6.8                          | 0.28            |
| Pput_0163 | 148545420   | sodium-dependent inorganic phosphate (Pi) transporter                      | 2                                      | 1                                    | 1                            | 56                    | 1.3                          | 0.12            |
| Pput_0167 | 148545424   | hypothetical protein Pput_0167                                             | 1                                      | 1                                    | 1                            | 26                    | 1.2                          | 0.05            |
| Pput_0172 | 148545429   | Acetyl-CoA hydrolase                                                       | 2                                      | 1                                    | 2                            | 84                    | 2                            | 0.14            |
| Pput_0175 | 148545432   | NAD(P)(+) transhydrogenase (AB-specific)                                   | 2                                      | 3                                    | 3                            | 215                   | 6.4                          | 0.52            |
| Pput_0176 | 148545433   | LysR family transcriptional regulator                                      | 2                                      | 1                                    | 2                            | 61                    | 3.3                          | 0.22            |
| Pput_0177 | 148545434   | acyl-CoA dehydrogenase domain-containing protein                           | 3                                      | 9                                    | 9                            | 300                   | 21.6                         | 1.28            |
| Pput_0178 | 148545435   | Formyl-CoA transferase                                                     | 1                                      | 1                                    | 1                            | 46                    | 3.2                          | 0.09            |
| Pput_0180 | 148545437   | anti-FecI sigma factor, FecR                                               | 1                                      | 1                                    | 1                            | 29                    | 3.5                          | 0.1             |
| Pput_0182 | 148545439   | GntR family transcriptional regulator                                      | 2                                      | 6                                    | 6                            | 206                   | 32.8                         | 1.45            |
| Pput_0184 | 148545441   | diguanylate cyclase/phosphodiesterase                                      | 3                                      | 6                                    | 8                            | 207                   | 8.6                          | 0.57            |
| Pput_0186 | 148545443   | ABC transporter related                                                    | 3                                      | 2                                    | 3                            | 114                   | 2.5                          | 0.2             |
| Pput_0189 | 148545446   | hypothetical protein Pput_0189                                             | 1                                      | 1                                    | 1                            | 28                    | 7.1                          | 0.32            |
| Pput_0196 | 148545453   | MarR family transcriptional regulator                                      | 1                                      | 1                                    | 1                            | 30                    | 5.3                          | 0.24            |
| Pput_0197 | 148545454   | fusaric acid resistance protein region                                     | 1                                      | 1                                    | 1                            | 25                    | 0.9                          | 0.05            |
| Pput_0199 | 148545456   | secretion protein HlyD family protein                                      | 2                                      | 2                                    | 3                            | 68                    | 7.2                          | 0.5             |
| Pput_0205 | 148545462   | glutathione S-transferase domain-containing protein                        | 1                                      | 5                                    | 4                            | 156                   | 17.3                         | 0.78            |
| Pput_0206 | 148545463   | argininosuccinate lyase                                                    | 3                                      | 11                                   | 10                           | 382                   | 18.2                         | 1.12            |
| Pput_0207 | 148545464   | LytTR family two component transcriptional regulator                       | 8                                      | 4                                    | 8                            | 788                   | 13.8                         | 3.91            |
| Pput_0208 | 148545465   | porphobilinogen deaminase                                                  | 3                                      | 2                                    | 2                            | 168                   | 8                            | 0.59            |
| Pput_0209 | 148545466   | uroporphyrinogen-III synthase                                              | 1                                      | 3                                    | 3                            | 90                    | 12.5                         | 0.48            |
| Pput_0210 | 148545467   | protein of unknown function DUF513, hemX                                   | 3                                      | 9                                    | 11                           | 667                   | 32.5                         | 2.61            |

|           |           |                                                                        |    |    |    |      |      |       |
|-----------|-----------|------------------------------------------------------------------------|----|----|----|------|------|-------|
| Pput_0211 | 148545468 | HemY domain-containing protein                                         | 4  | 16 | 15 | 614  | 35.7 | 2.74  |
| Pput_0213 | 148545470 | anti-RNA polymerase sigma 70 factor                                    | 2  | 3  | 2  | 184  | 12.2 | 0.94  |
| Pput_0215 | 148545472 | alginate regulatory protein AlgP                                       | 8  | 17 | 14 | 999  | 32.9 | 7.23  |
| Pput_0216 | 148545473 | hypothetical protein Pput_0216                                         | 1  | 1  | 1  | 27   | 8.2  | 0.22  |
| Pput_0220 | 148545477 | band 7 protein                                                         | 2  | 3  | 3  | 97   | 12.3 | 0.59  |
| Pput_0225 | 148545482 | CBS domain-containing protein                                          | 1  | 2  | 2  | 71   | 15.2 | 0.54  |
| Pput_0228 | 148545484 | succinate-semialdehyde dehydrogenase I                                 | 2  | 11 | 12 | 640  | 21   | 2.34  |
| Pput_0229 | 148545485 | 4-aminobutyrate aminotransferase                                       | 3  | 19 | 16 | 918  | 52.2 | 3.64  |
| Pput_0232 | 148545488 | fatty acid desaturase                                                  | 1  | 1  | 1  | 28   | 3.3  | 0.08  |
| Pput_0235 | 148545491 | ABC transporter related                                                | 2  | 1  | 1  | 58   | 2.4  | 0.18  |
| Pput_0240 | 148545496 | putative amino-acid ABC transporter ATP-binding protein YecC           | 2  | 3  | 3  | 150  | 11.9 | 0.76  |
| Pput_0241 | 148545497 | polar amino acid ABC transporter, inner membrane subunit               | 1  | 1  | 1  | 27   | 3.6  | 0.15  |
| Pput_0242 | 148545498 | cystine transporter subunit                                            | 3  | 11 | 12 | 449  | 43.6 | 4.41  |
| Pput_0243 | 148545499 | Serine O-acetyltransferase                                             | 3  | 4  | 4  | 225  | 11   | 1.17  |
| Pput_0249 | 148545505 | outer membrane porin                                                   | 5  | 15 | 17 | 1002 | 41.7 | 3.74  |
| Pput_0250 | 148545506 | peroxidase                                                             | 4  | 3  | 3  | 172  | 13.2 | 1.22  |
| Pput_0252 | 148545508 | aliphatic sulfonate ABC transporter periplasmic ligand-binding protein | 1  | 1  | 1  | 27   | 2.8  | 0.11  |
| Pput_0257 | 148545513 | TetR family transcriptional regulator                                  | 2  | 2  | 2  | 131  | 9.5  | 0.51  |
| Pput_0258 | 148545514 | glutamate--cysteine ligase                                             | 1  | 3  | 3  | 69   | 7.2  | 0.2   |
| Pput_0260 | 148545516 | RNA-binding S1 domain-containing protein                               | 2  | 1  | 2  | 62   | 0.9  | 0.08  |
| Pput_0261 | 148545517 | osmolarity response regulator                                          | 5  | 11 | 9  | 448  | 26   | 5.1   |
| Pput_0262 | 148545518 | integral membrane sensor signal transduction histidine kinase          | 2  | 2  | 3  | 68   | 5.3  | 0.24  |
| Pput_0263 | 148545519 | alpha-L--glutamate ligase                                              | 3  | 5  | 4  | 301  | 13.3 | 1.35  |
| Pput_0265 | 148545521 | RNA-binding S4 domain-containing protein                               | 3  | 2  | 4  | 156  | 14.3 | 1.42  |
| Pput_0267 | 148545523 | Hsp33-like chaperonin                                                  | 9  | 4  | 5  | 568  | 14   | 2.32  |
| Pput_0268 | 148545524 | phosphoenolpyruvate carboxykinase                                      | 3  | 12 | 13 | 675  | 22.2 | 2.23  |
| Pput_0275 | 148545531 | ADP-ribose diphosphatase NudE                                          | 2  | 1  | 2  | 61   | 8    | 0.36  |
| Pput_0276 | 148545532 | 3-(2~),5~-bisphosphate nucleotidase                                    | 1  | 1  | 1  | 40   | 4.8  | 0.13  |
| Pput_0277 | 148545533 | thioesterase domain-containing protein                                 | 2  | 3  | 3  | 156  | 17.9 | 1.35  |
| Pput_0278 | 148545534 | two component, sigma54 specific, Fis family transcriptional regulator  | 2  | 4  | 4  | 152  | 8.8  | 0.57  |
| Pput_0280 | 148545536 | dTDP-4-dehydroorhamnose 3,5-epimerase                                  | 2  | 5  | 5  | 264  | 32.6 | 2.05  |
| Pput_0283 | 148545539 | TonB-dependent siderophore receptor                                    | 1  | 1  | 1  | 28   | 1.2  | 0.05  |
| Pput_0284 | 148545540 | outer membrane porin                                                   | 1  | 6  | 6  | 223  | 16.4 | 0.57  |
| Pput_0287 | 148545543 | two component transcriptional regulator                                | 1  | 1  | 1  | 28   | 2.1  | 0.14  |
| Pput_0288 | 148545544 | TonB-dependent siderophore receptor                                    | 1  | 1  | 1  | 26   | 1.2  | 0.04  |
| Pput_0300 | 148545555 | extracellular solute-binding protein                                   | 3  | 2  | 3  | 101  | 9.6  | 0.57  |
| Pput_0301 | 148545556 | ABC transporter related                                                | 2  | 4  | 4  | 175  | 15.2 | 0.78  |
| Pput_0307 | 148545562 | AsmA family protein                                                    | 3  | 10 | 10 | 429  | 12.6 | 0.82  |
| Pput_0309 | 148545564 | imidazoleglycerol-phosphate dehydratase                                | 3  | 6  | 6  | 292  | 14.8 | 2.93  |
| Pput_0310 | 148545565 | imidazole glycerol phosphate synthase subunit HisH                     | 2  | 4  | 4  | 110  | 11.8 | 0.97  |
| Pput_0312 | 148545567 | imidazole-4-carboxamide isomerase                                      | 3  | 4  | 5  | 242  | 14.7 | 1.02  |
| Pput_0313 | 148545568 | imidazole glycerol phosphate synthase subunit HisF                     | 2  | 3  | 3  | 111  | 10.9 | 0.62  |
| Pput_0314 | 148545569 | glycine betaine/L--proline ABC transporter, ATPase subunit             | 1  | 5  | 5  | 136  | 15.1 | 0.5   |
| Pput_0316 | 148545571 | substrate-binding region of ABC-type glycine betaine transport system  | 6  | 3  | 4  | 291  | 12.4 | 0.91  |
| Pput_0333 | 148545588 | electron transfer flavoprotein, alpha subunit-like protein             | 1  | 1  | 1  | 27   | 1.7  | 0.09  |
| Pput_0335 | 148545590 | hypothetical protein Pput_0335                                         | 1  | 1  | 1  | 29   | 1.8  | 0.12  |
| Pput_0336 | 148545591 | Rieske (2Fe-2S) domain-containing protein                              | 1  | 1  | 1  | 24   | 2.1  | 0.08  |
| Pput_0339 | 148545594 | methyl-accepting chemotaxis sensory transducer                         | 8  | 1  | 1  | 320  | 1.8  | 0.48  |
| Pput_0342 | 148545597 | methyl-accepting chemotaxis sensory transducer                         | 1  | 1  | 1  | 29   | 2    | 0.05  |
| Pput_0343 | 148545598 | threonine aldolase                                                     | 3  | 3  | 4  | 277  | 7.8  | 0.84  |
| Pput_0344 | 148545599 | serine hydroxymethyltransferase                                        | 3  | 4  | 3  | 175  | 6.2  | 0.43  |
| Pput_0345 | 148545600 | sarcosine oxidase beta subunit family protein                          | 1  | 1  | 1  | 29   | 2.6  | 0.08  |
| Pput_0347 | 148545602 | sarcosine oxidase alpha subunit family protein                         | 2  | 2  | 3  | 86   | 2.8  | 0.14  |
| Pput_0349 | 148545604 | formyltetrahydrofolate deformylase                                     | 2  | 1  | 2  | 76   | 2.8  | 0.24  |
| Pput_0350 | 148545605 | formaldehyde dehydrogenase, glutathione-independent                    | 3  | 1  | 2  | 131  | 4.3  | 0.27  |
| Pput_0356 | 148545611 | hypothetical protein Pput_0356                                         | 3  | 1  | 1  | 162  | 5.4  | 0.63  |
| Pput_0358 | 148545613 | sensory histidine kinase CreC                                          | 2  | 1  | 1  | 60   | 1.7  | 0.14  |
| Pput_0360 | 148545615 | glutathione S-transferase domain-containing protein                    | 2  | 6  | 7  | 210  | 28   | 1.65  |
| Pput_0361 | 148545616 | methionine sulfoxide reductase A                                       | 4  | 5  | 5  | 342  | 22.5 | 2.06  |
| Pput_0363 | 148545618 | dihydrolipoamide acetyltransferase                                     | 16 | 16 | 9  | 1742 | 15.5 | 3.46  |
| Pput_0364 | 148545619 | pyruvate dehydrogenase subunit E1                                      | 53 | 67 | 39 | 7614 | 33.9 | 14.81 |
| Pput_0365 | 148545620 | (glutamate--ammonia-ligase) adenyllyltransferase                       | 2  | 5  | 6  | 224  | 5.3  | 0.32  |
| Pput_0366 | 148545621 | lipopolysaccharide heptosyltransferase II                              | 4  | 6  | 6  | 326  | 14.9 | 1.53  |
| Pput_0367 | 148545622 | lipopolysaccharide heptosyltransferase I                               | 2  | 3  | 3  | 193  | 8.2  | 0.4   |
| Pput_0368 | 148545623 | glycosyl transferase, group 1                                          | 3  | 4  | 5  | 177  | 9.9  | 0.59  |
| Pput_0369 | 148545624 | lipopolysaccharide kinase                                              | 3  | 3  | 4  | 200  | 13.4 | 1.12  |
| Pput_0370 | 148545625 | lipopolysaccharide kinase                                              | 1  | 1  | 1  | 25   | 3.3  | 0.13  |
| Pput_0371 | 148545626 | lipopolysaccharide kinase                                              | 3  | 2  | 2  | 213  | 9.6  | 0.54  |
| Pput_0372 | 148545627 | hypothetical protein Pput_0372                                         | 1  | 1  | 1  | 41   | 1.9  | 0.07  |
| Pput_0373 | 148545628 | hypothetical protein Pput_0373                                         | 1  | 1  | 1  | 27   | 1.3  | 0.03  |
| Pput_0379 | 148545634 | DNA polymerase III, epsilon subunit                                    | 1  | 3  | 3  | 45   | 11.4 | 0.5   |
| Pput_0380 | 148545635 | CBS domain-containing protein                                          | 6  | 8  | 8  | 520  | 9.3  | 0.77  |
| Pput_0381 | 148545636 | response regulator receiver protein                                    | 1  | 1  | 1  | 26   | 7.7  | 0.19  |
| Pput_0382 | 148545637 | malate synthase G                                                      | 4  | 10 | 11 | 829  | 14.6 | 1.28  |
| Pput_0383 | 148545638 | amino acid-binding ACT domain-containing protein                       | 3  | 3  | 2  | 316  | 15.1 | 1.38  |
| Pput_0385 | 148545640 | serine/threonine protein kinase                                        | 1  | 3  | 3  | 73   | 9    | 0.33  |
| Pput_0386 | 148545641 | ModE family transcriptional regulator                                  | 1  | 1  | 1  | 30   | 7.1  | 0.14  |
| Pput_0390 | 148545645 | carboxylesterase                                                       | 1  | 1  | 1  | 37   | 4.5  | 0.14  |
| Pput_0392 | 148545647 | dithiobiotin synthetase                                                | 1  | 1  | 1  | 32   | 7.1  | 0.16  |
| Pput_0394 | 148545649 | acyl-CoA dehydrogenase domain-containing protein                       | 3  | 9  | 9  | 381  | 15.1 | 0.94  |
| Pput_0396 | 148545651 | acyl-CoA dehydrogenase domain-containing protein                       | 3  | 8  | 9  | 437  | 14   | 1.08  |
| Pput_0400 | 148545655 | peptidase S9 prolyl oligopeptidase                                     | 1  | 4  | 3  | 71   | 4.1  | 0.17  |
| Pput_0403 | 148545658 | pyrroloquinoline quinone biosynthesis protein PqqC                     | 2  | 2  | 2  | 121  | 11.6 | 0.41  |
| Pput_0404 | 148545659 | pyrroloquinoline quinone biosynthesis protein PqqB                     | 1  | 1  | 1  | 41   | 4.3  | 0.11  |
| Pput_0406 | 148545661 | Nitrilase/cyanide hydratase and apolipoprotein N-acyltransferase       | 5  | 4  | 4  | 281  | 11.4 | 1.23  |
| Pput_0407 | 148545662 | amine oxidase                                                          | 2  | 3  | 3  | 185  | 6.4  | 0.25  |
| Pput_0409 | 148545664 | hypothetical protein Pput_0409                                         | 3  | 2  | 2  | 175  | 9.8  | 0.76  |
| Pput_0412 | 148545667 | hypothetical protein Pput_0412                                         | 1  | 1  | 1  | 40   | 6.4  | 0.18  |
| Pput_0413 | 148545668 | hypothetical protein Pput_0413                                         | 1  | 1  | 1  | 27   | 3.4  | 0.09  |

|           |           |                                                                      |    |     |    |       |      |        |
|-----------|-----------|----------------------------------------------------------------------|----|-----|----|-------|------|--------|
| Pput_0420 | 148545672 | diguanylate cyclase/phosphodiesterase with PAS/PAC and GAF sensor(s) | 2  | 3   | 4  | 92    | 2.2  | 0.13   |
| Pput_0421 | 148545673 | RNA polymerase sigma factor RpoD                                     | 7  | 15  | 15 | 681   | 18.8 | 2.2    |
| Pput_0423 | 148545675 | 30S ribosomal protein S21                                            | 2  | 4   | 5  | 245   | 50.7 | 8.5    |
| Pput_0424 | 148545676 | metalloendopeptidase glycoprotease family                            | 2  | 1   | 1  | 65    | 2.6  | 0.2    |
| Pput_0425 | 148545677 | putative glycerol-3-phosphate acyltransferase PlsY                   | 2  | 1   | 1  | 124   | 7.4  | 0.38   |
| Pput_0428 | 148545680 | 2~nucleotidase/phosphatase                                           | 2  | 1   | 2  | 63    | 4.9  | 0.18   |
| Pput_0429 | 148545681 | SpoVR family protein                                                 | 3  | 1   | 2  | 93    | 1.3  | 0.18   |
| Pput_0430 | 148545682 | hypothetical protein Pput_0430                                       | 3  | 7   | 8  | 307   | 13.7 | 0.98   |
| Pput_0431 | 148545683 | putative serine protein kinase, PrkA                                 | 27 | 31  | 30 | 3214  | 30.8 | 9.02   |
| Pput_0435 | 148545687 | dimethyladenosine transferase                                        | 2  | 3   | 2  | 163   | 9.7  | 0.56   |
| Pput_0436 | 148545688 | 4-hydroxythreonine-4-phosphate dehydrogenase                         | 1  | 2   | 2  | 56    | 7.6  | 0.23   |
| Pput_0437 | 148545689 | SurA domain-containing protein                                       | 5  | 9   | 12 | 747   | 23.2 | 2.14   |
| Pput_0438 | 148545690 | organic solvent tolerance protein                                    | 9  | 7   | 8  | 557   | 5.5  | 0.75   |
| Pput_0439 | 148545691 | aminoglycoside phosphotransferase                                    | 4  | 5   | 6  | 250   | 14.5 | 0.89   |
| Pput_0440 | 148545692 | nucleotidyl transferase                                              | 1  | 1   | 1  | 30    | 4.9  | 0.16   |
| Pput_0441 | 148545693 | heat shock protein DnaJ domain-containing protein                    | 3  | 1   | 3  | 81    | 4.7  | 0.39   |
| Pput_0442 | 148545694 | hypothetical protein Pput_0442                                       | 1  | 2   | 2  | 64    | 7.2  | 0.22   |
| Pput_0443 | 148545695 | PAS/PAC sensor signal transduction histidine kinase                  | 1  | 3   | 3  | 61    | 3.3  | 0.13   |
| Pput_0444 | 148545696 | two component LuxR family transcriptional regulator                  | 1  | 5   | 5  | 150   | 28.7 | 1.17   |
| Pput_0445 | 148545697 | spermidine/putrescine ABC transporter ATPase subunit                 | 3  | 16  | 17 | 1117  | 43.9 | 5.76   |
| Pput_0446 | 148545698 | extracellular solute-binding protein                                 | 6  | 16  | 18 | 956   | 33.7 | 7.53   |
| Pput_0447 | 148545699 | binding-protein-dependent transport systems inner membrane component | 19 | 6   | 7  | 1880  | 12.5 | 4.64   |
| Pput_0448 | 148545700 | binding-protein-dependent transport systems inner membrane component | 1  | 1   | 1  | 44    | 5.1  | 0.13   |
| Pput_0449 | 148545701 | ribose-phosphate 3-epimerase                                         | 1  | 2   | 2  | 49    | 8    | 0.34   |
| Pput_0451 | 148545703 | anthranilate synthase component I                                    | 4  | 10  | 10 | 590   | 18.9 | 1.65   |
| Pput_0452 | 148545704 | outer membrane autotransporter                                       | 2  | 2   | 2  | 197   | 4    | 0.17   |
| Pput_0453 | 148545705 | anthranilate synthase component II                                   | 1  | 1   | 1  | 28    | 4.1  | 0.18   |
| Pput_0455 | 148545707 | indole-3-glycerol-phosphate synthase                                 | 6  | 6   | 8  | 486   | 21.3 | 2.49   |
| Pput_0457 | 148545709 | cAMP-regulatory protein                                              | 1  | 1   | 1  | 35    | 3.6  | 0.15   |
| Pput_0458 | 148545710 | OsmC family protein                                                  | 3  | 1   | 2  | 123   | 10   | 1.39   |
| Pput_0459 | 148545711 | hypothetical protein Pput_0459                                       | 1  | 1   | 1  | 27    | 2.3  | 0.1    |
| Pput_0460 | 148545712 | ubiquinone biosynthesis protein COQ7-like protein                    | 2  | 1   | 1  | 80    | 4.7  | 0.32   |
| Pput_0465 | 148545717 | N-acetyl-gamma-glutamyl-phosphate reductase                          | 3  | 10  | 11 | 520   | 39   | 2.75   |
| Pput_0467 | 148545719 | anhydro-N-acetylmuramic acid kinase                                  | 2  | 2   | 3  | 125   | 5.2  | 0.4    |
| Pput_0469 | 148545721 | tyrosyl-tRNA synthetase                                              | 2  | 8   | 7  | 302   | 17.3 | 1.09   |
| Pput_0470 | 148545722 | biotin--protein ligase                                               | 2  | 2   | 1  | 139   | 5    | 0.22   |
| Pput_0471 | 148545723 | pantothenate kinase                                                  | 1  | 1   | 1  | 33    | 4    | 0.14   |
| Pput_0473 | 148545725 | elongation factor Tu                                                 | 67 | 171 | 35 | 12993 | 80.6 | 145.89 |
| Pput_0475 | 148545727 | transcription antitermination protein NusG                           | 4  | 7   | 6  | 322   | 31.1 | 2.67   |
| Pput_0476 | 148545728 | 50S ribosomal protein L11                                            | 4  | 5   | 6  | 546   | 41.3 | 5.44   |
| Pput_0477 | 148545729 | 50S ribosomal protein L1                                             | 5  | 9   | 9  | 920   | 36.4 | 7.34   |
| Pput_0478 | 148545730 | 50S ribosomal protein L10                                            | 5  | 25  | 13 | 1809  | 57.4 | 34.92  |
| Pput_0479 | 148545731 | 50S ribosomal protein L7/L12                                         | 5  | 2   | 3  | 316   | 19.8 | 2.96   |
| Pput_0480 | 148545732 | DNA-directed RNA polymerase subunit beta                             | 50 | 42  | 42 | 7058  | 22.9 | 7.5    |
| Pput_0481 | 148545733 | DNA-directed RNA polymerase subunit beta~                            | 57 | 46  | 43 | 8986  | 24   | 9.87   |
| Pput_0482 | 148545734 | 30S ribosomal protein S12                                            | 3  | 8   | 7  | 416   | 35   | 7.08   |
| Pput_0483 | 148545735 | 30S ribosomal protein S7                                             | 8  | 28  | 18 | 1470  | 78.8 | 156.72 |
| Pput_0484 | 148545736 | elongation factor G                                                  | 28 | 26  | 34 | 3743  | 32   | 10.08  |
| Pput_0486 | 148545738 | 30S ribosomal protein S10                                            | 2  | 10  | 8  | 375   | 59.2 | 18.11  |
| Pput_0487 | 148545739 | 50S ribosomal protein L3                                             | 15 | 31  | 20 | 2786  | 69.7 | 56.66  |
| Pput_0488 | 148545740 | 50S ribosomal protein L4                                             | 4  | 22  | 12 | 996   | 44.5 | 21.04  |
| Pput_0489 | 148545741 | 50S ribosomal protein L23                                            | 2  | 3   | 3  | 142   | 29.3 | 1.93   |
| Pput_0490 | 148545742 | 50S ribosomal protein L2                                             | 11 | 51  | 25 | 2367  | 73.4 | 47.38  |
| Pput_0491 | 148545743 | 30S ribosomal protein S19                                            | 1  | 4   | 4  | 75    | 48.4 | 2.72   |
| Pput_0492 | 148545744 | 50S ribosomal protein L22                                            | 4  | 7   | 6  | 579   | 30.9 | 5.97   |
| Pput_0493 | 148545745 | 30S ribosomal protein S3                                             | 7  | 15  | 18 | 812   | 61   | 12.96  |
| Pput_0494 | 148545746 | 50S ribosomal protein L16                                            | 4  | 6   | 5  | 303   | 27   | 3.18   |
| Pput_0495 | 148545747 | 50S ribosomal protein L29                                            | 1  | 2   | 2  | 68    | 38.1 | 1.49   |
| Pput_0496 | 148545748 | 30S ribosomal protein S17                                            | 2  | 8   | 9  | 350   | 52.3 | 18.9   |
| Pput_0497 | 148545749 | 50S ribosomal protein L14                                            | 5  | 16  | 9  | 833   | 58.2 | 41.73  |
| Pput_0498 | 148545750 | 50S ribosomal protein L24                                            | 2  | 1   | 1  | 128   | 10.6 | 0.7    |
| Pput_0499 | 148545751 | 50S ribosomal protein L5                                             | 14 | 16  | 19 | 1839  | 64.2 | 46.6   |
| Pput_0500 | 148545752 | 30S ribosomal protein S14                                            | 4  | 7   | 5  | 419   | 47.5 | 5.6    |
| Pput_0501 | 148545753 | 30S ribosomal protein S8                                             | 2  | 10  | 8  | 580   | 55.4 | 22.42  |
| Pput_0502 | 148545754 | 50S ribosomal protein L6                                             | 6  | 16  | 12 | 1725  | 41.2 | 26.17  |
| Pput_0503 | 148545755 | 50S ribosomal protein L18                                            | 3  | 25  | 13 | 972   | 77.6 | 52.43  |
| Pput_0504 | 148545756 | 30S ribosomal protein S5                                             | 4  | 31  | 18 | 2096  | 77.1 | 143.38 |
| Pput_0505 | 148545757 | 50S ribosomal protein L30                                            | 2  | 7   | 2  | 284   | 25.9 | 9.73   |
| Pput_0506 | 148545758 | 50S ribosomal protein L15                                            | 4  | 18  | 15 | 1160  | 72.9 | 48.64  |
| Pput_0507 | 148545759 | preprotein translocase subunit SecY                                  | 7  | 2   | 3  | 240   | 4.1  | 0.72   |
| Pput_0508 | 148545760 | ribosomal protein L36                                                | 3  | 2   | 2  | 113   | 14.5 | 1.98   |
| Pput_0509 | 148545761 | 30S ribosomal protein S13                                            | 4  | 11  | 8  | 434   | 46.6 | 9.35   |
| Pput_0510 | 148545762 | 30S ribosomal protein S11                                            | 3  | 17  | 9  | 891   | 51.2 | 28.28  |
| Pput_0511 | 148545763 | 30S ribosomal protein S4                                             | 11 | 31  | 29 | 2624  | 62.1 | 94.92  |
| Pput_0512 | 148545764 | DNA-directed RNA polymerase subunit alpha                            | 4  | 22  | 21 | 1207  | 40.2 | 10.96  |
| Pput_0513 | 148545765 | 50S ribosomal protein L17                                            | 3  | 7   | 8  | 533   | 21.1 | 13.65  |
| Pput_0514 | 148545766 | catalase                                                             | 1  | 1   | 1  | 67    | 2.3  | 0.07   |
| Pput_0515 | 148545767 | bacterioferritin                                                     | 4  | 6   | 4  | 312   | 29.2 | 3.98   |
| Pput_0516 | 148545768 | excinuclease ABC subunit A                                           | 3  | 7   | 7  | 435   | 7.7  | 0.35   |
| Pput_0518 | 148545770 | single-stranded DNA-binding protein                                  | 3  | 7   | 7  | 479   | 27.6 | 4.19   |
| Pput_0519 | 148545771 | GntR family transcriptional regulator                                | 1  | 1   | 1  | 26    | 1.7  | 0.07   |
| Pput_0521 | 148545773 | short-chain dehydrogenase/reductase SDR                              | 2  | 2   | 1  | 74    | 7.1  | 0.28   |
| Pput_0522 | 148545774 | molybdopterin oxidoreductase Fe4S4 region                            | 10 | 11  | 11 | 1034  | 35.7 | 10.03  |
| Pput_0523 | 148545775 | formate dehydrogenase, alpha subunit                                 | 10 | 11  | 12 | 1234  | 10.2 | 1.66   |
| Pput_0524 | 148545776 | formate dehydrogenase, beta subunit                                  | 4  | 6   | 6  | 148   | 18.4 | 1.16   |
| Pput_0525 | 148545777 | formate dehydrogenase, gamma subunit                                 | 9  | 4   | 3  | 424   | 15.1 | 2.29   |
| Pput_0526 | 148545778 | formate dehydrogenase accessory protein FdhE                         | 3  | 2   | 3  | 114   | 6.2  | 0.46   |
| Pput_0527 | 148545779 | selenocysteine synthase                                              | 2  | 1   | 1  | 156   | 2.3  | 0.14   |
| Pput_0528 | 148545780 | selenocysteine-specific translation elongation factor                | 2  | 6   | 6  | 265   | 10.6 | 0.47   |

|           |           |                                                                                               |    |    |    |      |      |       |
|-----------|-----------|-----------------------------------------------------------------------------------------------|----|----|----|------|------|-------|
| Pput_0531 | 148545783 | Cro/CI family transcriptional regulator                                                       | 1  | 1  | 1  | 46   | 4.1  | 0.12  |
| Pput_0535 | 148545785 | dTDP-4-dehydroharmnose reductase                                                              | 4  | 6  | 7  | 334  | 20.4 | 1.81  |
| Pput_0536 | 148545786 | NAD-dependent epimerase/dehydratase                                                           | 2  | 5  | 4  | 208  | 13.9 | 0.64  |
| Pput_0539 | 148545789 | OmpW family protein                                                                           | 3  | 9  | 8  | 513  | 37.9 | 3.57  |
| Pput_0541 | 148545791 | hypothetical protein Pput_0541                                                                | 1  | 1  | 1  | 29   | 2.1  | 0.08  |
| Pput_0544 | 148545794 | hypothetical protein Pput_0544                                                                | 1  | 1  | 1  | 43   | 8.8  | 0.32  |
| Pput_0545 | 148545795 | thioredoxin                                                                                   | 2  | 5  | 5  | 193  | 22.1 | 0.86  |
| Pput_0547 | 148545797 | hypothetical protein Pput_0547                                                                | 2  | 3  | 5  | 162  | 24.1 | 2.13  |
| Pput_0548 | 148545798 | transcriptional regulator NrdR                                                                | 4  | 3  | 4  | 133  | 11.7 | 1.68  |
| Pput_0549 | 148545799 | riboflavin biosynthesis protein RibD                                                          | 1  | 7  | 6  | 185  | 22.9 | 0.88  |
| Pput_0550 | 148545800 | riboflavin synthase subunit alpha                                                             | 1  | 2  | 2  | 38   | 7.2  | 0.35  |
| Pput_0551 | 148545801 | bifunctional 3,4-dihydroxy-2-butanone 4-phosphate synthase/GTP cyclohydrolase II-like protein | 2  | 5  | 5  | 281  | 17.9 | 0.66  |
| Pput_0552 | 148545802 | 6,7-dimethyl-8-ribityllumazine synthase                                                       | 3  | 7  | 6  | 340  | 37.3 | 3.34  |
| Pput_0553 | 148545803 | transcription antitermination protein NusB                                                    | 1  | 2  | 2  | 47   | 10.8 | 0.46  |
| Pput_0554 | 148545804 | thiamine monophosphate kinase                                                                 | 3  | 1  | 2  | 94   | 3.7  | 0.33  |
| Pput_0557 | 148545807 | GTP cyclohydrolase II                                                                         | 1  | 2  | 2  | 93   | 15.6 | 0.37  |
| Pput_0560 | 148545810 | TonB-dependent receptor, plug                                                                 | 1  | 1  | 1  | 27   | 1.4  | 0.05  |
| Pput_0561 | 148545811 | 1-deoxy-D-xylulose-5-phosphate synthase                                                       | 3  | 5  | 5  | 216  | 9.2  | 0.4   |
| Pput_0562 | 148545812 | polyprenyl synthetase                                                                         | 2  | 1  | 1  | 71   | 3.1  | 0.24  |
| Pput_0567 | 148545817 | integral membrane sensor signal transduction histidine kinase                                 | 1  | 1  | 1  | 32   | 3.6  | 0.07  |
| Pput_0577 | 148545827 | inorganic pyrophosphatase                                                                     | 2  | 4  | 4  | 148  | 25.7 | 1.28  |
| Pput_0579 | 148545829 | SNARE associated Golgi protein                                                                | 1  | 1  | 1  | 26   | 5.1  | 0.16  |
| Pput_0580 | 148545830 | GCN5-related N-acetyltransferase                                                              | 7  | 7  | 6  | 596  | 34.2 | 7.28  |
| Pput_0581 | 148545831 | ethanolamine ammonia-lyase small subunit                                                      | 6  | 2  | 5  | 589  | 9.6  | 1.82  |
| Pput_0582 | 148545832 | ethanolamine ammonia lyase large subunit                                                      | 3  | 3  | 5  | 337  | 6.5  | 0.74  |
| Pput_0583 | 148545833 | ethanolamine transproter                                                                      | 5  | 2  | 1  | 325  | 2.5  | 0.35  |
| Pput_0584 | 148545834 | aldehyde dehydrogenase                                                                        | 22 | 29 | 17 | 2890 | 31.8 | 7.18  |
| Pput_0585 | 148545835 | Fis family GAF modulated sigma54 specific transcriptional regulator                           | 2  | 2  | 1  | 76   | 1    | 0.1   |
| Pput_0586 | 148545836 | UDP-N-acetylmuramate                                                                          | 4  | 4  | 5  | 241  | 11.6 | 0.57  |
| Pput_0587 | 148545837 | aromatic acid decarboxylase                                                                   | 3  | 2  | 3  | 172  | 12   | 0.89  |
| Pput_0589 | 148545839 | hypothetical protein Pput_0589                                                                | 3  | 5  | 5  | 295  | 24.3 | 1.82  |
| Pput_0590 | 148545840 | MORN repeat-containing protein                                                                | 1  | 1  | 1  | 26   | 1.3  | 0.06  |
| Pput_0592 | 148545842 | branched-chain alpha-keto acid dehydrogenase subunit E2                                       | 1  | 2  | 2  | 40   | 6    | 0.2   |
| Pput_0593 | 148545843 | transketolase, central region                                                                 | 5  | 2  | 3  | 397  | 6.2  | 0.96  |
| Pput_0594 | 148545844 | pyruvate dehydrogenase (acetyl-transferring)                                                  | 4  | 3  | 3  | 235  | 8.6  | 0.81  |
| Pput_0597 | 148545847 | acetyl-CoA carboxylase biotin carboxylase subunit                                             | 5  | 22 | 19 | 753  | 35.7 | 5.17  |
| Pput_0598 | 148545848 | acetyl-CoA carboxylase biotin carboxyl carrier protein subunit                                | 2  | 3  | 2  | 157  | 17   | 1.45  |
| Pput_0600 | 148545850 | thiol:disulfide interchange protein precursor                                                 | 1  | 1  | 1  | 31   | 1.5  | 0.06  |
| Pput_0601 | 148545851 | methyl-accepting chemotaxis sensory transducer                                                | 2  | 1  | 2  | 61   | 2    | 0.1   |
| Pput_0602 | 148545852 | response regulator receiver modulated diguanylate cyclase                                     | 1  | 1  | 1  | 26   | 2.2  | 0.07  |
| Pput_0603 | 148545853 | hypothetical protein Pput_0603                                                                | 3  | 8  | 8  | 809  | 26.5 | 1.99  |
| Pput_0606 | 148545856 | arginine decarboxylase                                                                        | 3  | 5  | 5  | 206  | 5.3  | 0.61  |
| Pput_0609 | 148545859 | alpha-2-macroglobulin domain-containing protein                                               | 2  | 1  | 2  | 54   | 0.4  | 0.04  |
| Pput_0613 | 148545863 | two component LuxR family transcriptional regulator                                           | 1  | 1  | 1  | 27   | 3.9  | 0.13  |
| Pput_0615 | 148545865 | hypothetical protein Pput_0615                                                                | 6  | 24 | 12 | 1395 | 43.9 | 25.24 |
| Pput_0616 | 148545866 | hypothetical protein Pput_0616                                                                | 2  | 3  | 4  | 268  | 15.6 | 1.52  |
| Pput_0619 | 148545869 | dehydratase                                                                                   | 3  | 5  | 5  | 165  | 20.8 | 1     |
| Pput_0620 | 148545870 | 3-ketoacyl-(acyl-carrier-protein) reductase                                                   | 3  | 11 | 10 | 451  | 29.1 | 1.47  |
| Pput_0621 | 148545871 | acetyl-CoA acetyltransferase                                                                  | 2  | 4  | 4  | 147  | 11.5 | 0.45  |
| Pput_0622 | 148545872 | helix-turn-helix domain-containing protein                                                    | 1  | 1  | 1  | 26   | 4.6  | 0.13  |
| Pput_0623 | 148545873 | methyl-accepting chemotaxis sensory transducer                                                | 3  | 4  | 5  | 248  | 6.2  | 0.45  |
| Pput_0625 | 148545875 | heavy metal translocating P-type ATPase                                                       | 2  | 1  | 2  | 71   | 2    | 0.08  |
| Pput_0631 | 148545881 | adenosine deaminase                                                                           | 1  | 3  | 3  | 70   | 6    | 0.34  |
| Pput_0632 | 148545882 | short chain dehydrogenase                                                                     | 3  | 6  | 5  | 309  | 21.5 | 1.46  |
| Pput_0634 | 148545884 | TetR family transcriptional regulator                                                         | 3  | 3  | 3  | 122  | 10.5 | 0.84  |
| Pput_0635 | 148545885 | LysR family transcriptional regulator                                                         | 1  | 1  | 1  | 58   | 4.3  | 0.11  |
| Pput_0637 | 148545887 | methylmalonate-semialdehyde dehydrogenase                                                     | 2  | 5  | 4  | 242  | 10.7 | 0.53  |
| Pput_0639 | 148545889 | paraquat-inducible protein A                                                                  | 1  | 1  | 1  | 25   | 3.4  | 0.17  |
| Pput_0640 | 148545890 | hypothetical protein Pput_0640                                                                | 1  | 6  | 6  | 136  | 8.5  | 0.3   |
| Pput_0641 | 148545891 | 30S ribosomal protein S20                                                                     | 2  | 2  | 2  | 81   | 23.9 | 1.35  |
| Pput_0643 | 148545893 | bifunctional riboflavin kinase/FMN adenylyltransferase                                        | 4  | 4  | 6  | 229  | 13   | 1.04  |
| Pput_0644 | 148545894 | isoleucyl-tRNA synthetase                                                                     | 4  | 18 | 14 | 666  | 15.4 | 1.09  |
| Pput_0659 | 148545909 | branched chain amino acid ABC transporter amino acid-binding protein                          | 1  | 2  | 2  | 136  | 7.8  | 0.18  |
| Pput_0662 | 148545912 | DNA uptake lipoprotein-like protein                                                           | 4  | 3  | 4  | 249  | 8.8  | 1.06  |
| Pput_0663 | 148545913 | RluA family pseudouridine synthase                                                            | 4  | 2  | 4  | 226  | 3.1  | 0.5   |
| Pput_0664 | 148545914 | hypothetical protein Pput_0664                                                                | 1  | 3  | 2  | 100  | 8.9  | 0.31  |
| Pput_0665 | 148545915 | ATPase                                                                                        | 18 | 44 | 37 | 3408 | 38.4 | 6.41  |
| Pput_0666 | 148545916 | FAD-dependent pyridine nucleotide-disulphide oxidoreductase                                   | 2  | 4  | 4  | 113  | 10.9 | 0.44  |
| Pput_0668 | 148545918 | hypothetical protein Pput_0668                                                                | 2  | 2  | 2  | 129  | 10   | 0.5   |
| Pput_0669 | 148545919 | hypothetical protein Pput_0669                                                                | 1  | 1  | 1  | 24   | 11.2 | 0.26  |
| Pput_0672 | 148545922 | dephospho-CoA kinase                                                                          | 1  | 1  | 1  | 74   | 6.8  | 0.17  |
| Pput_0687 | 148545934 | lactate/malate dehydrogenase                                                                  | 4  | 2  | 4  | 260  | 7.8  | 0.7   |
| Pput_0690 | 148545936 | polar amino acid ABC transporter, inner membrane subunit                                      | 1  | 1  | 1  | 28   | 3.3  | 0.13  |
| Pput_0699 | 148545945 | aldehyde dehydrogenase                                                                        | 2  | 1  | 1  | 66   | 3.4  | 0.14  |
| Pput_0700 | 148545946 | endoribonuclease L-PSP                                                                        | 1  | 1  | 1  | 27   | 8.7  | 0.31  |
| Pput_0702 | 148545948 | serine hydroxymethyltransferase                                                               | 5  | 20 | 16 | 695  | 28.5 | 4.33  |
| Pput_0705 | 148545951 | putative ABC transporter ATP-binding protein                                                  | 5  | 19 | 16 | 947  | 23.4 | 1.98  |
| Pput_0708 | 148545954 | hypothetical protein Pput_0708                                                                | 5  | 3  | 2  | 297  | 18.6 | 2.55  |
| Pput_0709 | 148545955 | hypothetical protein Pput_0709                                                                | 1  | 1  | 1  | 28   | 0.8  | 0.05  |
| Pput_0710 | 148545956 | hypothetical protein Pput_0710                                                                | 13 | 1  | 1  | 419  | 4.9  | 2.99  |
| Pput_0711 | 148545957 | ATP-dependent protease-like protein                                                           | 4  | 12 | 10 | 767  | 12.7 | 0.92  |
| Pput_0712 | 148545958 | hypothetical protein Pput_0712                                                                | 1  | 1  | 1  | 32   | 6.3  | 0.31  |
| Pput_0714 | 148545960 | hypothetical protein Pput_0714                                                                | 1  | 2  | 1  | 32   | 10.9 | 0.35  |
| Pput_0715 | 148545961 | peptidylprolyl isomerase, FKBP-type                                                           | 2  | 1  | 2  | 85   | 5.4  | 0.36  |
| Pput_0718 | 148545964 | polyprenyl synthetase                                                                         | 2  | 3  | 2  | 265  | 7.1  | 0.44  |
| Pput_0720 | 148545966 | 50S ribosomal protein L21                                                                     | 3  | 3  | 4  | 199  | 26   | 3.01  |
| Pput_0721 | 148545967 | 50S ribosomal protein L27                                                                     | 2  | 4  | 3  | 131  | 27.1 | 3.66  |
| Pput_0722 | 148545968 | GTPase ObgE                                                                                   | 1  | 1  | 1  | 27   | 2.5  | 0.08  |
| Pput_0723 | 148545969 | gamma-glutamyl kinase                                                                         | 3  | 3  | 4  | 346  | 9.1  | 0.6   |



|           |           |                                                                      |    |    |    |      |      |       |
|-----------|-----------|----------------------------------------------------------------------|----|----|----|------|------|-------|
| Pput_0725 | 148545971 | hypothetical protein Pput_0725                                       | 1  | 1  | 1  | 27   | 1.5  | 0.04  |
| Pput_0727 | 148545973 | hypothetical protein Pput_0727                                       | 1  | 1  | 1  | 32   | 1.8  | 0.07  |
| Pput_0736 | 148545982 | anti-FecI sigma factor, FecR                                         | 1  | 1  | 1  | 29   | 3.8  | 0.11  |
| Pput_0738 | 148545984 | DNA-3-methyladenine glycosylase II                                   | 2  | 3  | 3  | 189  | 16.4 | 1.18  |
| Pput_0740 | 148545986 | MscS mechanosensitive ion channel                                    | 9  | 6  | 6  | 649  | 5.6  | 0.84  |
| Pput_0745 | 148545991 | isochorismatase hydrolase                                            | 4  | 5  | 3  | 352  | 13.1 | 2.4   |
| Pput_0746 | 148545992 | hypothetical protein Pput_0746                                       | 3  | 2  | 4  | 163  | 7.4  | 0.78  |
| Pput_0749 | 148545995 | RND efflux system outer membrane lipoprotein                         | 1  | 1  | 1  | 31   | 2    | 0.07  |
| Pput_0750 | 148545996 | secretion protein HlyD family protein                                | 1  | 2  | 1  | 33   | 2.2  | 0.09  |
| Pput_0753 | 148545999 | GTP-dependent nucleic acid-binding protein EngD                      | 5  | 3  | 4  | 375  | 8.5  | 0.78  |
| Pput_0754 | 148546000 | peptidyl-tRNA hydrolase                                              | 2  | 5  | 5  | 184  | 21.6 | 1.72  |
| Pput_0755 | 148546001 | 50S ribosomal protein L25/general stress protein Ctc                 | 6  | 7  | 9  | 786  | 32.5 | 9.42  |
| Pput_0756 | 148546002 | ribose-phosphate pyrophosphokinase                                   | 3  | 5  | 5  | 531  | 21   | 1.43  |
| Pput_0758 | 148546004 | outer membrane lipoprotein LolB                                      | 4  | 4  | 5  | 240  | 20.5 | 1.78  |
| Pput_0759 | 148546005 | TPR repeat-containing protein                                        | 2  | 5  | 5  | 223  | 9.8  | 0.39  |
| Pput_0760 | 148546006 | glutamyl-tRNA reductase                                              | 1  | 1  | 1  | 37   | 4.9  | 0.08  |
| Pput_0761 | 148546007 | peptide chain release factor 1                                       | 2  | 2  | 2  | 232  | 8.1  | 0.38  |
| Pput_0763 | 148546009 | molybdopterin biosynthesis protein MoeB                              | 4  | 1  | 1  | 321  | 4    | 0.56  |
| Pput_0765 | 148546011 | hypothetical protein Pput_0765                                       | 2  | 1  | 1  | 144  | 6.5  | 0.46  |
| Pput_0771 | 148546017 | NAD-dependent epimerase/dehydratase                                  | 2  | 2  | 3  | 154  | 8.6  | 0.48  |
| Pput_0772 | 148546018 | ferrochelatase                                                       | 2  | 2  | 2  | 201  | 7.4  | 0.53  |
| Pput_0774 | 148546020 | uracil phosphoribosyltransferase                                     | 1  | 3  | 3  | 94   | 14.6 | 0.58  |
| Pput_0777 | 148546023 | hypothetical protein Pput_0777                                       | 1  | 1  | 1  | 45   | 10.3 | 0.23  |
| Pput_0779 | 148546025 | malate:quinone oxidoreductase                                        | 3  | 15 | 12 | 474  | 26.7 | 1.82  |
| Pput_0780 | 148546026 | hypothetical protein Pput_0780                                       | 4  | 11 | 6  | 1028 | 40.7 | 7.6   |
| Pput_0783 | 148546029 | phospholipid/glycerol acyltransferase                                | 1  | 1  | 1  | 33   | 3.6  | 0.09  |
| Pput_0787 | 148546033 | peptidase M48, Ste24p                                                | 5  | 6  | 7  | 357  | 23.2 | 2.1   |
| Pput_0789 | 148546035 | rRNA (guanine-N(2)-)-methyltransferase                               | 1  | 1  | 1  | 32   | 2.7  | 0.1   |
| Pput_0791 | 148546037 | acyl-CoA synthetase                                                  | 3  | 5  | 6  | 272  | 7    | 0.74  |
| Pput_0792 | 148546038 | hypothetical protein Pput_0792                                       | 14 | 15 | 13 | 1856 | 16.2 | 3.03  |
| Pput_0793 | 148546039 | hypothetical protein Pput_0793                                       | 5  | 25 | 22 | 1219 | 41   | 6.33  |
| Pput_0798 | 148546044 | OmpA/MotB domain-containing protein                                  | 6  | 9  | 5  | 1391 | 26.7 | 5.38  |
| Pput_0799 | 148546045 | phosphate acetyltransferase                                          | 1  | 3  | 3  | 107  | 4.3  | 0.16  |
| Pput_0801 | 148546047 | peptidylprolyl isomerase, FKBP-type                                  | 2  | 5  | 3  | 200  | 24.2 | 1.07  |
| Pput_0802 | 148546048 | peroxiredoxin                                                        | 1  | 1  | 1  | 53   | 5.6  | 0.22  |
| Pput_0804 | 148546050 | methyl-accepting chemotaxis sensory transducer                       | 1  | 1  | 1  | 28   | 1.8  | 0.08  |
| Pput_0809 | 148546054 | thioredoxin reductase                                                | 5  | 4  | 5  | 388  | 15.9 | 1.46  |
| Pput_0810 | 148546055 | nicotinate-nucleotide pyrophosphorylase                              | 2  | 1  | 1  | 124  | 4.3  | 0.24  |
| Pput_0811 | 148546056 | hypothetical protein Pput_0811                                       | 1  | 1  | 1  | 37   | 1.5  | 0.05  |
| Pput_0812 | 148546057 | N-acetyl-anhydromuranmyl-L-alanine amidase                           | 1  | 1  | 1  | 56   | 5.8  | 0.18  |
| Pput_0813 | 148546058 | signaling modulator of AmpD, AmpE                                    | 9  | 1  | 1  | 463  | 4.7  | 1.08  |
| Pput_0815 | 148546060 | DNA-binding transcriptional regulator FruR                           | 2  | 8  | 6  | 333  | 20.1 | 1.84  |
| Pput_0816 | 148546061 | phosphoenolpyruvate-protein phosphotransferase                       | 1  | 1  | 1  | 28   | 1.9  | 0.04  |
| Pput_0820 | 148546065 | hypothetical protein Pput_0820                                       | 2  | 1  | 1  | 162  | 10.1 | 0.44  |
| Pput_0821 | 148546066 | diguanylate cyclase                                                  | 1  | 1  | 1  | 28   | 3.4  | 0.07  |
| Pput_0830 | 148546075 | glycoprotein                                                         | 1  | 1  | 1  | 27   | 0.4  | 0     |
| Pput_0835 | 148546079 | ubiquinol oxidase, subunit II                                        | 1  | 1  | 1  | 27   | 3.8  | 0.11  |
| Pput_0836 | 148546080 | cytochrome o ubiquinol oxidase, subunit I                            | 1  | 1  | 1  | 31   | 2.1  | 0.05  |
| Pput_0843 | 148546087 | GCN5-related N-acetyltransferase                                     | 1  | 1  | 1  | 29   | 5.2  | 0.17  |
| Pput_0849 | 148546093 | tRNA 2-selenouridine synthase                                        | 1  | 3  | 3  | 123  | 7.8  | 0.29  |
| Pput_0851 | 148546095 | phosphonate ABC transporter, periplasmic phosphonate-binding protein | 3  | 2  | 3  | 126  | 6.7  | 0.64  |
| Pput_0862 | 148546106 | S-adenosylmethionine:tRNA ribosyltransferase-isomerase               | 2  | 1  | 3  | 91   | 3.2  | 0.31  |
| Pput_0863 | 148546107 | queuine tRNA-ribosyltransferase                                      | 2  | 2  | 3  | 74   | 5.3  | 0.27  |
| Pput_0865 | 148546109 | preprotein translocase subunit SecD                                  | 13 | 5  | 7  | 833  | 10   | 1.98  |
| Pput_0866 | 148546110 | preprotein translocase subunit SecE                                  | 3  | 1  | 2  | 102  | 3.3  | 0.36  |
| Pput_0867 | 148546111 | hypothetical protein Pput_0867                                       | 3  | 3  | 3  | 211  | 16.5 | 2.03  |
| Pput_0868 | 148546112 | inositol-phosphate phosphatase                                       | 5  | 7  | 8  | 562  | 19.1 | 2.61  |
| Pput_0869 | 148546113 | RNA methyltransferase                                                | 2  | 1  | 1  | 134  | 6.1  | 0.24  |
| Pput_0870 | 148546114 | serine O-acetyltransferase                                           | 1  | 1  | 1  | 29   | 5.4  | 0.13  |
| Pput_0871 | 148546115 | BadM/Rrf2 family transcriptional regulator                           | 4  | 1  | 4  | 188  | 5.5  | 0.98  |
| Pput_0872 | 148546116 | cysteine desulfurase                                                 | 3  | 9  | 10 | 380  | 23.5 | 1.64  |
| Pput_0876 | 148546120 | chaperone protein HscA                                               | 1  | 5  | 5  | 154  | 9.8  | 0.31  |
| Pput_0879 | 148546123 | nucleoside-diphosphate kinase                                        | 3  | 10 | 10 | 693  | 61.7 | 18.52 |
| Pput_0883 | 148546127 | 4-hydroxy-3-methylbut-2-en-1-yl diphosphate synthase                 | 2  | 8  | 7  | 290  | 21.7 | 0.96  |
| Pput_0884 | 148546128 | histidyl-tRNA synthetase                                             | 5  | 5  | 7  | 288  | 14   | 0.86  |
| Pput_0885 | 148546129 | hypothetical protein Pput_0885                                       | 1  | 1  | 1  | 27   | 6.1  | 0.17  |
| Pput_0886 | 148546130 | pyrrolo-quinoline quinone                                            | 2  | 9  | 7  | 256  | 23.2 | 1.4   |
| Pput_0887 | 148546131 | GTP-binding protein EngA                                             | 4  | 9  | 10 | 665  | 20.7 | 1.34  |
| Pput_0888 | 148546132 | putative aminotransferase                                            | 1  | 3  | 3  | 121  | 11.3 | 0.29  |
| Pput_0889 | 148546133 | Nitrilase/cyanide hydratase and apolipoprotein N-acyltransferase     | 2  | 4  | 6  | 275  | 21.7 | 1.43  |
| Pput_0894 | 148546138 | ornithine decarboxylase                                              | 2  | 3  | 2  | 274  | 6.2  | 0.36  |
| Pput_0896 | 148546140 | anti-FecI sigma factor, FecR                                         | 2  | 1  | 1  | 46   | 1.6  | 0.22  |
| Pput_0897 | 148546141 | TonB-dependent siderophore receptor                                  | 4  | 1  | 1  | 115  | 1.1  | 0.16  |
| Pput_0898 | 148546142 | glycine betaine/L-proline ABC transporter, ATPase subunit            | 2  | 1  | 1  | 54   | 2.3  | 0.18  |
| Pput_0902 | 148546146 | peptide chain release factor 3                                       | 2  | 1  | 2  | 74   | 1.7  | 0.12  |
| Pput_0911 | 148546154 | hypothetical protein Pput_0911                                       | 1  | 1  | 1  | 26   | 3.1  | 0.11  |
| Pput_0912 | 148546155 | biotin carboxylase-like protein                                      | 1  | 1  | 1  | 27   | 1.2  | 0.08  |
| Pput_0917 | 148546160 | dipeptide transporter ATP-binding subunit                            | 1  | 1  | 1  | 24   | 3.1  | 0.1   |
| Pput_0918 | 148546161 | oligopeptide/dipeptide ABC transporter, ATPase subunit               | 4  | 1  | 3  | 187  | 3.7  | 0.56  |
| Pput_0922 | 148546165 | outer membrane porin                                                 | 3  | 9  | 8  | 363  | 17.9 | 1.18  |
| Pput_0924 | 148546167 | extracellular solute-binding protein                                 | 3  | 14 | 12 | 668  | 22.4 | 2.14  |
| Pput_0927 | 148546170 | two component Fis family transcriptional regulator                   | 5  | 5  | 4  | 588  | 23   | 2.98  |
| Pput_0930 | 148546173 | Ycel family protein                                                  | 1  | 1  | 1  | 41   | 4.7  | 0.18  |
| Pput_0932 | 148546175 | PipI family intracellular peptidase                                  | 3  | 3  | 4  | 213  | 19.8 | 1.23  |
| Pput_0936 | 148546179 | tartrate/fumarate subfamily Fe-S type hydro-lyase alpha subunit      | 9  | 8  | 9  | 576  | 13.2 | 1.25  |
| Pput_0940 | 148546183 | two component transcriptional regulator                              | 2  | 5  | 6  | 193  | 21.6 | 2     |
| Pput_0941 | 148546184 | integral membrane sensor signal transduction histidine kinase        | 2  | 4  | 3  | 199  | 8    | 0.41  |
| Pput_0942 | 148546185 | methyltransferase type 11                                            | 5  | 17 | 17 | 937  | 45.1 | 10.64 |
| Pput_0943 | 148546186 | lipopolysaccharide kinase                                            | 7  | 15 | 12 | 872  | 48.7 | 10.97 |

|           |           |                                                                         |    |    |    |      |      |       |
|-----------|-----------|-------------------------------------------------------------------------|----|----|----|------|------|-------|
| Pput_0948 | 148546191 | periplasmic lipoprotein-like protein                                    | 3  | 6  | 7  | 227  | 15.8 | 0.95  |
| Pput_0952 | 148546195 | hypothetical protein Pput_0952                                          | 4  | 2  | 2  | 219  | 4.7  | 0.48  |
| Pput_0953 | 148546196 | diguanylate cyclase/phosphodiesterase                                   | 1  | 2  | 2  | 37   | 2.6  | 0.1   |
| Pput_0954 | 148546197 | superoxide dismutase                                                    | 1  | 2  | 2  | 67   | 12.1 | 0.38  |
| Pput_0957 | 148546200 | NAD-dependent epimerase/dehydratase                                     | 3  | 1  | 3  | 80   | 3.9  | 0.3   |
| Pput_0958 | 148546201 | hypothetical protein Pput_0958                                          | 1  | 2  | 2  | 36   | 8.7  | 0.26  |
| Pput_0959 | 148546202 | NADH:flavin oxidoreductase/NADH oxidase                                 | 1  | 1  | 1  | 28   | 2.3  | 0.1   |
| Pput_0961 | 148546204 | hypothetical protein Pput_0961                                          | 1  | 1  | 1  | 40   | 5.7  | 0.17  |
| Pput_0963 | 148546206 | hypothetical protein Pput_0963                                          | 1  | 1  | 1  | 29   | 2.8  | 0.13  |
| Pput_0964 | 148546207 | hypothetical protein Pput_0964                                          | 4  | 6  | 4  | 498  | 18.3 | 1.67  |
| Pput_0967 | 148546210 | amino acid permease-associated region                                   | 4  | 1  | 1  | 180  | 2.9  | 0.32  |
| Pput_0970 | 148546213 | aspartyl/glutamyl-tRNA amidotransferase subunit B                       | 5  | 14 | 13 | 698  | 27.7 | 2.81  |
| Pput_0971 | 148546214 | aspartyl/glutamyl-tRNA amidotransferase subunit A                       | 2  | 8  | 8  | 279  | 20.3 | 0.9   |
| Pput_0973 | 148546216 | rod shape-determining protein MreB                                      | 3  | 12 | 16 | 1072 | 32.5 | 6.8   |
| Pput_0977 | 148546220 | ribonuclease                                                            | 2  | 3  | 5  | 207  | 6.4  | 0.52  |
| Pput_0978 | 148546221 | hypothetical protein Pput_0978                                          | 1  | 2  | 2  | 65   | 1.7  | 0.05  |
| Pput_0979 | 148546222 | Nitrilase/cyanide hydratase and apolipoprotein N-acyltransferase        | 1  | 1  | 1  | 62   | 4.9  | 0.12  |
| Pput_0980 | 148546223 | peptidase U62, modulator of DNA gyrase                                  | 2  | 5  | 5  | 173  | 12.3 | 0.5   |
| Pput_0981 | 148546224 | hypothetical protein Pput_0981                                          | 1  | 3  | 3  | 66   | 16.8 | 0.69  |
| Pput_0982 | 148546225 | peptidase U62, modulator of DNA gyrase                                  | 2  | 10 | 8  | 393  | 24.6 | 1.27  |
| Pput_0988 | 148546231 | hypothetical protein Pput_0988                                          | 4  | 3  | 3  | 176  | 12   | 0.75  |
| Pput_0990 | 148546233 | sigma 54 modulation protein/ribosomal protein S30EA                     | 1  | 1  | 1  | 27   | 10.8 | 0.34  |
| Pput_0991 | 148546234 | RNA polymerase factor sigma-54                                          | 5  | 6  | 7  | 456  | 12.1 | 1.06  |
| Pput_0992 | 148546235 | ABC transporter related                                                 | 5  | 2  | 7  | 323  | 12.4 | 2.12  |
| Pput_0993 | 148546236 | cell envelope biogenesis YhbN                                           | 3  | 1  | 2  | 113  | 6.3  | 0.63  |
| Pput_0994 | 148546237 | hypothetical protein Pput_0994                                          | 2  | 2  | 2  | 113  | 11.6 | 0.78  |
| Pput_0995 | 148546238 | 3-deoxy-D-manno-octulosonate 8-phosphate phosphatase                    | 1  | 2  | 2  | 59   | 9.2  | 0.45  |
| Pput_0996 | 148546239 | KpsF/GutQ family protein                                                | 3  | 2  | 2  | 212  | 7.4  | 0.45  |
| Pput_0997 | 148546240 | ABC transporter related                                                 | 1  | 1  | 1  | 41   | 4.5  | 0.13  |
| Pput_0999 | 148546242 | hypothetical protein Pput_0999                                          | 2  | 2  | 2  | 118  | 15.6 | 0.75  |
| Pput_1000 | 148546243 | toluene tolerance family protein                                        | 4  | 5  | 4  | 384  | 19.1 | 1.97  |
| Pput_1003 | 148546246 | UDP-N-acetylglucosamine 1-carboxyvinyltransferase                       | 4  | 7  | 4  | 220  | 9    | 0.94  |
| Pput_1004 | 148546247 | ATP phosphoribosyltransferase catalytic subunit                         | 4  | 3  | 5  | 319  | 15.6 | 1.69  |
| Pput_1005 | 148546248 | histidinol dehydrogenase                                                | 3  | 7  | 8  | 363  | 10   | 1.34  |
| Pput_1006 | 148546249 | histidinol-phosphate aminotransferase                                   | 5  | 4  | 5  | 378  | 11.8 | 1.6   |
| Pput_1010 | 148546253 | hypothetical protein Pput_1010                                          | 3  | 3  | 5  | 103  | 13.3 | 1.47  |
| Pput_1011 | 148546254 | GIY-YIG nuclease superfamily protein                                    | 4  | 1  | 2  | 111  | 4.4  | 1.28  |
| Pput_1012 | 148546255 | nucleoid-associated protein NdpA                                        | 2  | 2  | 2  | 73   | 6.6  | 0.31  |
| Pput_1013 | 148546256 | histone family protein DNA-binding protein                              | 2  | 3  | 3  | 225  | 31.2 | 2.86  |
| Pput_1015 | 148546258 | valyl-tRNA synthetase                                                   | 5  | 9  | 11 | 409  | 9.2  | 0.73  |
| Pput_1018 | 148546261 | leucyl aminopeptidase                                                   | 5  | 22 | 17 | 1163 | 33.4 | 4.47  |
| Pput_1019 | 148546262 | permease YjgP/YjgQ family protein                                       | 1  | 1  | 1  | 42   | 2.9  | 0.09  |
| Pput_1020 | 148546263 | permease YjgP/YjgQ family protein                                       | 2  | 1  | 2  | 71   | 2.5  | 0.2   |
| Pput_1022 | 148546265 | cold-shock DNA-binding domain-containing protein                        | 1  | 2  | 2  | 34   | 29   | 1.37  |
| Pput_1023 | 148546266 | glycine cleavage system T protein                                       | 2  | 10 | 9  | 366  | 34.6 | 1.51  |
| Pput_1024 | 148546267 | L-serine dehydratase 1                                                  | 2  | 1  | 3  | 108  | 2.2  | 0.24  |
| Pput_1025 | 148546268 | glycine dehydrogenase                                                   | 1  | 1  | 1  | 37   | 0.9  | 0.04  |
| Pput_1031 | 148546274 | RNA polymerase sigma factor                                             | 1  | 1  | 1  | 51   | 5.2  | 0.18  |
| Pput_1036 | 148546279 | carbamate kinase                                                        | 5  | 5  | 6  | 331  | 14.2 | 1.88  |
| Pput_1037 | 148546280 | ornithine carbamoyltransferase                                          | 14 | 35 | 18 | 2230 | 44.6 | 19.41 |
| Pput_1038 | 148546281 | arginine deiminase                                                      | 12 | 22 | 18 | 2283 | 33.1 | 8.39  |
| Pput_1047 | 148546290 | glyceraldehyde-3-phosphate dehydrogenase, type I                        | 3  | 1  | 3  | 87   | 3    | 0.3   |
| Pput_1048 | 148546291 | phosphoglucuronate dehydratase                                          | 2  | 5  | 4  | 226  | 8.4  | 0.38  |
| Pput_1049 | 148546292 | glucokinase                                                             | 4  | 4  | 5  | 461  | 16.6 | 1.37  |
| Pput_1053 | 148546296 | extracellular solute-binding protein                                    | 1  | 2  | 2  | 71   | 5.6  | 0.17  |
| Pput_1057 | 148546300 | carbohydrate-selective porin OprB                                       | 2  | 4  | 5  | 243  | 8.7  | 0.58  |
| Pput_1059 | 148546302 | DNA-binding transcriptional regulator HexR                              | 3  | 11 | 9  | 637  | 32.8 | 2.74  |
| Pput_1060 | 148546303 | glucose-6-phosphate 1-dehydrogenase                                     | 6  | 11 | 11 | 436  | 23.5 | 1.87  |
| Pput_1061 | 148546304 | 6-phosphoglucunolactonase                                               | 3  | 9  | 7  | 437  | 32.5 | 2.93  |
| Pput_1062 | 148546305 | keto-hydroxyglutarate-aldolase/keto-deoxy-phosphoglucuronate aldolase   | 4  | 7  | 6  | 540  | 21.2 | 3.67  |
| Pput_1065 | 148546308 | 2-isopropylmalate synthase                                              | 2  | 13 | 12 | 280  | 21.7 | 1.19  |
| Pput_1067 | 148546310 | exodeoxyribonuclease VII large subunit                                  | 3  | 2  | 3  | 118  | 3.5  | 0.29  |
| Pput_1070 | 148546313 | hypothetical protein Pput_1070                                          | 1  | 1  | 1  | 44   | 5.4  | 0.18  |
| Pput_1071 | 148546314 | inosine 5'-monophosphate dehydrogenase                                  | 6  | 17 | 19 | 1376 | 40.9 | 5.07  |
| Pput_1072 | 148546315 | GMP synthase                                                            | 6  | 15 | 17 | 978  | 20.4 | 2.78  |
| Pput_1075 | 148546318 | multicopper oxidase, type 3                                             | 1  | 2  | 1  | 28   | 2.2  | 0.07  |
| Pput_1077 | 148546320 | lytic transglycosylase, catalytic                                       | 3  | 5  | 4  | 261  | 8    | 0.67  |
| Pput_1078 | 148546321 | phosphoribosylformylglycinamide synthase                                | 12 | 22 | 18 | 1248 | 14.1 | 1.27  |
| Pput_1097 | 148546340 | FAD-binding 9, siderophore-interacting domain-containing protein        | 2  | 2  | 2  | 110  | 7.5  | 0.42  |
| Pput_1099 | 148546342 | membrane carboxypeptidase (penicillin-binding protein)-like protein     | 3  | 4  | 6  | 161  | 3.5  | 0.19  |
| Pput_1101 | 148546344 | glutamate synthase (NADPH)                                              | 1  | 2  | 2  | 99   | 5    | 0.13  |
| Pput_1102 | 148546345 | DEAD/DEAH box helicase domain-containing protein                        | 1  | 1  | 1  | 42   | 0.6  | 0.02  |
| Pput_1104 | 148546347 | LysR family transcriptional regulator                                   | 1  | 2  | 1  | 41   | 2.6  | 0.11  |
| Pput_1107 | 148546350 | two component, sigma54 specific, Fis family transcriptional regulator   | 2  | 2  | 2  | 172  | 4.5  | 0.24  |
| Pput_1108 | 148546351 | integral membrane sensor signal transduction histidine kinase           | 3  | 1  | 2  | 90   | 1.7  | 0.15  |
| Pput_1109 | 148546352 | ABC transporter related                                                 | 3  | 11 | 13 | 490  | 32.4 | 5.42  |
| Pput_1110 | 148546353 | polar amino acid ABC transporter, inner membrane subunit                | 2  | 1  | 1  | 60   | 4    | 0.3   |
| Pput_1111 | 148546354 | polar amino acid ABC transporter, inner membrane subunit                | 3  | 2  | 3  | 186  | 10.9 | 0.72  |
| Pput_1112 | 148546355 | extracellular solute-binding protein                                    | 12 | 39 | 22 | 2832 | 58   | 22.29 |
| Pput_1113 | 148546356 | leucine-rich repeat-containing protein                                  | 2  | 1  | 2  | 67   | 0.8  | 0.04  |
| Pput_1115 | 148546358 | DeoR family transcriptional regulator                                   | 2  | 1  | 2  | 150  | 3.5  | 0.38  |
| Pput_1116 | 148546359 | glycerol kinase                                                         | 2  | 8  | 9  | 190  | 17.6 | 1.06  |
| Pput_1117 | 148546360 | MIP family channel protein                                              | 1  | 1  | 1  | 28   | 5.7  | 0.13  |
| Pput_1118 | 148546361 | ybaK/ebcC protein                                                       | 1  | 2  | 2  | 31   | 16.7 | 0.52  |
| Pput_1120 | 148546363 | ornithine carbamoyltransferase                                          | 5  | 7  | 8  | 406  | 22.9 | 2.72  |
| Pput_1121 | 148546364 | molybdopterin dinucleotide-binding region                               | 1  | 1  | 1  | 26   | 1.9  | 0.05  |
| Pput_1122 | 148546365 | glutaredoxin-like protein                                               | 2  | 2  | 2  | 131  | 17.1 | 0.71  |
| Pput_1123 | 148546366 | bacterioferritin                                                        | 11 | 10 | 9  | 1216 | 45.9 | 14.22 |
| Pput_1125 | 148546368 | alkyl hydroperoxide reductase/ Thiol specific antioxidant/ Mal allergen | 7  | 10 | 6  | 654  | 28   | 6.1   |

|           |           |                                                                  |    |    |    |      |      |       |
|-----------|-----------|------------------------------------------------------------------|----|----|----|------|------|-------|
| Pput_1127 | 148546370 | dihydroorotase                                                   | 3  | 8  | 10 | 478  | 26.4 | 1.94  |
| Pput_1129 | 148546372 | argininosuccinate synthase                                       | 2  | 7  | 7  | 182  | 18.8 | 0.91  |
| Pput_1133 | 148546376 | endonuclease III                                                 | 2  | 1  | 2  | 69   | 2.7  | 0.2   |
| Pput_1135 | 148546378 | electron transport complex, RnfABCDGE type, D subunit            | 1  | 1  | 1  | 28   | 3.1  | 0.11  |
| Pput_1137 | 148546380 | methionyl-tRNA synthetase                                        | 2  | 7  | 7  | 270  | 8.7  | 0.58  |
| Pput_1138 | 148546381 | hypothetical protein Pput_1138                                   | 2  | 2  | 2  | 313  | 8.5  | 0.42  |
| Pput_1140 | 148546383 | deoxycytidine triphosphate deaminase                             | 4  | 2  | 3  | 198  | 7.4  | 1.14  |
| Pput_1144 | 148546387 | succinylglutamate desuccinylase/aspartoacylase                   | 1  | 2  | 2  | 47   | 2.7  | 0.19  |
| Pput_1147 | 148546390 | penicillin amidase                                               | 2  | 7  | 8  | 241  | 9    | 0.37  |
| Pput_1149 | 148546392 | Serine O-acetyltransferase                                       | 1  | 1  | 1  | 27   | 4.3  | 0.15  |
| Pput_1150 | 148546393 | synthetase, putative                                             | 2  | 1  | 1  | 68   | 3.1  | 0.26  |
| Pput_1152 | 148546395 | pyridoxal-5~-phosphate-dependent enzyme, beta subunit            | 2  | 3  | 3  | 150  | 10   | 0.49  |
| Pput_1154 | 148546397 | water stress/hypersensitive response protein                     | 2  | 1  | 1  | 67   | 7.2  | 0.4   |
| Pput_1155 | 148546398 | hypothetical protein Pput_1155                                   | 2  | 1  | 1  | 94   | 5.7  | 0.44  |
| Pput_1157 | 148546400 | OmpA/MotB domain-containing protein                              | 30 | 16 | 11 | 3702 | 37.4 | 23.89 |
| Pput_1162 | 148546405 | Beta-agarase                                                     | 2  | 5  | 4  | 199  | 5.1  | 0.23  |
| Pput_1163 | 148546406 | beta-lactamase                                                   | 2  | 1  | 2  | 80   | 3.3  | 0.25  |
| Pput_1165 | 148546408 | pyridoxamine 5~-phosphate oxidase                                | 2  | 3  | 4  | 183  | 17.2 | 1.08  |
| Pput_1167 | 148546410 | 17 kDa surface antigen                                           | 8  | 10 | 8  | 1446 | 43.5 | 14.39 |
| Pput_1171 | 148546414 | ABC transporter related                                          | 3  | 8  | 7  | 664  | 28.3 | 4.19  |
| Pput_1172 | 148546415 | leucine/isoleucine/valine transporter ATP-binding subunit        | 6  | 8  | 9  | 771  | 23.5 | 5.12  |
| Pput_1173 | 148546416 | leucine/isoleucine/valine transporter permease subunit           | 2  | 1  | 1  | 66   | 3.1  | 0.16  |
| Pput_1175 | 148546418 | extracellular ligand-binding receptor                            | 3  | 22 | 15 | 919  | 44.2 | 6.99  |
| Pput_1177 | 148546420 | 3-hydroxyisobutyrate dehydrogenase                               | 1  | 6  | 5  | 152  | 22.4 | 0.77  |
| Pput_1179 | 148546422 | ATP-dependent helicase HepA                                      | 4  | 13 | 15 | 838  | 12.4 | 0.98  |
| Pput_1180 | 148546423 | hypothetical protein Pput_1180                                   | 2  | 1  | 1  | 162  | 5.2  | 0.3   |
| Pput_1186 | 148546429 | secretion protein HlyD family protein                            | 1  | 1  | 1  | 83   | 5.2  | 0.12  |
| Pput_1191 | 148546434 | acetolactate synthase                                            | 4  | 12 | 9  | 998  | 22.1 | 1.69  |
| Pput_1196 | 148546439 | glutathione S-transferase domain-containing protein              | 3  | 4  | 5  | 250  | 23   | 1.64  |
| Pput_1198 | 148546441 | LysR family transcriptional regulator                            | 2  | 4  | 6  | 239  | 15.4 | 1.1   |
| Pput_1206 | 148546449 | outer membrane porin                                             | 1  | 2  | 1  | 39   | 2.9  | 0.17  |
| Pput_1209 | 148546452 | ribonucleotide-diphosphate reductase subunit beta                | 2  | 3  | 3  | 170  | 7.5  | 0.52  |
| Pput_1210 | 148546453 | ribonucleotide-diphosphate reductase subunit alpha               | 4  | 8  | 8  | 503  | 11.1 | 0.4   |
| Pput_1211 | 148546454 | two component transcriptional regulator                          | 1  | 1  | 1  | 29   | 5.2  | 0.15  |
| Pput_1212 | 148546455 | integral membrane sensor signal transduction histidine kinase    | 1  | 1  | 1  | 30   | 1.9  | 0.06  |
| Pput_1214 | 148546457 | dienelactone hydrolase                                           | 1  | 3  | 3  | 92   | 11.4 | 0.45  |
| Pput_1221 | 148546464 | hypothetical protein Pput_1221                                   | 2  | 1  | 1  | 71   | 5.2  | 0.44  |
| Pput_1225 | 148546468 | hypothetical protein Pput_1225                                   | 1  | 1  | 1  | 36   | 3.6  | 0.12  |
| Pput_1232 | 148546475 | DNA polymerase IV                                                | 1  | 1  | 1  | 25   | 2.5  | 0.09  |
| Pput_1234 | 148546477 | prolyl-tRNA synthetase                                           | 7  | 8  | 12 | 384  | 16.3 | 1.12  |
| Pput_1235 | 148546478 | outer membrane porin                                             | 44 | 90 | 24 | 7732 | 52.5 | 24.65 |
| Pput_1238 | 148546481 | cold-shock DNA-binding domain-containing protein                 | 2  | 3  | 3  | 176  | 13.2 | 0.82  |
| Pput_1239 | 148546482 | Ferritin, Dps family protein                                     | 6  | 7  | 7  | 844  | 39.5 | 6.51  |
| Pput_1242 | 148546485 | aspartyl-tRNA synthetase                                         | 5  | 21 | 26 | 1533 | 25.5 | 4.82  |
| Pput_1243 | 148546486 | hypothetical protein Pput_1243                                   | 2  | 1  | 1  | 117  | 4.4  | 0.28  |
| Pput_1245 | 148546488 | Holliday junction DNA helicase RuvA                              | 1  | 1  | 1  | 41   | 4.9  | 0.17  |
| Pput_1247 | 148546490 | Pol-Pal system-associated acyl-CoA thioesterase                  | 2  | 1  | 1  | 85   | 6.7  | 0.44  |
| Pput_1248 | 148546491 | Tol-Pal system, TolQ                                             | 3  | 10 | 7  | 544  | 29.4 | 5.25  |
| Pput_1249 | 148546492 | biopolymer transport, TolR                                       | 1  | 1  | 1  | 29   | 8.7  | 0.24  |
| Pput_1251 | 148546494 | translocation protein TolB                                       | 4  | 11 | 11 | 522  | 24.3 | 2.05  |
| Pput_1252 | 148546495 | peptidoglycan-associated lipoprotein                             | 7  | 20 | 10 | 818  | 22.9 | 27.43 |
| Pput_1254 | 148546497 | radical SAM domain-containing protein                            | 1  | 2  | 2  | 61   | 8.8  | 0.34  |
| Pput_1255 | 148546498 | exsB protein                                                     | 3  | 5  | 5  | 412  | 18.3 | 2.69  |
| Pput_1260 | 148546503 | quinolinate synthetase                                           | 1  | 1  | 1  | 33   | 2.6  | 0.1   |
| Pput_1262 | 148546505 | peptidase M48, Ste24p                                            | 3  | 2  | 2  | 181  | 5.2  | 0.28  |
| Pput_1266 | 148546509 | glycine cleavage system regulatory protein-like protein          | 1  | 1  | 1  | 36   | 5.4  | 0.19  |
| Pput_1267 | 148546510 | dihydrodipicolinate synthase                                     | 4  | 3  | 7  | 291  | 16.9 | 1.52  |
| Pput_1268 | 148546511 | hypothetical protein Pput_1268                                   | 3  | 11 | 14 | 596  | 23.3 | 4.18  |
| Pput_1270 | 148546513 | phosphoribosylaminoimidazole-succinocarboxamide synthase         | 4  | 8  | 11 | 398  | 22.5 | 5.22  |
| Pput_1279 | 148546522 | malate:quinone oxidoreductase                                    | 1  | 1  | 1  | 52   | 1.5  | 0.06  |
| Pput_1284 | 148546527 | dihydrodipicolinate synthetase                                   | 1  | 1  | 1  | 35   | 3.5  | 0.11  |
| Pput_1287 | 148546530 | AraC family transcriptional regulator                            | 1  | 1  | 1  | 27   | 3.1  | 0.13  |
| Pput_1288 | 148546531 | LysR family transcriptional regulator                            | 3  | 2  | 3  | 135  | 6.8  | 0.46  |
| Pput_1290 | 148546533 | hypothetical protein Pput_1290                                   | 4  | 2  | 2  | 150  | 6    | 0.56  |
| Pput_1293 | 148546536 | AsnC family transcriptional regulator                            | 1  | 1  | 1  | 31   | 6.1  | 0.2   |
| Pput_1294 | 148546537 | cystathionine gamma-lyase                                        | 3  | 1  | 2  | 108  | 2.5  | 0.27  |
| Pput_1296 | 148546539 | hypothetical protein Pput_1296                                   | 3  | 1  | 2  | 134  | 1.5  | 0.18  |
| Pput_1297 | 148546540 | ribonuclease D                                                   | 2  | 8  | 8  | 421  | 23.1 | 1.76  |
| Pput_1299 | 148546542 | D-isomer specific 2-hydroxyacid dehydrogenase, NAD-binding       | 1  | 3  | 3  | 65   | 12.3 | 0.37  |
| Pput_1300 | 148546543 | nitroreductase                                                   | 2  | 1  | 2  | 60   | 3    | 0.34  |
| Pput_1302 | 148546545 | hypothetical protein Pput_1302                                   | 1  | 2  | 2  | 60   | 5.2  | 0.17  |
| Pput_1306 | 148546548 | oligopeptidase B                                                 | 3  | 3  | 4  | 213  | 4.4  | 0.35  |
| Pput_1307 | 148546549 | hypothetical protein Pput_1307                                   | 1  | 3  | 2  | 56   | 13.9 | 0.46  |
| Pput_1308 | 148546550 | glutamine amidotransferase, class-II                             | 6  | 2  | 2  | 226  | 10.1 | 0.93  |
| Pput_1310 | 148546552 | LysR family transcriptional regulator                            | 1  | 1  | 1  | 68   | 4    | 0.11  |
| Pput_1312 | 148546554 | LamB/YcsF family protein                                         | 1  | 1  | 1  | 60   | 4.3  | 0.13  |
| Pput_1316 | 148546558 | ATPase                                                           | 2  | 6  | 6  | 391  | 17.1 | 2.37  |
| Pput_1318 | 148546560 | cysteine synthase A                                              | 6  | 11 | 11 | 1101 | 36.1 | 7.63  |
| Pput_1319 | 148546561 | aspartyl/asparaginyl beta-hydroxylase                            | 2  | 1  | 2  | 109  | 3.5  | 0.32  |
| Pput_1324 | 148546566 | bifunctional isocitrate dehydrogenase kinase/phosphatase protein | 4  | 2  | 3  | 187  | 3.2  | 0.3   |
| Pput_1326 | 148546568 | RNA-binding S1 domain-containing protein                         | 4  | 1  | 2  | 124  | 2.9  | 0.48  |
| Pput_1329 | 148546571 | putative ribonuclease BN                                         | 1  | 1  | 1  | 29   | 2.5  | 0.11  |
| Pput_1330 | 148546572 | peptide deformylase                                              | 1  | 1  | 1  | 39   | 4.5  | 0.19  |
| Pput_1333 | 148546575 | hypothetical protein Pput_1333                                   | 2  | 2  | 1  | 215  | 9.9  | 0.78  |
| Pput_1335 | 148546577 | activator of Hsp90 ATPase 1 family protein                       | 1  | 3  | 3  | 93   | 23   | 0.76  |
| Pput_1338 | 148546580 | alpha/beta hydrolase fold                                        | 3  | 1  | 2  | 196  | 3.8  | 0.45  |
| Pput_1339 | 148546581 | acyl-CoA synthetase                                              | 2  | 3  | 4  | 156  | 6.8  | 0.31  |
| Pput_1340 | 148546582 | acyl-CoA synthetase                                              | 3  | 5  | 5  | 440  | 9.9  | 0.8   |
| Pput_1344 | 148546586 | ATP-dependent helicase HrpA                                      | 4  | 5  | 8  | 336  | 4.3  | 0.3   |

|           |           |                                                                                               |   |    |    |     |      |      |
|-----------|-----------|-----------------------------------------------------------------------------------------------|---|----|----|-----|------|------|
| Pput_1345 | 148546587 | 3-oxoacyl-(acyl carrier protein) synthase III                                                 | 2 | 9  | 7  | 451 | 23.3 | 1.53 |
| Pput_1346 | 148546588 | hypothetical protein Pput_1346                                                                | 1 | 1  | 1  | 34  | 2.9  | 0.08 |
| Pput_1348 | 148546590 | ABC transporter related                                                                       | 1 | 1  | 1  | 35  | 1.3  | 0.05 |
| Pput_1350 | 148546592 | alpha/beta hydrolase fold                                                                     | 2 | 1  | 1  | 75  | 3    | 0.24 |
| Pput_1351 | 148546593 | LysR family transcriptional regulator                                                         | 2 | 6  | 5  | 294 | 17.3 | 1.57 |
| Pput_1353 | 148546595 | NAD(P)H dehydrogenase (quinone)                                                               | 1 | 1  | 1  | 26  | 4.9  | 0.17 |
| Pput_1366 | 148546606 | LysR family transcriptional regulator                                                         | 2 | 3  | 3  | 68  | 11.3 | 0.51 |
| Pput_1370 | 148546610 | transcriptional regulator IclR-like protein                                                   | 2 | 2  | 2  | 94  | 2    | 0.14 |
| Pput_1374 | 148546614 | transposase, mutator type                                                                     | 1 | 1  | 1  | 26  | 3.5  | 0.08 |
| Pput_1377 | 148546617 | MscS mechanosensitive ion channel                                                             | 1 | 1  | 1  | 28  | 2.5  | 0.08 |
| Pput_1378 | 148546618 | DEAD/DEAH box helicase domain-containing protein                                              | 4 | 10 | 11 | 508 | 24.1 | 1.7  |
| Pput_1389 | 148546629 | LysR family transcriptional regulator                                                         | 1 | 1  | 1  | 42  | 3.4  | 0.11 |
| Pput_1392 | 148546632 | TolC family type I secretion outer membrane protein                                           | 4 | 6  | 7  | 228 | 15.5 | 0.75 |
| Pput_1394 | 148546634 | yecA family protein                                                                           | 2 | 1  | 1  | 125 | 4.1  | 0.34 |
| Pput_1395 | 148546635 | ATP-dependent DNA helicase RecQ                                                               | 2 | 2  | 2  | 63  | 1.4  | 0.14 |
| Pput_1396 | 148546636 | MarR family transcriptional regulator                                                         | 2 | 5  | 4  | 308 | 31   | 2.2  |
| Pput_1397 | 148546637 | patatin                                                                                       | 1 | 1  | 1  | 25  | 1.4  | 0.05 |
| Pput_1403 | 148546643 | helix-turn-helix domain-containing protein                                                    | 2 | 3  | 3  | 98  | 8.8  | 0.4  |
| Pput_1405 | 148546645 | nitroreductase                                                                                | 5 | 5  | 7  | 465 | 22.2 | 3.85 |
| Pput_1406 | 148546646 | integral membrane sensor signal transduction histidine kinase                                 | 1 | 1  | 1  | 27  | 1.6  | 0.08 |
| Pput_1408 | 148546648 | two component transcriptional regulator                                                       | 1 | 2  | 1  | 47  | 4.4  | 0.33 |
| Pput_1410 | 148546650 | YciL-like protein                                                                             | 1 | 1  | 1  | 36  | 9.1  | 0.38 |
| Pput_1412 | 148546652 | phosphotransferase domain-containing protein                                                  | 1 | 1  | 1  | 27  | 5.2  | 0.12 |
| Pput_1413 | 148546653 | Sua5/YciO/YrdC/YwlC family protein                                                            | 2 | 1  | 2  | 63  | 4.5  | 0.3  |
| Pput_1416 | 148546656 | RNA-binding S4 domain-containing protein                                                      | 3 | 2  | 2  | 136 | 3.9  | 0.38 |
| Pput_1419 | 148546659 | FAD linked oxidase domain-containing protein                                                  | 1 | 1  | 1  | 35  | 0.9  | 0.03 |
| Pput_1423 | 148546663 | pterin-4-alpha-carbinolamine dehydratase                                                      | 1 | 2  | 2  | 60  | 16.1 | 0.66 |
| Pput_1428 | 229328219 | acetyl-CoA synthetase                                                                         | 3 | 13 | 14 | 693 | 20.5 | 1.76 |
| Pput_1429 | 148546669 | cationic amino acid ABC transporter, periplasmic binding protein                              | 6 | 4  | 4  | 518 | 12.6 | 1.44 |
| Pput_1431 | 148546671 | polar amino acid ABC transporter, inner membrane subunit                                      | 1 | 1  | 1  | 38  | 3.4  | 0.14 |
| Pput_1432 | 148546672 | ABC transporter related                                                                       | 2 | 4  | 6  | 160 | 15   | 1.12 |
| Pput_1434 | 148546674 | bifunctional N-succinyl-diaminopimelate-aminotransferase/acetylornithine transaminase protein | 2 | 4  | 5  | 194 | 14.8 | 0.67 |
| Pput_1435 | 148546675 | arginine N-succinyltransferase                                                                | 1 | 1  | 1  | 30  | 2.7  | 0.1  |
| Pput_1436 | 148546676 | arginine N-succinyltransferase                                                                | 3 | 6  | 5  | 304 | 18.7 | 0.91 |
| Pput_1437 | 148546677 | succinylglutamic semialdehyde dehydrogenase                                                   | 2 | 3  | 4  | 184 | 5.5  | 0.38 |
| Pput_1438 | 148546678 | succinylarginine dihydrolase                                                                  | 3 | 3  | 4  | 270 | 7.6  | 0.58 |
| Pput_1440 | 148546680 | succinylglutamate desuccinylase                                                               | 4 | 6  | 6  | 499 | 14.6 | 1.42 |
| Pput_1441 | 148546681 | alanyl-tRNA synthetase                                                                        | 9 | 12 | 13 | 990 | 14.3 | 1.19 |
| Pput_1442 | 148546682 | aspartate kinase                                                                              | 5 | 12 | 14 | 865 | 23.1 | 4.25 |
| Pput_1444 | 148546684 | magnesium transporter                                                                         | 1 | 1  | 1  | 31  | 2.1  | 0.07 |
| Pput_1445 | 148546685 | Arc domain-containing protein                                                                 | 2 | 2  | 2  | 85  | 14.3 | 1.1  |
| Pput_1446 | 148546686 | phosphonate metabolism protein/1,5-bisphosphokinase (PRPP-forming) PhnN                       | 2 | 2  | 2  | 107 | 10.7 | 0.57 |
| Pput_1450 | 148546690 | dihydroliipoamide dehydrogenase                                                               | 2 | 1  | 1  | 102 | 3.3  | 0.16 |
| Pput_1451 | 148546691 | branched-chain alpha-keto acid dehydrogenase subunit E2                                       | 3 | 7  | 8  | 305 | 20.3 | 1.09 |
| Pput_1452 | 148546692 | transketolase, central region                                                                 | 3 | 2  | 2  | 154 | 6    | 0.6  |
| Pput_1453 | 148546693 | 3-methyl-2-oxobutanoate dehydrogenase (2-methylpropanoyl-transferring)                        | 2 | 1  | 1  | 56  | 2    | 0.16 |
| Pput_1454 | 148546694 | AsnC family transcriptional regulator                                                         | 3 | 1  | 2  | 126 | 7.5  | 0.63 |
| Pput_1457 | 148546697 | type IV pilus assembly PilZ                                                                   | 2 | 4  | 4  | 117 | 13.8 | 0.77 |
| Pput_1461 | 148546701 | putative CheW protein                                                                         | 3 | 5  | 5  | 322 | 17.5 | 1.15 |
| Pput_1462 | 148546702 | protein-glutamate O-methyltransferase                                                         | 2 | 1  | 2  | 62  | 4    | 0.24 |
| Pput_1476 | 148546715 | glycosyl transferase family protein                                                           | 1 | 1  | 1  | 55  | 0.8  | 0.03 |
| Pput_1477 | 148546716 | hypothetical protein Pput_1477                                                                | 1 | 2  | 2  | 63  | 2.7  | 0.08 |
| Pput_1484 | 148546723 | thiamine pyrophosphate binding domain-containing protein                                      | 1 | 1  | 1  | 43  | 2    | 0.06 |
| Pput_1486 | 148546725 | NAD-dependent epimerase/dehydratase                                                           | 1 | 1  | 1  | 27  | 2.8  | 0.11 |
| Pput_1488 | 148546727 | Beta-ketoacyl-acyl-carrier-protein synthase I                                                 | 2 | 2  | 2  | 171 | 7.4  | 0.35 |
| Pput_1494 | 148546733 | sigma-54 dependent transcriptional regulator                                                  | 6 | 10 | 10 | 474 | 19.3 | 1.4  |
| Pput_1498 | 148546737 | flagellar MS-ring protein                                                                     | 1 | 1  | 1  | 30  | 1.5  | 0.06 |
| Pput_1499 | 148546738 | flagellar motor switch protein G                                                              | 1 | 1  | 1  | 26  | 3.5  | 0.1  |
| Pput_1501 | 148546740 | flagellum-specific ATP synthase                                                               | 1 | 1  | 1  | 25  | 3.1  | 0.08 |
| Pput_1507 | 148546746 | flagellar basal body-associated protein FliL                                                  | 2 | 1  | 1  | 65  | 3    | 0.43 |
| Pput_1508 | 148546747 | flagellar motor switch protein FliM                                                           | 1 | 1  | 1  | 21  | 1.6  | 0.1  |
| Pput_1525 | 148546764 | cobyrinic acid a,c-diamide synthase                                                           | 3 | 9  | 6  | 408 | 18.4 | 2.48 |
| Pput_1526 | 148546765 | flagellar biosynthesis sigma factor                                                           | 3 | 1  | 3  | 106 | 4.5  | 0.42 |
| Pput_1533 | 148546772 | cobyrinic acid a,c-diamide synthase                                                           | 1 | 1  | 1  | 60  | 5.7  | 0.13 |
| Pput_1535 | 148546774 | putative CheW protein                                                                         | 5 | 2  | 2  | 345 | 18.9 | 2.4  |
| Pput_1536 | 148546775 | hypothetical protein Pput_1536                                                                | 1 | 1  | 1  | 31  | 9.9  | 0.26 |
| Pput_1540 | 148546779 | cytochrome c biogenesis protein CcmA                                                          | 1 | 1  | 1  | 29  | 6.2  | 0.17 |
| Pput_1549 | 148546788 | hypothetical protein Pput_1549                                                                | 2 | 2  | 1  | 105 | 10.1 | 0.84 |
| Pput_1553 | 148546792 | glutathione-dependent formaldehyde-activating, GFA                                            | 2 | 1  | 2  | 121 | 9.6  | 0.81 |
| Pput_1554 | 148546793 | peptidylprolyl isomerase, FKBP-type                                                           | 1 | 1  | 1  | 28  | 9.1  | 0.25 |
| Pput_1561 | 148546800 | hypothetical protein Pput_1561                                                                | 1 | 1  | 1  | 31  | 3.5  | 0.11 |
| Pput_1565 | 148546803 | sulfate ABC transporter, periplasmic sulfate-binding protein                                  | 2 | 3  | 3  | 109 | 8.7  | 0.44 |
| Pput_1571 | 148546809 | hydroxypyruvate isomerase                                                                     | 2 | 2  | 2  | 82  | 6.5  | 0.41 |
| Pput_1572 | 148546810 | glyoxylate carboligase                                                                        | 1 | 1  | 1  | 27  | 2    | 0.06 |
| Pput_1574 | 148546812 | TetR family transcriptional regulator                                                         | 3 | 3  | 3  | 182 | 16.3 | 0.93 |
| Pput_1575 | 148546813 | hypothetical protein Pput_1575                                                                | 1 | 1  | 1  | 43  | 3.6  | 0.12 |
| Pput_1580 | 148546818 | ureidoglycolate hydrolase                                                                     | 1 | 1  | 1  | 34  | 5.4  | 0.21 |
| Pput_1582 | 148546820 | chitin deacetylase                                                                            | 1 | 1  | 1  | 34  | 2.6  | 0.11 |
| Pput_1585 | 148546823 | GntR family transcriptional regulator                                                         | 2 | 4  | 4  | 169 | 19   | 1.06 |
| Pput_1587 | 148546825 | guanine deaminase                                                                             | 2 | 3  | 3  | 165 | 10.1 | 0.33 |
| Pput_1589 | 148546827 | xanthine dehydrogenase, molybdopterin binding subunit                                         | 2 | 2  | 2  | 126 | 3.3  | 0.13 |
| Pput_1590 | 148546828 | xanthine dehydrogenase, small subunit                                                         | 2 | 1  | 1  | 106 | 1.9  | 0.14 |
| Pput_1591 | 148546829 | GntR family transcriptional regulator                                                         | 3 | 8  | 8  | 261 | 29.7 | 3.17 |
| Pput_1592 | 148546830 | chromosome segregation protein SMC                                                            | 1 | 1  | 1  | 37  | 1    | 0.03 |
| Pput_1593 | 148546831 | cell division protein ZipA                                                                    | 5 | 7  | 6  | 831 | 27.3 | 2.4  |
| Pput_1599 | 148546837 | DNA polymerase III subunits gamma and tau                                                     | 2 | 1  | 1  | 55  | 1.3  | 0.1  |
| Pput_1601 | 148546839 | recombination protein RecR                                                                    | 1 | 1  | 1  | 37  | 7.5  | 0.18 |
| Pput_1602 | 148546840 | adenine phosphoribosyltransferase                                                             | 2 | 1  | 1  | 104 | 4.9  | 0.38 |
| Pput_1603 | 148546841 | CRP/FNR family transcriptional regulator                                                      | 2 | 3  | 3  | 164 | 12.7 | 0.61 |

|           |           |                                                                 |    |    |    |      |      |       |
|-----------|-----------|-----------------------------------------------------------------|----|----|----|------|------|-------|
| Pput_1604 | 148546842 | coproporphyrinogen III oxidase                                  | 2  | 9  | 7  | 225  | 16.7 | 0.79  |
| Pput_1609 | 148546847 | cytochrome c oxidase cbb3 type, accessory protein FixG          | 3  | 1  | 1  | 103  | 1.7  | 0.21  |
| Pput_1610 | 148546848 | cytochrome c oxidase, cbb3-type, subunit III                    | 1  | 2  | 2  | 85   | 9.5  | 0.22  |
| Pput_1612 | 148546850 | cytochrome c oxidase, cbb3-type, subunit II                     | 9  | 5  | 5  | 549  | 19.8 | 3.6   |
| Pput_1613 | 148546851 | cytochrome c oxidase, cbb3-type, subunit I                      | 17 | 1  | 1  | 851  | 2.5  | 1.19  |
| Pput_1617 | 148546855 | cytochrome c oxidase, cbb3-type, subunit II                     | 3  | 4  | 5  | 232  | 17.8 | 2.39  |
| Pput_1618 | 148546856 | cytochrome c oxidase, cbb3-type, subunit I                      | 2  | 1  | 1  | 63   | 3    | 0.14  |
| Pput_1619 | 148546857 | hypothetical protein Pput_1619                                  | 1  | 1  | 1  | 28   | 3.9  | 0.15  |
| Pput_1624 | 148546862 | peptide synthase                                                | 3  | 1  | 3  | 79   | 0.3  | 0.03  |
| Pput_1638 | 148546876 | two component transcriptional regulator                         | 1  | 1  | 1  | 34   | 6.2  | 0.15  |
| Pput_1640 | 148546878 | diaminobutyrate--2-oxoglutarate aminotransferase                | 1  | 1  | 1  | 26   | 3.7  | 0.07  |
| Pput_1641 | 148546879 | transcription factor jumonji                                    | 1  | 1  | 1  | 28   | 1.9  | 0.09  |
| Pput_1650 | 148546888 | electron-transferring-flavoprotein dehydrogenase                | 4  | 10 | 10 | 485  | 11.4 | 1.39  |
| Pput_1651 | 148546889 | electron transfer flavoprotein, alpha/beta-subunit-like protein | 4  | 13 | 13 | 717  | 42.2 | 8.47  |
| Pput_1652 | 148546890 | electron transfer flavoprotein, alpha subunit-like protein      | 6  | 5  | 4  | 553  | 16.2 | 2.76  |
| Pput_1653 | 148546891 | amino acid ABC transporter periplasmic protein                  | 2  | 2  | 2  | 105  | 8.8  | 0.4   |
| Pput_1655 | 148546893 | OmpA/MotB domain-containing protein                             | 1  | 3  | 3  | 98   | 11.5 | 0.43  |
| Pput_1656 | 148546894 | GntR family transcriptional regulator                           | 2  | 2  | 4  | 103  | 4.1  | 0.26  |
| Pput_1660 | 148546898 | type II citrate synthase                                        | 7  | 27 | 13 | 1263 | 28   | 6.86  |
| Pput_1661 | 148546899 | succinate dehydrogenase, cytochrome b556 subunit                | 4  | 1  | 1  | 130  | 7.8  | 1.12  |
| Pput_1662 | 148546900 | succinate dehydrogenase, hydrophobic membrane anchor protein    | 38 | 3  | 2  | 1824 | 8.2  | 14.57 |
| Pput_1663 | 148546901 | succinate dehydrogenase flavoprotein subunit                    | 28 | 37 | 26 | 3409 | 34.7 | 8.63  |
| Pput_1664 | 148546902 | succinate dehydrogenase iron-sulfur subunit                     | 11 | 23 | 14 | 1521 | 59.8 | 20    |
| Pput_1665 | 148546903 | 2-oxoglutarate dehydrogenase E1 component                       | 34 | 26 | 33 | 3800 | 23   | 6.48  |
| Pput_1666 | 148546904 | dihydrolipoamide succinyltransferase                            | 16 | 18 | 16 | 1636 | 28.5 | 6.74  |
| Pput_1667 | 148546905 | dihydrolipoamide dehydrogenase                                  | 10 | 34 | 23 | 2817 | 44.4 | 13.57 |
| Pput_1668 | 148546906 | succinyl-CoA synthetase subunit beta                            | 9  | 32 | 24 | 2215 | 63.7 | 19.33 |
| Pput_1669 | 148546907 | succinyl-CoA synthetase subunit alpha                           | 10 | 13 | 16 | 1705 | 42.9 | 13.76 |
| Pput_1672 | 148546910 | hypothetical protein Pput_1672                                  | 1  | 1  | 1  | 29   | 2.8  | 0.19  |
| Pput_1674 | 148546912 | amino acid adenylation domain-containing protein                | 3  | 1  | 1  | 81   | 0.2  | 0.03  |
| Pput_1675 | 148546913 | amino acid adenylation domain-containing protein                | 1  | 1  | 1  | 28   | 1.1  | 0.03  |
| Pput_1678 | 148546916 | TonB-dependent siderophore receptor                             | 1  | 1  | 1  | 24   | 0.6  | 0.04  |
| Pput_1682 | 148546920 | hypothetical protein Pput_1682                                  | 1  | 1  | 1  | 27   | 2.4  | 0.09  |
| Pput_1686 | 148546924 | hypothetical protein Pput_1686                                  | 3  | 1  | 2  | 184  | 15.6 | 1.29  |
| Pput_1689 | 148546927 | heat shock protein 90                                           | 16 | 17 | 16 | 1418 | 21.6 | 2.41  |
| Pput_1690 | 148546928 | dienelactone hydrolase                                          | 5  | 6  | 6  | 721  | 17.8 | 3.47  |
| Pput_1693 | 148546931 | 3-oxoacyl-(acyl carrier protein) synthase I                     | 5  | 12 | 9  | 894  | 22.4 | 2.53  |
| Pput_1694 | 148546932 | 3-hydroxydecanoyl-(acyl carrier protein) dehydratase            | 4  | 5  | 4  | 302  | 17   | 4.66  |
| Pput_1695 | 148546933 | integral membrane sensor hybrid histidine kinase                | 1  | 1  | 1  | 28   | 1.6  | 0.05  |
| Pput_1697 | 148546935 | TonB-dependent receptor, plug                                   | 1  | 1  | 1  | 47   | 1.3  | 0.05  |
| Pput_1698 | 148546936 | NAD(P)H-dependent glycerol-3-phosphate dehydrogenase            | 6  | 3  | 3  | 333  | 10   | 1.08  |
| Pput_1699 | 148546937 | hypothetical protein Pput_1699                                  | 1  | 1  | 1  | 62   | 20.9 | 0.31  |
| Pput_1703 | 148546941 | alpha/beta hydrolase fold                                       | 2  | 7  | 7  | 239  | 23.9 | 1.87  |
| Pput_1704 | 148546942 | hypothetical protein Pput_1704                                  | 3  | 1  | 2  | 98   | 3    | 0.39  |
| Pput_1710 | 148546948 | osmosensitive K+ channel signal transduction histidine kinase   | 2  | 1  | 2  | 57   | 1    | 0.08  |
| Pput_1711 | 148546949 | two component transcriptional regulator                         | 1  | 1  | 1  | 23   | 13   | 0.15  |
| Pput_1712 | 148546950 | LysR family transcriptional regulator                           | 4  | 7  | 8  | 298  | 24.9 | 1.46  |
| Pput_1715 | 148546953 | ABC transporter related                                         | 1  | 5  | 5  | 83   | 9.5  | 0.36  |
| Pput_1718 | 148546956 | extracellular solute-binding protein                            | 2  | 5  | 5  | 198  | 10.1 | 0.35  |
| Pput_1721 | 148546959 | hydroxyacylglutathione hydrolase                                | 3  | 6  | 4  | 175  | 14.7 | 1.05  |
| Pput_1725 | 148546963 | lysine decarboxylase                                            | 1  | 1  | 1  | 47   | 1.5  | 0.04  |
| Pput_1727 | 148546965 | NADPH-dependent FMN reductase                                   | 8  | 4  | 6  | 665  | 18.3 | 5.03  |
| Pput_1734 | 148546972 | NADH dehydrogenase subunit N                                    | 14 | 1  | 1  | 776  | 1.8  | 0.98  |
| Pput_1739 | 148546977 | NADH dehydrogenase subunit I                                    | 8  | 8  | 7  | 597  | 37.9 | 6.34  |
| Pput_1741 | 148546979 | NADH dehydrogenase subunit G                                    | 12 | 11 | 12 | 925  | 9.7  | 1.43  |
| Pput_1742 | 148546980 | NADH dehydrogenase I subunit F                                  | 3  | 9  | 9  | 427  | 15   | 1.71  |
| Pput_1744 | 148546982 | bifunctional NADH:ubiquinone oxidoreductase subunit C/D         | 6  | 20 | 18 | 959  | 28.8 | 2.46  |
| Pput_1745 | 148546983 | NADH dehydrogenase subunit B                                    | 3  | 7  | 6  | 419  | 28.4 | 3.56  |
| Pput_1746 | 148546984 | NADH dehydrogenase subunit A                                    | 3  | 2  | 3  | 186  | 12.4 | 1.1   |
| Pput_1748 | 148546986 | isocitrate lyase                                                | 6  | 16 | 12 | 930  | 24.5 | 4.16  |
| Pput_1753 | 148546991 | elongation factor G                                             | 5  | 23 | 20 | 1418 | 20.9 | 3.37  |
| Pput_1754 | 148546992 | hypothetical protein Pput_1754                                  | 1  | 1  | 1  | 52   | 7.5  | 0.21  |
| Pput_1760 | 148546998 | glutathione S-transferase domain-containing protein             | 1  | 1  | 1  | 29   | 3.9  | 0.14  |
| Pput_1765 | 148547003 | two component LuxR family transcriptional regulator             | 3  | 1  | 2  | 101  | 5.7  | 0.48  |
| Pput_1770 | 148547007 | sigma-70, region 4 type 2                                       | 1  | 1  | 1  | 31   | 5.8  | 0.2   |
| Pput_1772 | 148547009 | putative prophage repressor                                     | 1  | 1  | 1  | 30   | 6    | 0.16  |
| Pput_1774 | 148547011 | carbamoyl-phosphate synthase L chain, ATP-binding               | 4  | 5  | 4  | 229  | 7.2  | 0.44  |
| Pput_1775 | 148547012 | gamma-carboxygeranoyl-CoA hydratase                             | 3  | 3  | 3  | 193  | 9.6  | 0.66  |
| Pput_1776 | 148547013 | propionyl-CoA carboxylase                                       | 3  | 3  | 4  | 236  | 4.7  | 0.4   |
| Pput_1777 | 148547014 | acyl-CoA dehydrogenase domain-containing protein                | 1  | 13 | 9  | 373  | 25.6 | 1.52  |
| Pput_1778 | 148547015 | AMP-binding domain protein                                      | 1  | 1  | 1  | 27   | 1.6  | 0.06  |
| Pput_1783 | 148547018 | alpha amylase, catalytic region                                 | 2  | 4  | 3  | 120  | 3.6  | 0.31  |
| Pput_1784 | 148547019 | trehalose synthase                                              | 1  | 7  | 6  | 159  | 5.6  | 0.19  |
| Pput_1785 | 148547020 | glycogen branching enzyme                                       | 2  | 6  | 7  | 228  | 8.8  | 0.34  |
| Pput_1786 | 148547021 | outer membrane autotransporter                                  | 1  | 1  | 1  | 29   | 2.5  | 0.1   |
| Pput_1788 | 148547023 | glycogen debranching enzyme GlgX                                | 2  | 15 | 12 | 553  | 13.5 | 1.21  |
| Pput_1789 | 148547024 | hypothetical protein Pput_1789                                  | 1  | 1  | 1  | 58   | 12.5 | 0.42  |
| Pput_1790 | 148547025 | malto-oligosyltrehalose synthase                                | 3  | 9  | 9  | 307  | 7.9  | 0.51  |
| Pput_1791 | 148547026 | 4-alpha-glucanotransferase                                      | 3  | 6  | 7  | 194  | 8.3  | 0.48  |
| Pput_1792 | 148547027 | malto-oligosyltrehalose trehalohydrolase                        | 1  | 2  | 2  | 82   | 4.3  | 0.12  |
| Pput_1795 | 148547030 | 6-phosphogluconate dehydrogenase-like protein                   | 5  | 5  | 5  | 388  | 14.7 | 1.33  |
| Pput_1796 | 148547031 | glucose-6-phosphate 1-dehydrogenase                             | 1  | 3  | 3  | 101  | 6.6  | 0.21  |
| Pput_1797 | 148547032 | glycoside hydrolase 15-related                                  | 1  | 1  | 1  | 22   | 0.8  | 0.06  |
| Pput_1800 | 148547035 | dihydropyrimidine dehydrogenase                                 | 1  | 1  | 1  | 37   | 2.1  | 0.08  |
| Pput_1801 | 148547036 | putative oxidoreductase                                         | 5  | 2  | 3  | 174  | 4.8  | 0.43  |
| Pput_1802 | 148547037 | phenylhydantoinase                                              | 2  | 8  | 8  | 338  | 14.3 | 0.97  |
| Pput_1804 | 148547039 | allantoate amidohydrolase                                       | 2  | 3  | 4  | 181  | 11   | 0.44  |
| Pput_1806 | 148547041 | Lipocalin family protein                                        | 6  | 6  | 7  | 429  | 28.7 | 5.39  |
| Pput_1808 | 148547043 | enoyl-CoA hydratase                                             | 3  | 2  | 3  | 170  | 7.5  | 0.64  |

|           |           |                                                                    |    |    |    |      |      |      |
|-----------|-----------|--------------------------------------------------------------------|----|----|----|------|------|------|
| Pput_1809 | 148547044 | NADH pyrophosphatase                                               | 1  | 2  | 2  | 106  | 10.5 | 0.25 |
| Pput_1812 | 148547047 | alpha/beta hydrolase fold                                          | 7  | 4  | 5  | 475  | 20.3 | 1.92 |
| Pput_1813 | 148547048 | FAD dependent oxidoreductase                                       | 1  | 1  | 1  | 29   | 3.5  | 0.08 |
| Pput_1817 | 148547052 | adenylosuccinate lyase                                             | 5  | 11 | 9  | 472  | 18.6 | 1.73 |
| Pput_1818 | 148547053 | hypothetical protein Pput_1818                                     | 3  | 5  | 5  | 250  | 19.7 | 2.31 |
| Pput_1821 | 148547056 | isocitrate dehydrogenase, NADP-dependent                           | 3  | 13 | 12 | 498  | 15.8 | 0.92 |
| Pput_1822 | 148547057 | isocitrate dehydrogenase, NADP-dependent                           | 4  | 17 | 16 | 949  | 32.1 | 5.86 |
| Pput_1824 | 148547059 | ATP-dependent Clp protease adaptor protein ClpS                    | 1  | 1  | 1  | 26   | 6.7  | 0.29 |
| Pput_1825 | 148547060 | ATP-dependent Clp protease, ATP-binding subunit clpA               | 2  | 5  | 6  | 218  | 7.9  | 0.28 |
| Pput_1828 | 148547063 | leucyl/phenylalanyl-tRNA--protein transferase                      | 2  | 3  | 3  | 155  | 12.4 | 0.67 |
| Pput_1833 | 148547068 | seryl-tRNA synthetase                                              | 5  | 5  | 6  | 514  | 9.6  | 1.32 |
| Pput_1834 | 148547069 | uroporphyrin-III C-methyltransferase                               | 2  | 3  | 3  | 212  | 8.9  | 0.32 |
| Pput_1835 | 148547070 | glutathione S-transferase-like protein                             | 2  | 2  | 2  | 160  | 6.9  | 0.42 |
| Pput_1844 | 148547078 | short-chain dehydrogenase/reductase SDR                            | 1  | 1  | 1  | 37   | 4.3  | 0.14 |
| Pput_1845 | 148547079 | LysR family transcriptional regulator                              | 1  | 1  | 1  | 29   | 4.5  | 0.12 |
| Pput_1849 | 148547083 | pyruvate kinase                                                    | 2  | 1  | 1  | 98   | 2.5  | 0.14 |
| Pput_1858 | 148547090 | isochorismatase hydrolase                                          | 1  | 1  | 1  | 33   | 6.6  | 0.15 |
| Pput_1877 | 148547107 | mandelate racemase/muconate lactonizing protein                    | 2  | 1  | 2  | 83   | 2.3  | 0.18 |
| Pput_1883 | 148547113 | ABC transporter related                                            | 1  | 1  | 1  | 31   | 2.7  | 0.13 |
| Pput_1886 | 148547116 | GntR domain-containing protein                                     | 1  | 1  | 1  | 26   | 4.1  | 0.15 |
| Pput_1889 | 148547119 | aldehyde oxidase and xanthine dehydrogenase, molybdopterin binding | 1  | 1  | 1  | 24   | 1.3  | 0.03 |
| Pput_1891 | 148547121 | MarR family transcriptional regulator                              | 1  | 2  | 2  | 63   | 11.4 | 0.49 |
| Pput_1898 | 148547128 | outer membrane porin                                               | 1  | 1  | 1  | 29   | 1.9  | 0.08 |
| Pput_1909 | 148547139 | short chain dehydrogenase                                          | 2  | 2  | 2  | 84   | 7.8  | 0.44 |
| Pput_1912 | 148547142 | phosphoglycerate mutase                                            | 1  | 2  | 2  | 62   | 5.6  | 0.25 |
| Pput_1913 | 148547143 | putative periplasmic protease                                      | 3  | 1  | 1  | 154  | 2.7  | 0.3  |
| Pput_1931 | 148547156 | hypothetical protein Pput_1931                                     | 1  | 1  | 1  | 28   | 23.5 | 0.52 |
| Pput_1932 | 148547157 | alcohol dehydrogenase                                              | 9  | 7  | 8  | 1526 | 25   | 3.92 |
| Pput_1935 | 148547160 | PAS/PAC sensor signal transduction histidine kinase                | 1  | 2  | 2  | 64   | 5.2  | 0.18 |
| Pput_1936 | 148547161 | non-specific serine/threonine protein kinase                       | 1  | 1  | 1  | 63   | 2.7  | 0.07 |
| Pput_1938 | 148547163 | carbon storage regulator                                           | 2  | 2  | 1  | 144  | 23.1 | 2.07 |
| Pput_1943 | 148547168 | 2-nitropropane dioxygenase, NPD                                    | 2  | 1  | 2  | 64   | 3.3  | 0.2  |
| Pput_1945 | 148547170 | hypothetical protein Pput_1945                                     | 2  | 1  | 1  | 84   | 8    | 0.68 |
| Pput_1948 | 148547173 | cytochrome c, class I                                              | 1  | 1  | 1  | 44   | 3.3  | 0.11 |
| Pput_1949 | 148547174 | UTP-glucose-1-phosphate uridylyltransferase                        | 5  | 5  | 5  | 441  | 11.1 | 1.99 |
| Pput_1950 | 148547175 | glutathione reductase                                              | 2  | 7  | 6  | 320  | 15.1 | 0.75 |
| Pput_1955 | 148547180 | extracellular solute-binding protein                               | 4  | 2  | 3  | 146  | 7    | 0.51 |
| Pput_1957 | 148547182 | hypothetical protein Pput_1957                                     | 1  | 1  | 1  | 28   | 11.3 | 0.36 |
| Pput_1963 | 148547188 | isochorismatase hydrolase                                          | 5  | 2  | 3  | 300  | 11.5 | 1.43 |
| Pput_1965 | 148547190 | hypothetical protein Pput_1965                                     | 1  | 1  | 1  | 41   | 3.8  | 0.13 |
| Pput_1978 | 148547201 | phage integrase family protein                                     | 2  | 1  | 1  | 55   | 2.9  | 0.28 |
| Pput_1983 | 148547205 | hypothetical protein Pput_1983                                     | 1  | 1  | 1  | 66   | 18   | 0.38 |
| Pput_1991 | 148547213 | putative phage repressor                                           | 2  | 4  | 4  | 151  | 13.5 | 0.67 |
| Pput_1995 | 148547217 | shikimate 5-dehydrogenase                                          | 2  | 1  | 2  | 85   | 3.7  | 0.26 |
| Pput_1998 | 148547220 | hypothetical protein Pput_1998                                     | 2  | 6  | 6  | 231  | 29.9 | 5.01 |
| Pput_2000 | 148547222 | precorrin 6A synthase                                              | 1  | 2  | 2  | 75   | 9.6  | 0.29 |
| Pput_2002 | 148547224 | multi-sensor hybrid histidine kinase                               | 2  | 7  | 7  | 310  | 5.4  | 0.3  |
| Pput_2003 | 148547225 | MCP methyltransferase, CheR-type                                   | 1  | 1  | 1  | 34   | 3.3  | 0.12 |
| Pput_2004 | 148547226 | CheB methylesterase                                                | 1  | 1  | 1  | 30   | 2.6  | 0.18 |
| Pput_2007 | 148547229 | TetR family transcriptional regulator                              | 1  | 1  | 1  | 30   | 3.6  | 0.18 |
| Pput_2008 | 148547230 | 3-hydroxybutyryl-CoA dehydrogenase                                 | 1  | 3  | 3  | 51   | 9.6  | 0.42 |
| Pput_2009 | 148547231 | beta-ketothiolase                                                  | 2  | 4  | 5  | 194  | 9.9  | 0.84 |
| Pput_2013 | 148547235 | GntR family transcriptional regulator                              | 1  | 1  | 1  | 35   | 1.8  | 0.07 |
| Pput_2015 | 148547237 | hypothetical protein Pput_2015                                     | 2  | 2  | 2  | 150  | 16.7 | 0.94 |
| Pput_2017 | 148547239 | glycolate oxidase FAD binding subunit                              | 1  | 1  | 1  | 34   | 3.4  | 0.1  |
| Pput_2023 | 148547245 | major facilitator transporter                                      | 1  | 1  | 1  | 28   | 1.1  | 0.08 |
| Pput_2025 | 148547247 | GntR family transcriptional regulator                              | 2  | 2  | 2  | 202  | 9.8  | 0.6  |
| Pput_2030 | 148547252 | secreted hydrolase-like protein                                    | 1  | 1  | 1  | 30   | 2.3  | 0.1  |
| Pput_2032 | 148547254 | TetR family transcriptional regulator                              | 2  | 2  | 2  | 117  | 9.3  | 0.7  |
| Pput_2037 | 148547259 | enoyl-CoA hydratase/isomerase                                      | 1  | 1  | 1  | 45   | 3    | 0.13 |
| Pput_2061 | 148547283 | catalase/peroxidase HPI                                            | 37 | 38 | 32 | 3089 | 36.4 | 7.81 |
| Pput_2065 | 148547287 | phosphatidylserine synthase                                        | 4  | 5  | 7  | 212  | 12.1 | 0.68 |
| Pput_2067 | 148547289 | hypothetical protein Pput_2067                                     | 2  | 3  | 3  | 126  | 6.3  | 0.31 |
| Pput_2079 | 148547301 | GAF sensor hybrid histidine kinase                                 | 1  | 1  | 1  | 61   | 1.2  | 0.05 |
| Pput_2080 | 148547302 | NUDIX hydrolase                                                    | 2  | 1  | 2  | 70   | 5.3  | 0.36 |
| Pput_2081 | 148547303 | GntR family transcriptional regulator                              | 4  | 5  | 7  | 309  | 21.6 | 1.78 |
| Pput_2082 | 148547304 | carboxymuconolactone decarboxylase                                 | 1  | 2  | 2  | 97   | 17.8 | 0.59 |
| Pput_2084 | 148547306 | aldehyde dehydrogenase                                             | 1  | 1  | 1  | 33   | 2.2  | 0.07 |
| Pput_2086 | 148547308 | hypothetical protein Pput_2086                                     | 1  | 1  | 1  | 31   | 3    | 0.18 |
| Pput_2087 | 148547309 | luciferase family protein                                          | 2  | 1  | 2  | 87   | 3.8  | 0.2  |
| Pput_2104 | 148547325 | 3-demethylubiquinone-9 3-methyltransferase                         | 3  | 2  | 2  | 197  | 13.2 | 1.2  |
| Pput_2110 | 148547331 | gluconate 2-dehydrogenase acceptor subunit                         | 4  | 4  | 6  | 332  | 10.1 | 1.04 |
| Pput_2111 | 148547332 | aldehyde oxidase and xanthine dehydrogenase, molybdopterin binding | 4  | 18 | 12 | 660  | 14.4 | 1.61 |
| Pput_2112 | 148547333 | 2Fe-2S iron-sulfur cluster binding domain-containing protein       | 4  | 1  | 1  | 177  | 7.9  | 0.96 |
| Pput_2113 | 148547334 | hypothetical protein Pput_2113                                     | 2  | 2  | 2  | 123  | 3.6  | 0.14 |
| Pput_2115 | 148547336 | hypothetical protein Pput_2115                                     | 1  | 1  | 1  | 31   | 0.8  | 0.03 |
| Pput_2130 | 148547351 | ImcF domain-containing protein                                     | 2  | 1  | 1  | 58   | 1.2  | 0.06 |
| Pput_2140 | 148547361 | dihydrodipicolinate synthase                                       | 1  | 1  | 1  | 26   | 3.5  | 0.12 |
| Pput_2141 | 148547362 | acylamide amidohydrolase                                           | 1  | 2  | 1  | 75   | 3.5  | 0.2  |
| Pput_2144 | 148547365 | response regulator receiver/ANTAR domain-containing protein        | 1  | 1  | 1  | 30   | 5.7  | 0.18 |
| Pput_2150 | 148547371 | magnesium-translocating P-type ATPase                              | 10 | 1  | 2  | 320  | 1    | 0.4  |
| Pput_2155 | 148547376 | UspA domain-containing protein                                     | 3  | 4  | 6  | 163  | 19.6 | 1.37 |
| Pput_2159 | 148547380 | hydratase/decarboxylase                                            | 3  | 1  | 1  | 115  | 3.8  | 0.42 |
| Pput_2160 | 148547381 | XRE family transcriptional regulator                               | 1  | 1  | 1  | 31   | 2.6  | 0.13 |
| Pput_2164 | 148547385 | phosphate ABC transporter, periplasmic phosphate-binding protein   | 4  | 5  | 7  | 381  | 15.5 | 1.43 |
| Pput_2170 | 148547391 | hypothetical protein Pput_2170                                     | 1  | 1  | 1  | 58   | 4.1  | 0.09 |
| Pput_2173 | 148547394 | two component LuxR family transcriptional regulator                | 1  | 2  | 2  | 67   | 8.6  | 0.33 |
| Pput_2181 | 148547402 | malate/L-lactate dehydrogenase                                     | 4  | 1  | 4  | 151  | 2.6  | 0.4  |
| Pput_2182 | 148547403 | aromatic amino acid aminotransferase                               | 2  | 5  | 5  | 467  | 16.1 | 0.9  |

|           |           |                                                                        |    |    |    |      |      |       |
|-----------|-----------|------------------------------------------------------------------------|----|----|----|------|------|-------|
| Pput_2185 | 148547406 | redoxin domain-containing protein                                      | 2  | 1  | 1  | 121  | 6.6  | 0.44  |
| Pput_2186 | 148547407 | RND family efflux transporter MFP subunit                              | 2  | 1  | 1  | 81   | 2.3  | 0.16  |
| Pput_2189 | 148547410 | RND efflux system outer membrane lipoprotein                           | 1  | 1  | 1  | 28   | 1.4  | 0.07  |
| Pput_2193 | 148547414 | phosphoglucosyltransferase                                             | 3  | 6  | 5  | 294  | 11.2 | 0.57  |
| Pput_2196 | 148547417 | TonB-dependent siderophore receptor                                    | 1  | 1  | 1  | 25   | 1.2  | 0.04  |
| Pput_2205 | 148547426 | Pyrrolo-quinoline quinone                                              | 20 | 8  | 9  | 2710 | 9.2  | 3.96  |
| Pput_2211 | 148547432 | SCP-like extracellular protein                                         | 1  | 1  | 1  | 38   | 3.5  | 0.12  |
| Pput_2216 | 148547437 | substrate-binding region of ABC-type glycine betaine transport system  | 2  | 4  | 4  | 232  | 16   | 0.68  |
| Pput_2219 | 148547440 | anti-FecI sigma factor, FecR                                           | 2  | 1  | 2  | 83   | 3.6  | 0.2   |
| Pput_2220 | 148547441 | acyl-CoA dehydrogenase domain-containing protein                       | 2  | 3  | 4  | 158  | 5.1  | 0.3   |
| Pput_2221 | 148547442 | acyl-CoA synthetase                                                    | 2  | 4  | 4  | 156  | 5.4  | 0.47  |
| Pput_2223 | 148547444 | response regulator receiver protein                                    | 1  | 1  | 1  | 29   | 7.1  | 0.17  |
| Pput_2224 | 148547445 | MarR family transcriptional regulator                                  | 1  | 1  | 1  | 29   | 5.7  | 0.22  |
| Pput_2227 | 148547448 | short-chain dehydrogenase/reductase SDR                                | 2  | 8  | 7  | 408  | 31.5 | 2.28  |
| Pput_2228 | 148547449 | PAS/PAC sensor hybrid histidine kinase                                 | 1  | 1  | 1  | 31   | 1.2  | 0.05  |
| Pput_2229 | 148547450 | PAS/PAC sensor hybrid histidine kinase                                 | 1  | 1  | 1  | 74   | 2.2  | 0.06  |
| Pput_2234 | 148547455 | hydroxymethylglutaryl-CoA lyase                                        | 3  | 4  | 5  | 256  | 13.4 | 0.81  |
| Pput_2236 | 148547457 | AraC family transcriptional regulator                                  | 1  | 1  | 1  | 58   | 3.8  | 0.11  |
| Pput_2240 | 148547461 | ornithine cyclodeaminase                                               | 1  | 1  | 1  | 30   | 2.3  | 0.1   |
| Pput_2243 | 148547464 | hypothetical protein Pput_2243                                         | 3  | 4  | 4  | 234  | 11.3 | 0.92  |
| Pput_2245 | 148547466 | aliphatic sulfonate ABC transporter periplasmic ligand-binding protein | 1  | 1  | 1  | 46   | 4    | 0.11  |
| Pput_2247 | 148547468 | TetR family transcriptional regulator                                  | 2  | 3  | 3  | 98   | 11   | 0.81  |
| Pput_2248 | 148547469 | helix-turn-helix domain-containing protein                             | 1  | 1  | 1  | 35   | 3.3  | 0.1   |
| Pput_2257 | 148547478 | hypothetical protein Pput_2257                                         | 2  | 1  | 2  | 73   | 1.8  | 0.14  |
| Pput_2258 | 148547479 | hypothetical protein Pput_2258                                         | 1  | 1  | 1  | 31   | 3.4  | 0.12  |
| Pput_2264 | 148547485 | branched-chain amino acid aminotransferase                             | 8  | 12 | 7  | 1404 | 22.7 | 5.75  |
| Pput_2268 | 148547489 | cobalamin biosynthesis protein CobW                                    | 2  | 2  | 2  | 133  | 7    | 0.4   |
| Pput_2270 | 148547491 | magnesium chelatase                                                    | 1  | 1  | 1  | 26   | 3.3  | 0.1   |
| Pput_2279 | 148547500 | acyl-CoA dehydrogenase domain-containing protein                       | 1  | 9  | 9  | 242  | 25.3 | 1.16  |
| Pput_2280 | 148547501 | enoyl-CoA hydratase/isomerase                                          | 2  | 1  | 1  | 130  | 3.6  | 0.18  |
| Pput_2287 | 148547508 | response regulator receiver protein                                    | 2  | 1  | 1  | 86   | 6.8  | 0.38  |
| Pput_2288 | 148547509 | type II secretion system protein E                                     | 1  | 1  | 1  | 31   | 2    | 0.06  |
| Pput_2304 | 148547525 | FAD dependent oxidoreductase                                           | 1  | 1  | 1  | 33   | 2.1  | 0.08  |
| Pput_2306 | 148547527 | aldehyde dehydrogenase                                                 | 1  | 1  | 1  | 27   | 2.4  | 0.07  |
| Pput_2310 | 148547531 | hypothetical protein Pput_2310                                         | 1  | 1  | 1  | 65   | 2.9  | 0.09  |
| Pput_2311 | 148547532 | acyl-CoA synthetase                                                    | 1  | 2  | 2  | 88   | 4.1  | 0.12  |
| Pput_2313 | 148547534 | hydrophobe/amphiphile efflux-1 (HAE1) family protein                   | 1  | 1  | 1  | 25   | 2.6  | 0.03  |
| Pput_2315 | 148547536 | two component transcriptional regulator                                | 2  | 1  | 1  | 53   | 3.4  | 0.28  |
| Pput_2318 | 148547539 | threonine dehydratase                                                  | 1  | 1  | 1  | 33   | 2.7  | 0.07  |
| Pput_2321 | 148547542 | aldehyde dehydrogenase                                                 | 3  | 7  | 6  | 287  | 13.2 | 0.64  |
| Pput_2323 | 148547544 | hypothetical protein Pput_2323                                         | 2  | 1  | 2  | 58   | 2.2  | 0.18  |
| Pput_2328 | 148547549 | diguanylate phosphodiesterase                                          | 1  | 2  | 2  | 76   | 4.2  | 0.13  |
| Pput_2329 | 148547550 | 4-hydroxyphenylpyruvate dioxygenase                                    | 3  | 21 | 16 | 645  | 49.7 | 4.36  |
| Pput_2331 | 148547552 | ThiJ/Pfpl domain-containing protein                                    | 3  | 2  | 2  | 105  | 9.6  | 0.62  |
| Pput_2334 | 148547555 | TPR repeat-containing protein                                          | 2  | 3  | 3  | 116  | 8.5  | 0.35  |
| Pput_2335 | 148547556 | RND efflux system outer membrane lipoprotein                           | 3  | 4  | 4  | 230  | 12.3 | 0.47  |
| Pput_2341 | 148547562 | integral membrane sensor signal transduction histidine kinase          | 2  | 3  | 6  | 244  | 7    | 0.53  |
| Pput_2347 | 148547568 | LacI family transcriptional regulator                                  | 2  | 3  | 4  | 116  | 10   | 0.44  |
| Pput_2348 | 148547569 | methyl-accepting chemotaxis sensory transducer                         | 2  | 1  | 1  | 89   | 2    | 0.16  |
| Pput_2349 | 148547570 | Hpt sensor hybrid histidine kinase                                     | 1  | 1  | 1  | 39   | 1    | 0.03  |
| Pput_2356 | 148547577 | GCN5-related N-acetyltransferase                                       | 1  | 1  | 1  | 39   | 6.9  | 0.21  |
| Pput_2358 | 148547579 | alpha/beta hydrolase fold                                              | 6  | 2  | 4  | 255  | 6.9  | 0.98  |
| Pput_2359 | 148547580 | pirin domain-containing protein                                        | 2  | 2  | 3  | 113  | 6.4  | 0.37  |
| Pput_2378 | 148547599 | regulatory protein, LacI                                               | 2  | 2  | 2  | 77   | 6.2  | 0.31  |
| Pput_2383 | 148547604 | deoxyribonuclease I                                                    | 1  | 1  | 1  | 27   | 2.2  | 0.1   |
| Pput_2385 | 148547606 | surface antigen (D15)                                                  | 3  | 2  | 2  | 164  | 3.2  | 0.17  |
| Pput_2388 | 148547609 | aldo/keto reductase                                                    | 1  | 2  | 2  | 102  | 6.6  | 0.21  |
| Pput_2389 | 148547610 | LysR family transcriptional regulator                                  | 1  | 1  | 1  | 49   | 3.5  | 0.12  |
| Pput_2392 | 148547613 | LysR family transcriptional regulator                                  | 1  | 1  | 1  | 55   | 3.4  | 0.11  |
| Pput_2393 | 148547614 | acetolactate synthase                                                  | 1  | 12 | 9  | 470  | 20.8 | 0.93  |
| Pput_2396 | 148547617 | AsnC family transcriptional regulator                                  | 1  | 1  | 1  | 49   | 10.3 | 0.24  |
| Pput_2397 | 148547618 | hypothetical protein Pput_2397                                         | 2  | 1  | 1  | 74   | 1.1  | 0.06  |
| Pput_2399 | 148547620 | MarR family transcriptional regulator                                  | 1  | 1  | 1  | 30   | 5.1  | 0.22  |
| Pput_2416 | 148547637 | sodium:dicarboxylate symporter                                         | 1  | 1  | 1  | 33   | 2.1  | 0.08  |
| Pput_2419 | 148547639 | TonB-dependent siderophore receptor                                    | 1  | 1  | 1  | 33   | 1.4  | 0.05  |
| Pput_2425 | 148547645 | TetR family transcriptional regulator                                  | 3  | 2  | 2  | 179  | 11.8 | 0.7   |
| Pput_2443 | 148547662 | hypothetical protein Pput_2443                                         | 2  | 4  | 4  | 206  | 29.2 | 2.02  |
| Pput_2444 | 148547663 | extracellular solute-binding protein                                   | 1  | 1  | 1  | 32   | 3    | 0.11  |
| Pput_2449 | 148547667 | sodium/hydrogen exchanger                                              | 1  | 1  | 1  | 28   | 5.6  | 0.09  |
| Pput_2450 | 148547668 | phosphoribosyltransferase                                              | 4  | 2  | 2  | 154  | 10   | 1.14  |
| Pput_2455 | 148547672 | hypothetical protein Pput_2455                                         | 1  | 1  | 1  | 31   | 14.3 | 0.41  |
| Pput_2456 | 148547673 | transport-associated                                                   | 4  | 6  | 7  | 305  | 27.4 | 2.14  |
| Pput_2457 | 148547674 | ATP-dependent metalloprotease FtsH                                     | 2  | 1  | 1  | 84   | 1.5  | 0.12  |
| Pput_2459 | 148547676 | putative phosphoketolase                                               | 1  | 1  | 1  | 28   | 1.1  | 0.04  |
| Pput_2460 | 148547677 | heat shock protein Hsp20                                               | 5  | 14 | 14 | 916  | 50   | 15.81 |
| Pput_2463 | 148547680 | GCN5-related N-acetyltransferase                                       | 5  | 2  | 2  | 267  | 17.5 | 1.32  |
| Pput_2464 | 148547681 | erythromycin esterase                                                  | 1  | 3  | 3  | 71   | 6.8  | 0.23  |
| Pput_2467 | 148547684 | beta-lactamase domain-containing protein                               | 2  | 8  | 7  | 347  | 17.4 | 0.92  |
| Pput_2468 | 148547685 | UspA domain-containing protein                                         | 6  | 6  | 4  | 431  | 13.3 | 1.6   |
| Pput_2469 | 148547686 | GCN5-related N-acetyltransferase                                       | 3  | 4  | 3  | 199  | 15.9 | 1.54  |
| Pput_2470 | 148547687 | UspA domain-containing protein                                         | 5  | 11 | 9  | 632  | 22.4 | 3.64  |
| Pput_2471 | 148547688 | CRP/FNR family transcriptional regulator                               | 3  | 1  | 1  | 93   | 2.9  | 0.36  |
| Pput_2473 | 148547690 | PaaX family transcriptional regulator                                  | 2  | 4  | 5  | 121  | 11.1 | 0.92  |
| Pput_2474 | 148547691 | phenylacetic acid degradation protein PaaY                             | 1  | 1  | 1  | 43   | 5.5  | 0.18  |
| Pput_2476 | 148547693 | enoyl-CoA hydratase                                                    | 3  | 1  | 2  | 159  | 5.7  | 0.54  |
| Pput_2477 | 148547694 | 3-hydroxy-acyl-CoA dehydrogenase                                       | 1  | 2  | 2  | 27   | 2.2  | 0.14  |
| Pput_2479 | 148547696 | beta-ketoacyl-CoA thiolase                                             | 2  | 12 | 9  | 368  | 24.6 | 1.69  |
| Pput_2483 | 148547700 | phenylacetate-CoA oxygenase, PaaI subunit                              | 1  | 1  | 1  | 50   | 4    | 0.13  |
| Pput_2488 | 148547705 | outer membrane porin                                                   | 1  | 3  | 3  | 110  | 10   | 0.27  |

|           |           |                                                                  |   |    |    |     |      |      |
|-----------|-----------|------------------------------------------------------------------|---|----|----|-----|------|------|
| Pput_2489 | 148547706 | bifunctional aldehyde dehydrogenase/enoyl-CoA hydratase          | 4 | 10 | 10 | 773 | 12.9 | 1.32 |
| Pput_2491 | 148547708 | hypothetical protein Pput_2491                                   | 1 | 1  | 1  | 28  | 15.9 | 0.57 |
| Pput_2493 | 148547710 | peptidase S14, ClpP                                              | 3 | 2  | 3  | 154 | 8.7  | 0.79 |
| Pput_2513 | 148547730 | aldo/keto reductase                                              | 2 | 3  | 4  | 197 | 11.6 | 0.63 |
| Pput_2524 | 148547741 | YheO domain-containing protein                                   | 1 | 2  | 2  | 72  | 11.9 | 0.36 |
| Pput_2527 | 148547744 | N-isopropylammelide isopropylaminohydrolase                      | 4 | 3  | 3  | 302 | 7    | 0.77 |
| Pput_2530 | 148547747 | TenA family transcription regulator                              | 1 | 2  | 2  | 57  | 7.7  | 0.33 |
| Pput_2531 | 148547748 | TenA family transcription regulator                              | 3 | 3  | 3  | 263 | 15.8 | 0.92 |
| Pput_2540 | 148547757 | major facilitator transporter                                    | 1 | 1  | 1  | 25  | 2.5  | 0.08 |
| Pput_2541 | 148547758 | FAD-dependent pyridine nucleotide-disulphide oxidoreductase      | 2 | 4  | 6  | 167 | 11.5 | 0.44 |
| Pput_2542 | 148547759 | aldo/keto reductase                                              | 3 | 10 | 11 | 515 | 31.3 | 2.7  |
| Pput_2544 | 148547761 | luciferase family protein                                        | 2 | 1  | 1  | 79  | 2.5  | 0.22 |
| Pput_2545 | 148547762 | LysR family transcriptional regulator                            | 2 | 1  | 2  | 98  | 3.3  | 0.22 |
| Pput_2553 | 148547770 | benzoate 1,2-dioxygenase                                         | 1 | 1  | 1  | 26  | 3.1  | 0.22 |
| Pput_2554 | 148547771 | Rieske (2Fe-2S) domain-containing protein                        | 1 | 1  | 1  | 29  | 2    | 0.07 |
| Pput_2558 | 148547775 | UspA domain-containing protein                                   | 4 | 6  | 5  | 244 | 12.8 | 1.94 |
| Pput_2560 | 148547777 | hypothetical protein Pput_2560                                   | 4 | 2  | 2  | 355 | 12.7 | 1.34 |
| Pput_2569 | 148547786 | hypothetical protein Pput_2569                                   | 3 | 9  | 7  | 340 | 21.3 | 2.66 |
| Pput_2570 | 148547787 | L-serine dehydratase 1                                           | 1 | 1  | 1  | 37  | 2.2  | 0.08 |
| Pput_2573 | 148547790 | WecB/TagA/CpsF family glycosyl transferase                       | 1 | 1  | 1  | 35  | 4    | 0.13 |
| Pput_2574 | 148547791 | glycosyl transferase family protein                              | 4 | 1  | 2  | 144 | 2.3  | 0.36 |
| Pput_2575 | 148547792 | glycosyl transferase, group 1                                    | 4 | 4  | 5  | 189 | 9    | 0.6  |
| Pput_2583 | 148547800 | polysaccharide biosynthesis protein                              | 1 | 1  | 1  | 45  | 2    | 0.07 |
| Pput_2585 | 148547802 | hypothetical protein Pput_2585                                   | 1 | 1  | 1  | 28  | 1    | 0.04 |
| Pput_2586 | 148547803 | UDP-glucose 4-epimerase                                          | 2 | 1  | 1  | 59  | 2.8  | 0.22 |
| Pput_2588 | 148547805 | lipopolysaccharide biosynthesis protein                          | 1 | 1  | 1  | 27  | 1.9  | 0.06 |
| Pput_2589 | 148547806 | hypothetical protein Pput_2589                                   | 3 | 6  | 7  | 387 | 18.6 | 1.3  |
| Pput_2591 | 148547808 | XRE family transcriptional regulator                             | 2 | 1  | 1  | 80  | 6.7  | 0.38 |
| Pput_2594 | 148547811 | 3-oxoacid CoA-transferase, A subunit                             | 1 | 1  | 1  | 27  | 6.5  | 0.15 |
| Pput_2605 | 148547822 | putative succinate dehydrogenase                                 | 3 | 1  | 1  | 103 | 2.3  | 0.18 |
| Pput_2606 | 148547823 | short-chain dehydrogenase/reductase SDR                          | 1 | 1  | 1  | 24  | 3.6  | 0.13 |
| Pput_2608 | 148547825 | regulatory protein, IclR                                         | 1 | 1  | 1  | 33  | 4.3  | 0.13 |
| Pput_2611 | 148547828 | amidohydrolase                                                   | 1 | 1  | 1  | 27  | 3.3  | 0.09 |
| Pput_2614 | 148547831 | hypothetical protein Pput_2614                                   | 1 | 3  | 3  | 62  | 13.6 | 0.57 |
| Pput_2617 | 148547834 | hypothetical protein Pput_2617                                   | 1 | 1  | 1  | 25  | 4.1  | 0.18 |
| Pput_2627 | 148547843 | ATPase                                                           | 3 | 1  | 1  | 98  | 0.9  | 0.12 |
| Pput_2634 | 148547850 | hypothetical protein Pput_2634                                   | 2 | 1  | 1  | 140 | 8.7  | 0.42 |
| Pput_2636 | 148547852 | excinuclease ABC, A subunit                                      | 1 | 1  | 1  | 38  | 1.8  | 0.04 |
| Pput_2646 | 148547862 | extracellular solute-binding protein                             | 3 | 1  | 3  | 87  | 0.8  | 0.15 |
| Pput_2652 | 148547868 | ecotin                                                           | 1 | 1  | 1  | 38  | 7.5  | 0.22 |
| Pput_2653 | 148547869 | acetoacetyl-CoA synthetase                                       | 2 | 2  | 2  | 187 | 3.2  | 0.2  |
| Pput_2659 | 148547875 | metallophosphoesterase                                           | 2 | 1  | 1  | 153 | 5    | 0.28 |
| Pput_2660 | 148547876 | Nitrilase/cyanide hydratase and apolipoprotein N-acyltransferase | 1 | 2  | 2  | 49  | 8.5  | 0.31 |
| Pput_2667 | 148547883 | hypothetical protein Pput_2667                                   | 1 | 1  | 1  | 29  | 2.4  | 0.11 |
| Pput_2673 | 148547889 | DSBA oxidoreductase                                              | 1 | 1  | 1  | 33  | 9.2  | 0.16 |
| Pput_2698 | 148547914 | short-chain dehydrogenase/reductase SDR                          | 2 | 1  | 1  | 93  | 4.3  | 0.28 |
| Pput_2703 | 148547919 | short-chain dehydrogenase/reductase SDR                          | 3 | 4  | 5  | 375 | 17   | 1.41 |
| Pput_2710 | 148547926 | alcohol dehydrogenase                                            | 2 | 3  | 3  | 166 | 11.7 | 0.59 |
| Pput_2711 | 148547927 | LysR family transcriptional regulator                            | 2 | 1  | 1  | 59  | 3.4  | 0.22 |
| Pput_2713 | 148547929 | uncharacterized peroxidase-related enzyme                        | 2 | 3  | 2  | 144 | 15.1 | 0.96 |
| Pput_2722 | 148547938 | hypothetical protein Pput_2722                                   | 1 | 1  | 1  | 46  | 5.1  | 0.2  |
| Pput_2723 | 148547939 | helix-turn-helix domain-containing protein                       | 3 | 1  | 1  | 97  | 2.9  | 0.33 |
| Pput_2725 | 148547941 | meta-pathway phenol degradation-like protein                     | 4 | 2  | 1  | 113 | 5.2  | 0.48 |
| Pput_2733 | 148547949 | GntR family transcriptional regulator                            | 1 | 1  | 1  | 35  | 2    | 0.07 |
| Pput_2734 | 148547950 | integral membrane sensor signal transduction histidine kinase    | 1 | 1  | 1  | 28  | 1.2  | 0.08 |
| Pput_2735 | 148547951 | two component transcriptional regulator                          | 1 | 1  | 1  | 53  | 5    | 0.16 |
| Pput_2746 | 148547962 | hypothetical protein Pput_2746                                   | 1 | 1  | 1  | 28  | 4.5  | 0.15 |
| Pput_2751 | 148547967 | diaminopimelate epimerase                                        | 1 | 4  | 4  | 107 | 17.5 | 0.6  |
| Pput_2758 | 148547973 | putative glutathione S-transferase YghU                          | 3 | 3  | 3  | 337 | 18.6 | 0.93 |
| Pput_2760 | 148547974 | amidase                                                          | 2 | 1  | 1  | 128 | 1.9  | 0.12 |
| Pput_2762 | 148547976 | pyridoxal-5~-phosphate-dependent enzyme, beta subunit            | 2 | 2  | 3  | 92  | 6.6  | 0.5  |
| Pput_2763 | 148547977 | carboxynorspermidine decarboxylase                               | 2 | 1  | 1  | 114 | 2.7  | 0.18 |
| Pput_2764 | 148547978 | saccharopine dehydrogenase                                       | 1 | 2  | 2  | 78  | 5.3  | 0.17 |
| Pput_2765 | 148547979 | methyltransferase type 12                                        | 3 | 5  | 5  | 285 | 12.1 | 1.17 |
| Pput_2767 | 148547981 | malate:quinone oxidoreductase                                    | 1 | 2  | 2  | 103 | 5.4  | 0.13 |
| Pput_2774 | 148547988 | trehalose synthase                                               | 1 | 3  | 2  | 104 | 3.1  | 0.1  |
| Pput_2775 | 148547989 | riboflavin synthase subunit alpha                                | 2 | 2  | 2  | 133 | 9.6  | 0.53 |
| Pput_2776 | 148547990 | hypothetical protein Pput_2776                                   | 1 | 1  | 1  | 28  | 3.9  | 0.15 |
| Pput_2777 | 148547991 | proline/glycine betaine transporter                              | 1 | 1  | 1  | 31  | 1.8  | 0.07 |
| Pput_2778 | 148547992 | delta-aminolevulinic acid dehydratase                            | 5 | 4  | 6  | 411 | 7.7  | 1.18 |
| Pput_2783 | 148547997 | DNA-binding transcriptional regulator CsiR                       | 1 | 3  | 3  | 89  | 13.2 | 0.42 |
| Pput_2784 | 148547998 | two component transcriptional regulator                          | 1 | 1  | 1  | 38  | 4.4  | 0.15 |
| Pput_2786 | 148548000 | cysteinyI-tRNA synthetase                                        | 3 | 11 | 11 | 412 | 22.2 | 1.44 |
| Pput_2787 | 148548001 | glutaminyI-tRNA synthetase                                       | 3 | 10 | 10 | 277 | 15.9 | 0.86 |
| Pput_2788 | 148548002 | peptidyl-prolyl cis-trans isomerase, cyclophilin type            | 3 | 1  | 2  | 138 | 6.1  | 0.54 |
| Pput_2789 | 148548003 | UDP-2,3-diacetylglucosamine hydrolase                            | 1 | 1  | 1  | 47  | 3.8  | 0.14 |
| Pput_2799 | 148548013 | GCN5-related N-acetyltransferase                                 | 1 | 2  | 2  | 49  | 8.8  | 0.33 |
| Pput_2800 | 148548014 | exonuclease III                                                  | 2 | 3  | 5  | 101 | 12.2 | 0.67 |
| Pput_2801 | 148548015 | putative transmembrane anti-sigma factor                         | 2 | 1  | 1  | 52  | 6    | 0.28 |
| Pput_2803 | 148548017 | catalase domain-containing protein                               | 1 | 1  | 1  | 54  | 5.1  | 0.1  |
| Pput_2806 | 148548020 | XRE family transcriptional regulator                             | 1 | 1  | 1  | 75  | 6.1  | 0.19 |
| Pput_2808 | 148548022 | DSBA oxidoreductase                                              | 1 | 3  | 2  | 82  | 8.3  | 0.61 |
| Pput_2813 | 148548027 | beta-lactamase                                                   | 1 | 1  | 1  | 36  | 2.6  | 0.09 |
| Pput_2820 | 148548034 | NADH:flavin oxidoreductase/NADH oxidase                          | 1 | 1  | 1  | 29  | 1.7  | 0.05 |
| Pput_2822 | 148548036 | FAD-dependent pyridine nucleotide-disulphide oxidoreductase      | 1 | 1  | 1  | 37  | 2.8  | 0.09 |
| Pput_2823 | 148548037 | azoreductase                                                     | 4 | 6  | 5  | 429 | 32   | 2.29 |
| Pput_2828 | 148548042 | methyl-accepting chemotaxis sensory transducer                   | 2 | 1  | 2  | 64  | 1.8  | 0.12 |
| Pput_2836 | 148548050 | hypothetical protein Pput_2836                                   | 1 | 1  | 1  | 33  | 2.8  | 0.08 |
| Pput_2838 | 148548052 | protein of unknown function DUF899, thioredoxin family protein   | 4 | 3  | 5  | 277 | 14   | 1.87 |



|           |           |                                                                                         |    |     |    |       |      |        |
|-----------|-----------|-----------------------------------------------------------------------------------------|----|-----|----|-------|------|--------|
| Pput_2840 | 148548054 | urease accessory protein UreG                                                           | 1  | 1   | 1  | 34    | 5.8  | 0.17   |
| Pput_2843 | 148548057 | urease accessory protein UreE                                                           | 2  | 3   | 3  | 122   | 19.8 | 0.99   |
| Pput_2844 | 148548058 | urease subunit alpha                                                                    | 3  | 8   | 5  | 296   | 10.6 | 0.8    |
| Pput_2856 | 148548070 | LysR family transcriptional regulator                                                   | 1  | 1   | 1  | 29    | 3.1  | 0.1    |
| Pput_2862 | 148548076 | alcohol dehydrogenase                                                                   | 9  | 2   | 3  | 351   | 5    | 1.12   |
| Pput_2863 | 148548077 | LysR family transcriptional regulator                                                   | 2  | 2   | 5  | 113   | 7.9  | 0.78   |
| Pput_2866 | 148548079 | regulatory protein, IclR                                                                | 3  | 2   | 2  | 104   | 3.5  | 0.42   |
| Pput_2867 | 148548080 | RND family efflux transporter MFP subunit                                               | 4  | 12  | 10 | 577   | 24.9 | 2.01   |
| Pput_2868 | 148548081 | hydrophobe/amphiphile efflux-1 (HAE1) family protein                                    | 14 | 4   | 5  | 1577  | 4.3  | 1.22   |
| Pput_2869 | 148548082 | RND efflux system outer membrane lipoprotein                                            | 2  | 4   | 5  | 151   | 8.3  | 0.46   |
| Pput_2870 | 148548083 | hypothetical protein Pput_2870                                                          | 1  | 1   | 1  | 28    | 12.1 | 0.61   |
| Pput_2871 | 148548084 | response regulator receiver protein                                                     | 2  | 2   | 2  | 132   | 9.7  | 0.52   |
| Pput_2873 | 148548086 | 4-hydroxy-2-ketovalerate aldolase                                                       | 35 | 56  | 19 | 3947  | 31.5 | 23.08  |
| Pput_2874 | 148548087 | acetaldehyde dehydrogenase                                                              | 29 | 24  | 18 | 5253  | 41.1 | 39.01  |
| Pput_2875 | 148548088 | 4-oxalocrotonate decarboxylase                                                          | 12 | 67  | 20 | 4634  | 68.7 | 55.06  |
| Pput_2876 | 148548089 | glyoxalase/bleomycin resistance protein/dioxygenase                                     | 22 | 15  | 14 | 4235  | 27.5 | 15.46  |
| Pput_2877 | 148548090 | 2,3-dihydroxy-2,3-dihydrophenylpropionate dehydrogenase                                 | 11 | 53  | 27 | 3422  | 67.6 | 88.91  |
| Pput_2878 | 148548091 | FAD-dependent pyridine nucleotide-disulphide oxidoreductase                             | 22 | 49  | 28 | 5416  | 62.9 | 42.05  |
| Pput_2879 | 148548092 | Rieske (2Fe-2S) domain-containing protein                                               | 2  | 3   | 2  | 91    | 16.8 | 1.5    |
| Pput_2880 | 148548093 | toluene dioxygenase                                                                     | 25 | 105 | 20 | 10510 | 51.9 | 262.33 |
| Pput_2881 | 148548094 | ring hydroxylating dioxygenase, alpha subunit                                           | 73 | 99  | 30 | 14848 | 60.7 | 69.67  |
| Pput_2882 | 148548095 | alpha/beta hydrolase fold                                                               | 13 | 53  | 17 | 3020  | 47.8 | 44.82  |
| Pput_2883 | 148548096 | membrane protein involved in aromatic hydrocarbon degradation                           | 2  | 3   | 4  | 102   | 7.9  | 0.41   |
| Pput_2887 | 148548099 | enoyl-CoA hydratase/isomerase                                                           | 1  | 2   | 2  | 43    | 6.2  | 0.2    |
| Pput_2888 | 148548100 | 4-hydroxy-2-ketovalerate aldolase                                                       | 30 | 26  | 13 | 3448  | 24.6 | 16.35  |
| Pput_2889 | 148548101 | acetaldehyde dehydrogenase                                                              | 10 | 31  | 16 | 3102  | 35   | 26.66  |
| Pput_2890 | 148548102 | 4-oxalocrotonate decarboxylase                                                          | 3  | 10  | 9  | 835   | 33.2 | 4.51   |
| Pput_2891 | 148548103 | alpha/beta hydrolase fold                                                               | 21 | 72  | 18 | 4052  | 49.3 | 20.51  |
| Pput_2893 | 148548105 | class II aldolase/adducin family protein                                                | 4  | 12  | 10 | 1020  | 40.7 | 6.58   |
| Pput_2895 | 148548107 | short-chain dehydrogenase/reductase SDR                                                 | 13 | 23  | 11 | 2589  | 40.2 | 23.41  |
| Pput_2896 | 148548108 | glyoxalase/bleomycin resistance protein/dioxygenase                                     | 7  | 15  | 13 | 1063  | 30.8 | 6.66   |
| Pput_2897 | 148548109 | aromatic-ring-hydroxylating dioxygenase, beta subunit                                   | 17 | 17  | 11 | 2111  | 48.9 | 24.74  |
| Pput_2898 | 148548110 | ring hydroxylating dioxygenase, alpha subunit                                           | 5  | 17  | 13 | 1360  | 29.7 | 4.46   |
| Pput_2899 | 148548111 | FAD-dependent pyridine nucleotide-disulphide oxidoreductase                             | 2  | 19  | 14 | 828   | 27.4 | 4.37   |
| Pput_2900 | 148548112 | propionyl-CoA synthetase                                                                | 7  | 23  | 22 | 1070  | 25.3 | 3.81   |
| Pput_2901 | 148548113 | membrane protein involved in aromatic hydrocarbon degradation                           | 7  | 14  | 10 | 1109  | 20   | 2.38   |
| Pput_2902 | 148548114 | oxidoreductase FAD-binding subunit                                                      | 6  | 15  | 12 | 722   | 29.8 | 3.56   |
| Pput_2903 | 148548115 | fatty acid desaturase                                                                   | 19 | 5   | 7  | 1505  | 12   | 3.15   |
| Pput_2904 | 148548116 | aldehyde dehydrogenase                                                                  | 26 | 41  | 24 | 3430  | 45.1 | 14.03  |
| Pput_2905 | 148548117 | short-chain dehydrogenase/reductase SDR                                                 | 9  | 8   | 9  | 1004  | 32.9 | 6.44   |
| Pput_2906 | 148548118 | dienelactone hydrolase                                                                  | 3  | 2   | 3  | 101   | 8.2  | 0.66   |
| Pput_2908 | 148548120 | TetR family transcriptional regulator                                                   | 2  | 3   | 3  | 115   | 14.6 | 0.73   |
| Pput_2917 | 148548128 | hypothetical protein Pput_2917                                                          | 1  | 1   | 1  | 26    | 1.2  | 0.08   |
| Pput_2945 | 148548155 | hypothetical protein Pput_2945                                                          | 1  | 1   | 1  | 30    | 1.9  | 0.13   |
| Pput_2948 | 148548158 | Type IV secretory pathway VirB4 components-like protein                                 | 1  | 1   | 1  | 26    | 1.4  | 0.04   |
| Pput_2968 | 148548178 | RND efflux transporter                                                                  | 2  | 1   | 2  | 53    | 0.6  | 0.08   |
| Pput_2969 | 148548179 | putative sigma E regulatory protein, MucB/RseB                                          | 1  | 1   | 1  | 26    | 2.9  | 0.12   |
| Pput_2988 | 148548198 | long-chain acyl-CoA synthetase (AMP-forming)-like protein                               | 1  | 1   | 1  | 32    | 3.2  | 0.09   |
| Pput_2994 | 148548204 | ABC transporter related                                                                 | 1  | 1   | 1  | 32    | 2    | 0.07   |
| Pput_2997 | 148548207 | hypothetical protein Pput_2997                                                          | 1  | 1   | 1  | 29    | 7.8  | 0.29   |
| Pput_3002 | 148548212 | ABC-type branched-chain amino acid transport systems periplasmic component-like protein | 13 | 1   | 1  | 413   | 2.8  | 0.91   |
| Pput_3003 | 148548213 | inner-membrane translocator                                                             | 3  | 1   | 1  | 89    | 4.2  | 0.3    |
| Pput_3007 | 148548217 | hypothetical protein Pput_3007                                                          | 2  | 1   | 2  | 68    | 1.9  | 0.14   |
| Pput_3008 | 148548218 | UspA domain-containing protein                                                          | 4  | 2   | 2  | 162   | 6.4  | 0.7    |
| Pput_3009 | 148548219 | ribose-phosphate pyrophosphokinase                                                      | 3  | 1   | 2  | 119   | 3.4  | 0.33   |
| Pput_3013 | 148548223 | MerR family transcriptional regulator                                                   | 2  | 2   | 2  | 187   | 6.4  | 0.5    |
| Pput_3014 | 148548224 | putative PAS/PAC sensor protein                                                         | 2  | 2   | 3  | 150   | 20.9 | 0.72   |
| Pput_3024 | 148548234 | hypothetical protein Pput_3024                                                          | 1  | 6   | 1  | 50    | 6.2  | 0.19   |
| Pput_3038 | 148548248 | integral membrane sensor signal transduction histidine kinase                           | 3  | 2   | 5  | 231   | 6.6  | 0.37   |
| Pput_3039 | 148548249 | two component transcriptional regulator                                                 | 2  | 3   | 3  | 112   | 10   | 0.69   |
| Pput_3040 | 148548250 | hypothetical protein Pput_3040                                                          | 2  | 11  | 11 | 320   | 33.8 | 5.34   |
| Pput_3041 | 148548251 | short chain dehydrogenase                                                               | 4  | 16  | 15 | 888   | 41.4 | 10.87  |
| Pput_3042 | 148548252 | hypothetical protein Pput_3042                                                          | 5  | 10  | 7  | 660   | 29.2 | 4.67   |
| Pput_3043 | 148548253 | AMP-dependent synthetase and ligase                                                     | 2  | 7   | 8  | 384   | 14.9 | 1.11   |
| Pput_3051 | 148548261 | LysR family transcriptional regulator                                                   | 1  | 1   | 1  | 27    | 3.2  | 0.11   |
| Pput_3053 | 148548263 | hypothetical protein Pput_3053                                                          | 1  | 1   | 1  | 30    | 2.4  | 0.1    |
| Pput_3057 | 148548267 | LysR family transcriptional regulator                                                   | 1  | 1   | 1  | 41    | 2.7  | 0.12   |
| Pput_3058 | 148548268 | aldehyde dehydrogenase                                                                  | 1  | 1   | 1  | 26    | 2.3  | 0.07   |
| Pput_3062 | 148548272 | hypothetical protein Pput_3062                                                          | 1  | 1   | 1  | 29    | 3.9  | 0.15   |
| Pput_3065 | 148548275 | hypothetical protein Pput_3065                                                          | 2  | 3   | 4  | 144   | 8.5  | 0.38   |
| Pput_3066 | 148548276 | hypothetical protein Pput_3066                                                          | 3  | 7   | 6  | 193   | 15.8 | 1.27   |
| Pput_3068 | 148548278 | protease-type protease-like protein                                                     | 3  | 9   | 8  | 403   | 34.6 | 2.77   |
| Pput_3070 | 148548280 | D-serine dehydratase                                                                    | 1  | 1   | 1  | 63    | 2.2  | 0.08   |
| Pput_3071 | 148548281 | DNA-binding transcriptional regulator DsdC                                              | 1  | 1   | 1  | 32    | 2.9  | 0.11   |
| Pput_3083 | 148548293 | aldehyde dehydrogenase                                                                  | 1  | 14  | 6  | 484   | 13.6 | 0.8    |
| Pput_3084 | 148548294 | Pyrrolo-quinoline quinone                                                               | 3  | 8   | 6  | 437   | 12.3 | 0.58   |
| Pput_3085 | 148548295 | beta-lactamase domain-containing protein                                                | 1  | 1   | 1  | 27    | 2.9  | 0.11   |
| Pput_3093 | 148548303 | ABC-type branched-chain amino acid transport systems periplasmic component-like protein | 1  | 2   | 2  | 60    | 5    | 0.18   |
| Pput_3097 | 148548307 | peptidase C26                                                                           | 1  | 1   | 1  | 33    | 3.7  | 0.13   |
| Pput_3099 | 148548309 | d-galactonate transporter                                                               | 1  | 1   | 1  | 24    | 2    | 0.07   |
| Pput_3102 | 148548312 | GntR domain-containing protein                                                          | 4  | 5   | 7  | 379   | 26.9 | 2.1    |
| Pput_3107 | 148548317 | hypothetical protein Pput_3107                                                          | 1  | 1   | 1  | 27    | 3.9  | 0.13   |
| Pput_3108 | 148548318 | hypothetical protein Pput_3108                                                          | 3  | 2   | 4  | 165   | 12.4 | 1.24   |
| Pput_3109 | 148548319 | TonB-dependent siderophore receptor                                                     | 1  | 1   | 1  | 31    | 1.7  | 0.05   |
| Pput_3117 | 148548327 | shikimate dehydrogenase substrate binding subunit                                       | 1  | 1   | 1  | 40    | 4.1  | 0.13   |
| Pput_3124 | 148548334 | IclR family transcriptional regulator                                                   | 1  | 2   | 2  | 97    | 9.7  | 0.29   |
| Pput_3128 | 148548338 | putative aminotransferase                                                               | 1  | 1   | 1  | 29    | 2    | 0.07   |
| Pput_3133 | 148548343 | GCN5-related N-acetyltransferase                                                        | 1  | 1   | 1  | 34    | 5.5  | 0.21   |
| Pput_3134 | 148548344 | heme oxygenase                                                                          | 2  | 1   | 2  | 68    | 4.6  | 0.56   |

|           |           |                                                                   |    |    |    |       |      |         |
|-----------|-----------|-------------------------------------------------------------------|----|----|----|-------|------|---------|
| Pput_3138 | 148548348 | hypothetical protein Pput_3138                                    | 2  | 1  | 2  | 138   | 8.5  | 0.4     |
| Pput_3139 | 148548349 | hypothetical protein Pput_3139                                    | 1  | 1  | 1  | 24    | 1.5  | 0.06    |
| Pput_3142 | 148548352 | hypothetical protein Pput_3142                                    | 1  | 1  | 1  | 27    | 11.5 | 0.23    |
| Pput_3143 | 148548353 | LysR family transcriptional regulator                             | 1  | 1  | 1  | 39    | 3.2  | 0.11    |
| Pput_3146 | 148548356 | general substrate transporter                                     | 6  | 2  | 3  | 442   | 4.8  | 0.5     |
| Pput_3161 | 148548371 | 4-hydroxyphenylpyruvate dioxygenase                               | 3  | 5  | 5  | 277   | 8    | 0.39    |
| Pput_3164 | 148548374 | LysR family transcriptional regulator                             | 2  | 3  | 3  | 117   | 8.9  | 0.46    |
| Pput_3165 | 148548375 | hypothetical protein Pput_3165                                    | 4  | 3  | 3  | 209   | 13.9 | 1.31    |
| Pput_3170 | 148548380 | trans-aconitate 2-methyltransferase                               | 3  | 2  | 2  | 119   | 8.9  | 0.54    |
| Pput_3171 | 148548381 | amino acid permease-associated region                             | 1  | 1  | 1  | 28    | 1.9  | 0.07    |
| Pput_3172 | 148548382 | GntR family transcriptional regulator                             | 1  | 2  | 2  | 101   | 4.4  | 0.14    |
| Pput_3176 | 148548384 | hypothetical protein Pput_3176                                    | 1  | 1  | 1  | 30    | 4.8  | 0.19    |
| Pput_3177 | 148548385 | short-chain dehydrogenase/reductase SDR                           | 2  | 4  | 4  | 168   | 20.9 | 0.83    |
| Pput_3178 | 148548386 | LysR family transcriptional regulator                             | 2  | 1  | 2  | 81    | 3.9  | 0.22    |
| Pput_3179 | 148548387 | hypothetical protein Pput_3179                                    | 1  | 1  | 1  | 27    | 11.5 | 0.15    |
| Pput_3181 | 148548389 | glutathione S-transferase domain-containing protein               | 2  | 1  | 1  | 69    | 6.8  | 0.32    |
| Pput_3183 | 148548391 | LysR family transcriptional regulator                             | 2  | 1  | 1  | 52    | 3.7  | 0.24    |
| Pput_3186 | 148548394 | major facilitator transporter                                     | 1  | 1  | 1  | 30    | 2.9  | 0.09    |
| Pput_3187 | 148548395 | D-isomer specific 2-hydroxyacid dehydrogenase, NAD-binding        | 2  | 4  | 3  | 286   | 12.6 | 0.47    |
| Pput_3200 | 148548408 | protocatechuate 4,5-dioxygenase                                   | 2  | 2  | 3  | 56    | 2.4  | 0.24    |
| Pput_3204 | 148548412 | hypothetical protein Pput_3204                                    | 1  | 1  | 1  | 27    | 3.8  | 0.15    |
| Pput_3217 | 148548425 | diguanylate cyclase                                               | 3  | 3  | 5  | 248   | 10.4 | 0.74    |
| Pput_3218 | 148548426 | MerR family transcriptional regulator                             | 2  | 1  | 2  | 167   | 11.9 | 0.56    |
| Pput_3220 | 148548428 | phenylalanyl-tRNA synthetase subunit beta                         | 3  | 10 | 11 | 309   | 12.9 | 0.79    |
| Pput_3221 | 148548429 | phenylalanyl-tRNA synthetase subunit alpha                        | 2  | 7  | 7  | 206   | 18.9 | 1.24    |
| Pput_3222 | 148548430 | 50S ribosomal protein L20                                         | 6  | 6  | 6  | 500   | 34.7 | 8.65    |
| Pput_3223 | 148548431 | 50S ribosomal protein L35                                         | 2  | 3  | 2  | 134   | 23.4 | 3.42    |
| Pput_3224 | 148548432 | translation initiation factor IF-3                                | 5  | 5  | 5  | 471   | 19.7 | 3.79    |
| Pput_3225 | 148548433 | threonyl-tRNA synthetase                                          | 4  | 7  | 8  | 586   | 10.9 | 1.14    |
| Pput_3228 | 148548436 | hypothetical protein Pput_3228                                    | 2  | 1  | 2  | 97    | 10.4 | 0.72    |
| Pput_3230 | 148548438 | inosine/uridine-preferring nucleoside hydrolase                   | 3  | 1  | 2  | 135   | 3    | 0.33    |
| Pput_3231 | 148548439 | D-ribose pyranase                                                 | 1  | 2  | 2  | 107   | 15.2 | 0.62    |
| Pput_3232 | 148548440 | ribokinase                                                        | 1  | 1  | 1  | 51    | 3.3  | 0.12    |
| Pput_3235 | 148548443 | ABC transporter related                                           | 1  | 1  | 1  | 40    | 1.9  | 0.07    |
| Pput_3238 | 148548446 | putative PAS/PAC sensor protein                                   | 1  | 1  | 1  | 30    | 1.1  | 0.05    |
| Pput_3244 | 148548452 | sporulation domain-containing protein                             | 3  | 4  | 4  | 218   | 26.5 | 1.55    |
| Pput_3245 | 148548453 | FAD dependent oxidoreductase                                      | 1  | 1  | 1  | 50    | 2.6  | 0.08    |
| Pput_3246 | 148548454 | hypothetical protein Pput_3246                                    | 3  | 2  | 2  | 205   | 7.4  | 0.58    |
| Pput_3251 | 148548459 | serine/threonine transporter SstT                                 | 1  | 1  | 1  | 30    | 2.5  | 0.09    |
| Pput_3252 | 148548460 | hypothetical protein Pput_3252                                    | 2  | 10 | 9  | 449   | 48.1 | 5.72    |
| Pput_3255 | 148548463 | alkyl hydroperoxide reductase subunit F                           | 2  | 1  | 2  | 59    | 1.7  | 0.14    |
| Pput_3258 | 148548466 | acyl-CoA dehydrogenase domain-containing protein                  | 1  | 1  | 1  | 54    | 2    | 0.08    |
| Pput_3259 | 148548467 | LysR family transcriptional regulator                             | 3  | 4  | 7  | 210   | 13   | 1.31    |
| Pput_3263 | 148548471 | dihydropteridine reductase                                        | 1  | 3  | 2  | 43    | 8.8  | 0.34    |
| Pput_3265 | 148548473 | AraC family transcriptional regulator                             | 2  | 3  | 3  | 124   | 11.2 | 0.65    |
| Pput_3271 | 148548479 | 2~-5~ RNA ligase                                                  | 3  | 2  | 2  | 135   | 11   | 1.01    |
| Pput_3273 | 148548481 | alkylhydroperoxidase                                              | 1  | 1  | 1  | 34    | 8.8  | 0.34    |
| Pput_3285 | 148548493 | CzcA family heavy metal efflux protein                            | 1  | 1  | 1  | 26    | 1.3  | 0.03    |
| Pput_3292 | 148548500 | two component transcriptional regulator                           | 1  | 2  | 2  | 30    | 7.3  | 0.29    |
| Pput_3302 | 148548510 | DNA polymerase II                                                 | 2  | 1  | 2  | 53    | 1    | 0.08    |
| Pput_3308 | 148548516 | hypothetical protein Pput_3308                                    | 2  | 1  | 1  | 57    | 2.8  | 0.18    |
| Pput_3309 | 148548517 | hypothetical protein Pput_3309                                    | 1  | 1  | 1  | 28    | 4.7  | 0.15    |
| Pput_3316 | 148548524 | electron transport protein SCO1/SenC                              | 1  | 1  | 1  | 31    | 3.1  | 0.15    |
| Pput_3318 | 148548526 | acyltransferase 3                                                 | 1  | 1  | 1  | 31    | 2.9  | 0.09    |
| Pput_3319 | 148548527 | fatty acid cistrans isomerase                                     | 2  | 3  | 5  | 136   | 3.3  | 0.26    |
| Pput_3320 | 148548528 | B12-dependent methionine synthase                                 | 4  | 7  | 10 | 323   | 6.4  | 0.3     |
| Pput_3324 | 148548532 | sulfite reductase (ferredoxin)                                    | 3  | 10 | 15 | 451   | 21.3 | 1.71    |
| Pput_3326 | 148548534 | leucine-rich repeat-containing protein                            | 1  | 1  | 1  | 34    | 0.7  | 0.02    |
| Pput_3327 | 148548535 | 2,5-diketo-D-gluconate reductase B                                | 2  | 4  | 4  | 240   | 16.1 | 1.26    |
| Pput_3331 | 148548539 | peptidase M14, carboxypeptidase A                                 | 3  | 11 | 12 | 701   | 30.9 | 2.72    |
| Pput_3341 | 148548549 | multi-sensor hybrid histidine kinase                              | 1  | 4  | 4  | 86    | 5.4  | 0.18    |
| Pput_3345 | 148548553 | AMP-dependent synthetase and ligase                               | 4  | 5  | 5  | 443   | 7.5  | 0.56    |
| Pput_3348 | 148548556 | integral membrane sensor signal transduction histidine kinase     | 1  | 1  | 1  | 25    | 3    | 0.08    |
| Pput_3353 | 148548561 | phage integrase family protein                                    | 1  | 1  | 1  | 31    | 2.5  | 0.08    |
| Pput_3376 | 148548584 | hypothetical protein Pput_3376                                    | 1  | 1  | 1  | 31    | 4.3  | 0.11    |
| Pput_3381 | 148548589 | hypothetical protein Pput_3381                                    | 1  | 1  | 1  | 29    | 6.5  | 0.22    |
| Pput_3398 | 148548606 | putative phage repressor                                          | 1  | 1  | 1  | 31    | 3.2  | 0.12    |
| Pput_3412 | 148548620 | hypothetical protein Pput_3412                                    | 1  | 1  | 1  | 40    | 4.7  | 0.2     |
| Pput_3421 | 148548629 | hypothetical protein Pput_3421                                    | 1  | 1  | 1  | 33    | 3    | 0.13    |
| Pput_3431 | 161936356 | bifunctional aconitate hydratase 2/2-methylisocitrate dehydratase | 36 | 32 | 24 | 5301  | 26.4 | 6.38    |
| Pput_3432 | 148548640 | 2-methylcitrate dehydratase                                       | 2  | 8  | 9  | 252   | 16.6 | 0.9     |
| Pput_3433 | 148548641 | putative AcnD-accessory protein PrpF                              | 3  | 18 | 11 | 873   | 29.3 | 4.36    |
| Pput_3434 | 148548642 | aconitate hydratase                                               | 14 | 22 | 22 | 1602  | 22   | 2.66    |
| Pput_3435 | 148548643 | methylcitrate synthase                                            | 11 | 26 | 14 | 1745  | 42.1 | 9.34    |
| Pput_3436 | 148548644 | 2-methylisocitrate lyase                                          | 9  | 14 | 9  | 1458  | 22.6 | 7.44    |
| Pput_3437 | 148548645 | GntR family transcriptional regulator                             | 3  | 6  | 7  | 187   | 21.8 | 1.81    |
| Pput_3439 | 148548647 | hypothetical protein Pput_3439                                    | 5  | 2  | 5  | 230   | 4.1  | 0.41    |
| Pput_3440 | 148548648 | alpha-L-glutamate ligase-like protein                             | 1  | 1  | 1  | 28    | 3.4  | 0.1     |
| Pput_3442 | 148548650 | phosphoadenosine phosphosulfate reductase                         | 3  | 6  | 6  | 256   | 22.1 | 1.47    |
| Pput_3443 | 148548651 | transcriptional regulator CysB                                    | 6  | 8  | 11 | 1047  | 17.3 | 4.38    |
| Pput_3444 | 148548652 | UspA domain-containing protein                                    | 2  | 1  | 1  | 165   | 8.5  | 0.42    |
| Pput_3446 | 148548654 | phospho-2-dehydro-3-deoxyheptonate aldolase                       | 2  | 7  | 6  | 233   | 14.5 | 1.17    |
| Pput_3448 | 148548656 | outer membrane lipoprotein OprI                                   | 50 | 74 | 11 | 11598 | 60.2 | 1618.75 |
| Pput_3449 | 148548657 | ErkK/YbiS/YcfS/YnhG family protein                                | 2  | 4  | 4  | 130   | 10.2 | 0.62    |
| Pput_3451 | 148548659 | arylesterase                                                      | 1  | 1  | 1  | 56    | 5    | 0.18    |
| Pput_3452 | 148548660 | ABC transporter related                                           | 1  | 4  | 4  | 92    | 19.7 | 0.78    |
| Pput_3454 | 148548662 | transcription elongation factor GreB                              | 1  | 1  | 1  | 32    | 3.7  | 0.2     |
| Pput_3458 | 148548666 | TatD-related deoxyribonuclease                                    | 2  | 4  | 5  | 110   | 17.3 | 0.67    |
| Pput_3459 | 148548667 | methyl-accepting chemotaxis sensory transducer                    | 2  | 3  | 3  | 148   | 7.5  | 0.3     |

|           |           |                                                                                              |    |    |    |      |      |       |
|-----------|-----------|----------------------------------------------------------------------------------------------|----|----|----|------|------|-------|
| Pput_3460 | 148548668 | hypothetical protein Pput_3460                                                               | 2  | 1  | 2  | 100  | 9    | 0.56  |
| Pput_3461 | 148548669 | Acyl-CoA thioesterase-like protein                                                           | 2  | 5  | 4  | 212  | 15.8 | 0.77  |
| Pput_3462 | 148548670 | CHAD domain-containing protein                                                               | 4  | 9  | 9  | 732  | 33.2 | 4.46  |
| Pput_3463 | 148548671 | hypothetical protein Pput_3463                                                               | 6  | 2  | 2  | 434  | 27.2 | 3.44  |
| Pput_3464 | 148548672 | patatin                                                                                      | 1  | 1  | 1  | 35   | 1.4  | 0.1   |
| Pput_3465 | 148548673 | PpiC-type peptidyl-prolyl cis-trans isomerase                                                | 2  | 2  | 2  | 91   | 3    | 0.16  |
| Pput_3466 | 148548674 | histone family protein DNA-binding protein                                                   | 2  | 9  | 8  | 398  | 71.1 | 22.72 |
| Pput_3467 | 148548675 | ATP-dependent protease La                                                                    | 2  | 15 | 13 | 481  | 12.8 | 1.34  |
| Pput_3468 | 148548676 | ATP-dependent protease ATP-binding subunit ClpX                                              | 4  | 7  | 9  | 516  | 18.3 | 1.3   |
| Pput_3469 | 148548677 | ATP-dependent Clp protease proteolytic subunit                                               | 5  | 5  | 7  | 560  | 23.9 | 4.8   |
| Pput_3470 | 148548678 | trigger factor                                                                               | 5  | 13 | 14 | 398  | 26.3 | 2.39  |
| Pput_3472 | 148548680 | methylenetetrahydrofolate dehydrogenase (NADP(+))                                            | 2  | 1  | 1  | 62   | 3.3  | 0.24  |
| Pput_3473 | 148548681 | extracellular solute-binding protein                                                         | 3  | 7  | 9  | 521  | 11.7 | 1.18  |
| Pput_3478 | 148548686 | ABC transporter related                                                                      | 2  | 1  | 2  | 52   | 2.5  | 0.18  |
| Pput_3484 | 148548692 | GntR domain-containing protein                                                               | 1  | 2  | 2  | 90   | 8.2  | 0.33  |
| Pput_3489 | 148548697 | methyl-accepting chemotaxis sensory transducer                                               | 3  | 1  | 2  | 158  | 1.6  | 0.18  |
| Pput_3491 | 148548699 | endoribonuclease L-PSP                                                                       | 1  | 1  | 1  | 33   | 6.4  | 0.29  |
| Pput_3502 | 148548710 | peptidase M24                                                                                | 1  | 6  | 6  | 105  | 8.8  | 0.39  |
| Pput_3503 | 148548711 | hypothetical protein Pput_3503                                                               | 2  | 1  | 1  | 81   | 3.5  | 0.18  |
| Pput_3507 | 148548715 | isochorismatase hydrolase                                                                    | 2  | 1  | 2  | 60   | 6.6  | 0.4   |
| Pput_3508 | 148548716 | XRE family transcriptional regulator                                                         | 2  | 1  | 1  | 141  | 7    | 0.36  |
| Pput_3517 | 148548725 | hypothetical protein Pput_3517                                                               | 2  | 1  | 1  | 77   | 5    | 0.44  |
| Pput_3521 | 148548729 | enoyl-CoA hydratase/isomerase                                                                | 2  | 8  | 5  | 409  | 19.5 | 2.11  |
| Pput_3522 | 148548730 | acyl-CoA dehydrogenase domain-containing protein                                             | 2  | 8  | 7  | 327  | 18.9 | 1.44  |
| Pput_3523 | 148548731 | acetyl-CoA acetyltransferase                                                                 | 3  | 12 | 10 | 961  | 31   | 2.75  |
| Pput_3524 | 148548732 | short-chain dehydrogenase/reductase SDR                                                      | 3  | 9  | 6  | 471  | 26.3 | 2.19  |
| Pput_3525 | 148548733 | AMP-dependent synthetase and ligase                                                          | 7  | 4  | 4  | 290  | 8    | 0.63  |
| Pput_3526 | 148548734 | leucine-rich repeat-containing protein                                                       | 1  | 1  | 1  | 42   | 0.7  | 0.02  |
| Pput_3527 | 148548735 | helix-turn-helix domain-containing protein                                                   | 1  | 1  | 1  | 31   | 2.6  | 0.1   |
| Pput_3528 | 148548736 | LysR family transcriptional regulator                                                        | 1  | 1  | 1  | 42   | 3.5  | 0.12  |
| Pput_3529 | 148548737 | 2-aminoethylphosphonate--pyruvate transaminase                                               | 1  | 1  | 1  | 58   | 3.5  | 0.09  |
| Pput_3536 | 148548743 | alpha/beta hydrolase fold                                                                    | 1  | 1  | 1  | 48   | 3.3  | 0.1   |
| Pput_3543 | 148548750 | LysR family transcriptional regulator                                                        | 1  | 1  | 1  | 25   | 3.5  | 0.11  |
| Pput_3546 | 148548753 | water stress/hypersensitive response protein                                                 | 2  | 2  | 2  | 122  | 7.5  | 0.71  |
| Pput_3550 | 148548757 | UspA domain-containing protein                                                               | 11 | 10 | 10 | 937  | 35.2 | 6.16  |
| Pput_3552 | 148548759 | formate dehydrogenase, alpha subunit                                                         | 4  | 2  | 4  | 153  | 2.6  | 0.16  |
| Pput_3553 | 148548760 | NADH dehydrogenase (quinone)                                                                 | 1  | 1  | 1  | 66   | 1.9  | 0.07  |
| Pput_3555 | 148548762 | ProQ activator of osmoprotectant transporter ProP                                            | 1  | 1  | 1  | 34   | 6.4  | 0.2   |
| Pput_3556 | 148548763 | XRE family transcriptional regulator                                                         | 1  | 1  | 1  | 45   | 5.4  | 0.19  |
| Pput_3562 | 148548769 | short-chain dehydrogenase/reductase SDR                                                      | 1  | 1  | 1  | 72   | 5.1  | 0.15  |
| Pput_3574 | 161936355 | transaldolase B                                                                              | 3  | 10 | 10 | 619  | 34.4 | 2.93  |
| Pput_3577 | 148548783 | response regulator receiver protein                                                          | 1  | 1  | 1  | 27   | 2.5  | 0.09  |
| Pput_3579 | 148548785 | VacJ family lipoprotein                                                                      | 5  | 6  | 7  | 517  | 26   | 4.24  |
| Pput_3582 | 148548788 | 7-cyano-7-deazaguanine reductase                                                             | 3  | 2  | 5  | 150  | 10.1 | 0.64  |
| Pput_3584 | 148548790 | two component heavy metal response transcriptional regulator                                 | 1  | 1  | 1  | 39   | 6.2  | 0.15  |
| Pput_3586 | 148548792 | LoIc/E family lipoprotein releasing system, transmembrane protein                            | 1  | 1  | 1  | 28   | 2.7  | 0.08  |
| Pput_3587 | 148548793 | lipoprotein releasing system, ATP-binding protein                                            | 2  | 2  | 2  | 94   | 10.3 | 0.47  |
| Pput_3589 | 148548795 | type IV pilus assembly PilZ                                                                  | 1  | 1  | 1  | 33   | 5.7  | 0.18  |
| Pput_3590 | 148548796 | glycerophosphoryl diester phosphodiesterase                                                  | 2  | 2  | 3  | 131  | 8.8  | 0.62  |
| Pput_3591 | 148548797 | soluble pyridine nucleotide transhydrogenase                                                 | 4  | 14 | 10 | 626  | 20.9 | 2.23  |
| Pput_3593 | 148548799 | glyceraldehyde-3-phosphate dehydrogenase                                                     | 12 | 32 | 22 | 1537 | 40.2 | 6.74  |
| Pput_3594 | 148548800 | transcription-repair coupling factor                                                         | 3  | 12 | 11 | 372  | 9.2  | 0.46  |
| Pput_3596 | 148548802 | non-specific serine/threonine protein kinase                                                 | 4  | 5  | 7  | 252  | 3.9  | 0.24  |
| Pput_3597 | 148548803 | beta-hexosaminidase                                                                          | 4  | 2  | 3  | 173  | 6.3  | 0.62  |
| Pput_3598 | 148548804 | TetR family transcriptional regulator                                                        | 2  | 4  | 5  | 181  | 17.4 | 1.03  |
| Pput_3599 | 148548805 | LexA repressor                                                                               | 2  | 2  | 2  | 82   | 10.9 | 0.54  |
| Pput_3601 | 148548807 | hypothetical protein Pput_3601                                                               | 1  | 1  | 1  | 37   | 10.4 | 0.48  |
| Pput_3602 | 148548808 | hypothetical protein Pput_3602                                                               | 1  | 1  | 1  | 27   | 4.8  | 0.15  |
| Pput_3603 | 148548809 | DNA topoisomerase I                                                                          | 4  | 6  | 10 | 348  | 6.4  | 0.66  |
| Pput_3605 | 148548811 | 3-ketoacyl-CoA thiolase                                                                      | 3  | 17 | 11 | 665  | 34.8 | 3.68  |
| Pput_3606 | 148548812 | multifunctional fatty acid oxidation complex subunit alpha                                   | 4  | 12 | 10 | 496  | 14.7 | 0.84  |
| Pput_3607 | 148548813 | hypothetical protein Pput_3607                                                               | 1  | 1  | 1  | 26   | 5.5  | 0.23  |
| Pput_3608 | 148548814 | UspA domain-containing protein                                                               | 3  | 4  | 3  | 207  | 17.8 | 2.12  |
| Pput_3609 | 148548815 | ABC transporter related                                                                      | 3  | 1  | 2  | 84   | 1.6  | 0.15  |
| Pput_3610 | 148548816 | lytic transglycosylase, catalytic                                                            | 1  | 2  | 2  | 85   | 3.1  | 0.1   |
| Pput_3611 | 148548817 | MOSC domain-containing protein                                                               | 2  | 1  | 1  | 57   | 4.9  | 0.26  |
| Pput_3616 | 148548822 | lipid kinase                                                                                 | 1  | 1  | 1  | 56   | 3.7  | 0.12  |
| Pput_3617 | 148548823 | glycosyl transferase, group 1                                                                | 2  | 1  | 2  | 90   | 2.2  | 0.16  |
| Pput_3618 | 148548824 | molybdenum cofactor synthesis domain-containing protein                                      | 4  | 5  | 7  | 240  | 15.1 | 0.78  |
| Pput_3619 | 148548825 | molybdenum cofactor biosynthesis protein B                                                   | 8  | 3  | 3  | 772  | 21.8 | 2.9   |
| Pput_3622 | 148548828 | lipid ABC transporter ATPase/inner membrane protein                                          | 7  | 1  | 1  | 271  | 1.4  | 0.42  |
| Pput_3624 | 148548830 | erythronate-4-phosphate dehydrogenase                                                        | 1  | 4  | 4  | 88   | 9.7  | 0.41  |
| Pput_3627 | 148548833 | aconitate hydratase                                                                          | 10 | 7  | 13 | 574  | 7.8  | 0.89  |
| Pput_3628 | 148548834 | methyl-accepting chemotaxis sensory transducer                                               | 3  | 2  | 5  | 242  | 5.4  | 0.55  |
| Pput_3630 | 148548836 | hypothetical protein Pput_3630                                                               | 1  | 1  | 1  | 30   | 7.8  | 0.34  |
| Pput_3633 | 148548839 | Rh family protein/ammonium transporter                                                       | 1  | 1  | 1  | 34   | 4    | 0.09  |
| Pput_3634 | 148548840 | protein of unknown function DUF883, ElaB                                                     | 2  | 1  | 1  | 111  | 10.6 | 0.7   |
| Pput_3636 | 148548842 | hypothetical protein Pput_3636                                                               | 1  | 1  | 1  | 28   | 11   | 0.32  |
| Pput_3640 | 148548846 | hypothetical protein Pput_3640                                                               | 4  | 2  | 2  | 142  | 7.9  | 1.2   |
| Pput_3641 | 148548847 | D-alanyl-D-alanine carboxypeptidase/D-alanyl-D-alanine-endopeptidase                         | 2  | 4  | 4  | 145  | 8.7  | 0.39  |
| Pput_3642 | 148548848 | diguanylate cyclase with PAS/PAC sensor                                                      | 2  | 5  | 6  | 208  | 7.8  | 0.27  |
| Pput_3643 | 229328218 | 23S rRNA m(2)G2445 methyltransferase                                                         | 2  | 14 | 13 | 395  | 19.5 | 1.15  |
| Pput_3644 | 148548850 | ribosome modulation factor                                                                   | 2  | 1  | 2  | 91   | 15.5 | 1     |
| Pput_3645 | 148548851 | dihydroorotate dehydrogenase 2                                                               | 3  | 7  | 6  | 250  | 19.2 | 0.93  |
| Pput_3646 | 148548852 | ABC-type nitrate/sulfonate/bicarbonate transport systems periplasmic components-like protein | 2  | 6  | 7  | 220  | 12.6 | 0.81  |
| Pput_3647 | 148548853 | response regulator receiver/ANTAR domain-containing protein                                  | 2  | 1  | 1  | 79   | 5.8  | 0.36  |
| Pput_3649 | 148548855 | protein kinase                                                                               | 1  | 1  | 1  | 39   | 1.6  | 0.06  |
| Pput_3651 | 148548857 | OmpF family protein                                                                          | 20 | 11 | 12 | 2890 | 21.2 | 10.24 |
| Pput_3652 | 148548858 | RNA polymerase sigma factor SigX                                                             | 2  | 1  | 1  | 59   | 5.3  | 0.34  |

|           |           |                                                                      |    |    |    |      |      |       |
|-----------|-----------|----------------------------------------------------------------------|----|----|----|------|------|-------|
| Pput_3653 | 148548859 | TM helix repeat-containing protein                                   | 11 | 2  | 2  | 548  | 9.1  | 1.58  |
| Pput_3655 | 148548861 | Mg2+ transporter protein, CorA family protein                        | 1  | 2  | 2  | 94   | 6.6  | 0.21  |
| Pput_3656 | 148548862 | ribonuclease activity regulator protein RraA                         | 6  | 2  | 3  | 468  | 6.7  | 2.1   |
| Pput_3658 | 148548864 | phosphoenolpyruvate synthase                                         | 6  | 18 | 17 | 697  | 18.8 | 1.72  |
| Pput_3659 | 148548865 | hypothetical protein Pput_3659                                       | 2  | 1  | 1  | 136  | 4.4  | 0.24  |
| Pput_3660 | 148548866 | NAD-glutamate dehydrogenase                                          | 24 | 20 | 20 | 1801 | 10.5 | 1.4   |
| Pput_3676 | 148548882 | EmrB/QacA family drug resistance transporter                         | 1  | 1  | 1  | 28   | 1.8  | 0.07  |
| Pput_3677 | 148548883 | GntR family transcriptional regulator                                | 3  | 2  | 3  | 107  | 9.8  | 0.55  |
| Pput_3684 | 148548890 | sodium:dicarboxylate symporter                                       | 1  | 1  | 1  | 30   | 1.6  | 0.08  |
| Pput_3687 | 148548893 | hypothetical protein Pput_3687                                       | 1  | 1  | 1  | 28   | 4.6  | 0.12  |
| Pput_3689 | 148548895 | HAD family hydrolase                                                 | 5  | 1  | 1  | 123  | 1.3  | 0.25  |
| Pput_3690 | 148548896 | acetyl-CoA acetyltransferase                                         | 1  | 1  | 1  | 46   | 2.5  | 0.09  |
| Pput_3692 | 148548898 | iron-containing alcohol dehydrogenase                                | 1  | 1  | 1  | 54   | 2.8  | 0.09  |
| Pput_3693 | 148548899 | acyl-CoA dehydrogenase domain-containing protein                     | 1  | 2  | 2  | 48   | 3.4  | 0.12  |
| Pput_3704 | 148548910 | AMP-dependent synthetase and ligase                                  | 1  | 1  | 1  | 26   | 3.1  | 0.07  |
| Pput_3710 | 148548916 | ATPase                                                               | 4  | 4  | 4  | 409  | 11   | 1.16  |
| Pput_3711 | 148548917 | hypothetical protein Pput_3711                                       | 3  | 1  | 2  | 94   | 3.1  | 0.3   |
| Pput_3713 | 148548919 | von Willebrand factor, type A                                        | 1  | 1  | 1  | 26   | 3.6  | 0.09  |
| Pput_3714 | 148548920 | TPR repeat-containing protein                                        | 1  | 1  | 1  | 45   | 1.6  | 0.06  |
| Pput_3715 | 148548921 | hypothetical protein Pput_3715                                       | 2  | 1  | 2  | 58   | 1.7  | 0.12  |
| Pput_3721 | 148548927 | hypothetical protein Pput_3721                                       | 4  | 4  | 5  | 348  | 13.2 | 0.89  |
| Pput_3723 | 148548929 | RND efflux transporter                                               | 5  | 1  | 2  | 205  | 1.4  | 0.25  |
| Pput_3725 | 148548931 | aminopeptidase N                                                     | 4  | 9  | 9  | 475  | 8.1  | 0.63  |
| Pput_3729 | 148548935 | metallophosphoesterase                                               | 3  | 1  | 2  | 87   | 4.6  | 0.3   |
| Pput_3730 | 148548936 | inorganic polyphosphate/ATP-NAD kinase                               | 2  | 3  | 3  | 156  | 9.8  | 0.51  |
| Pput_3732 | 148548938 | cytochrome B561                                                      | 3  | 2  | 3  | 133  | 9.4  | 1.01  |
| Pput_3734 | 148548940 | NADH:flavin oxidoreductase/NADH oxidase                              | 1  | 2  | 2  | 62   | 3.8  | 0.1   |
| Pput_3735 | 148548941 | AraC-like transcriptional regulator                                  | 1  | 1  | 1  | 30   | 4.3  | 0.11  |
| Pput_3738 | 148548944 | short-chain dehydrogenase/reductase SDR                              | 4  | 9  | 8  | 410  | 31.4 | 3.42  |
| Pput_3740 | 148548946 | helix-turn-helix domain-containing protein                           | 1  | 1  | 1  | 46   | 4    | 0.11  |
| Pput_3742 | 148548948 | LysR family transcriptional regulator                                | 2  | 1  | 1  | 90   | 3    | 0.24  |
| Pput_3743 | 148548949 | short-chain dehydrogenase/reductase SDR                              | 2  | 2  | 2  | 86   | 7.1  | 0.45  |
| Pput_3751 | 148548957 | multi-sensor hybrid histidine kinase                                 | 2  | 1  | 1  | 71   | 0.8  | 0.06  |
| Pput_3752 | 148548958 | two component LuxR family transcriptional regulator                  | 1  | 1  | 1  | 25   | 6    | 0.16  |
| Pput_3759 | 148548965 | oxidoreductase                                                       | 1  | 1  | 1  | 66   | 6.6  | 0.14  |
| Pput_3760 | 148548966 | O-succinylhomoserine sulphydrylase                                   | 3  | 7  | 6  | 270  | 15.4 | 1.12  |
| Pput_3761 | 148548967 | amidophosphoribosyltransferase                                       | 5  | 8  | 9  | 505  | 18   | 1.27  |
| Pput_3763 | 148548969 | sporulation domain-containing protein                                | 2  | 1  | 1  | 69   | 4.2  | 0.34  |
| Pput_3764 | 148548970 | FolC bifunctional protein                                            | 1  | 1  | 1  | 86   | 2.8  | 0.08  |
| Pput_3765 | 148548971 | acetyl-CoA carboxylase subunit beta                                  | 5  | 15 | 10 | 904  | 32   | 5.29  |
| Pput_3766 | 148548972 | N-(5--phosphoribosyl)anthranilate isomerase                          | 2  | 1  | 1  | 78   | 6.3  | 0.34  |
| Pput_3767 | 148548973 | tRNA pseudouridine synthase A                                        | 1  | 1  | 1  | 70   | 3.9  | 0.1   |
| Pput_3768 | 148548974 | peptidoglycan-binding LysM                                           | 4  | 5  | 8  | 290  | 6.9  | 0.41  |
| Pput_3769 | 148548975 | aspartate-semialdehyde dehydrogenase                                 | 1  | 1  | 1  | 26   | 2.7  | 0.11  |
| Pput_3770 | 148548976 | aspartate-semialdehyde dehydrogenase                                 | 3  | 11 | 9  | 667  | 22.2 | 2.7   |
| Pput_3771 | 148548977 | 3-isopropylmalate dehydrogenase                                      | 3  | 6  | 6  | 463  | 15.8 | 1.22  |
| Pput_3772 | 148548978 | methyltransferase type 11                                            | 1  | 5  | 5  | 93   | 19.3 | 0.87  |
| Pput_3773 | 148548979 | isopropylmalate isomerase small subunit                              | 3  | 3  | 3  | 192  | 15   | 0.86  |
| Pput_3774 | 148548980 | isopropylmalate isomerase large subunit                              | 2  | 3  | 4  | 127  | 9    | 0.38  |
| Pput_3776 | 148548982 | diguanylate cyclase/phosphodiesterase with PAS/PAC and GAF sensor(s) | 2  | 5  | 5  | 172  | 5    | 0.19  |
| Pput_3777 | 148548983 | heat shock protein Hsp20                                             | 5  | 16 | 12 | 813  | 67.3 | 31.35 |
| Pput_3780 | 148548986 | thioesterase superfamily protein                                     | 1  | 1  | 1  | 72   | 6.3  | 0.23  |
| Pput_3783 | 148548989 | glutamyl-tRNA synthetase                                             | 4  | 8  | 10 | 556  | 15.2 | 1.53  |
| Pput_3784 | 148548990 | secretion protein HlyD family protein                                | 2  | 3  | 3  | 149  | 7.5  | 0.48  |
| Pput_3786 | 148548992 | excinuclease ABC subunit B                                           | 2  | 3  | 4  | 129  | 5.1  | 0.2   |
| Pput_3787 | 148548993 | aromatic amino acid aminotransferase                                 | 3  | 13 | 13 | 761  | 38.7 | 2.57  |
| Pput_3789 | 148548995 | hypothetical protein Pput_3789                                       | 3  | 5  | 5  | 300  | 32.4 | 2.39  |
| Pput_3790 | 148548996 | hypothetical protein Pput_3790                                       | 2  | 2  | 2  | 144  | 10.4 | 0.54  |
| Pput_3792 | 148548998 | TetR family transcriptional regulator                                | 1  | 2  | 2  | 33   | 9.5  | 0.33  |
| Pput_3793 | 148548999 | TatD family hydrolase                                                | 1  | 3  | 3  | 85   | 11.5 | 0.45  |
| Pput_3795 | 148549001 | thymidylate kinase                                                   | 1  | 1  | 1  | 41   | 4.8  | 0.17  |
| Pput_3796 | 148549002 | aminodeoxychorismate lyase                                           | 2  | 2  | 3  | 79   | 5.7  | 0.25  |
| Pput_3797 | 148549003 | 4-amino-4-deoxychorismate lyase                                      | 1  | 2  | 2  | 55   | 7.7  | 0.27  |
| Pput_3798 | 229328217 | 3-oxoacyl-(acyl carrier protein) synthase II                         | 2  | 6  | 6  | 296  | 14.7 | 0.82  |
| Pput_3800 | 148549006 | 3-ketoacyl-(acyl-carrier-protein) reductase                          | 3  | 9  | 11 | 1039 | 42.7 | 7.13  |
| Pput_3801 | 148549007 | malonyl CoA-acyl carrier protein transacylase                        | 3  | 2  | 2  | 280  | 9.9  | 0.46  |
| Pput_3802 | 148549008 | putative glycerol-3-phosphate acyltransferase PlsX                   | 3  | 1  | 2  | 107  | 3.7  | 0.33  |
| Pput_3803 | 148549009 | 50S ribosomal protein L32                                            | 1  | 3  | 2  | 44   | 31.7 | 1.62  |
| Pput_3805 | 148549011 | Maf-like protein                                                     | 3  | 1  | 2  | 119  | 5.7  | 0.54  |
| Pput_3806 | 148549012 | signal peptide peptidase SppA, 36K type                              | 1  | 2  | 2  | 79   | 8.2  | 0.22  |
| Pput_3807 | 148549013 | HAD family hydrolase                                                 | 1  | 1  | 1  | 48   | 4.9  | 0.16  |
| Pput_3809 | 148549015 | ribonuclease                                                         | 15 | 14 | 12 | 1348 | 9    | 1.61  |
| Pput_3810 | 148549016 | UDP-N-acetylenolpyruvoylglucosamine reductase                        | 1  | 1  | 1  | 52   | 2.7  | 0.1   |
| Pput_3815 | 148549021 | biopolymer transport protein ExbD/TolR                               | 1  | 1  | 1  | 34   | 8.3  | 0.25  |
| Pput_3820 | 148549026 | ABC transporter related                                              | 2  | 2  | 2  | 158  | 9.7  | 0.34  |
| Pput_3821 | 148549027 | glutathione S-transferase domain-containing protein                  | 2  | 1  | 1  | 73   | 4.8  | 0.32  |
| Pput_3822 | 148549028 | acyl-CoA dehydrogenase                                               | 2  | 9  | 8  | 387  | 12.5 | 0.52  |
| Pput_3827 | 148549033 | outer membrane autotransporter                                       | 1  | 1  | 1  | 46   | 1.6  | 0.05  |
| Pput_3829 | 148549035 | YD repeat-/RHS repeat-containing protein                             | 1  | 1  | 1  | 28   | 0.6  | 0.03  |
| Pput_3835 | 148549041 | fimbrial biogenesis outer membrane usher protein                     | 2  | 1  | 1  | 53   | 0.6  | 0.08  |
| Pput_3839 | 148549045 | hypothetical protein Pput_3839                                       | 5  | 5  | 5  | 434  | 13.6 | 1.1   |
| Pput_3841 | 148549047 | glutathione peroxidase                                               | 6  | 3  | 3  | 330  | 18.5 | 2.68  |
| Pput_3842 | 148549048 | methionine sulfoxide reductase B                                     | 1  | 1  | 1  | 35   | 6.1  | 0.25  |
| Pput_3843 | 148549049 | aminotransferase AlaT                                                | 8  | 4  | 4  | 493  | 9.7  | 1.31  |
| Pput_3844 | 148549050 | heat shock protein HtpX                                              | 3  | 1  | 2  | 147  | 4.1  | 0.36  |
| Pput_3845 | 148549051 | thiopurine S-methyltransferase                                       | 3  | 3  | 4  | 190  | 14.8 | 0.84  |
| Pput_3847 | 148549053 | DEAD/DEAH box helicase domain-containing protein                     | 3  | 8  | 10 | 471  | 13.8 | 1.08  |
| Pput_3849 | 148549055 | phospho-2-dehydro-3-deoxyheptonate aldolase                          | 2  | 6  | 6  | 266  | 13.6 | 0.78  |
| Pput_3851 | 148549057 | LysR family transcriptional regulator                                | 2  | 1  | 1  | 59   | 3.9  | 0.24  |

|           |           |                                                                       |    |    |    |      |      |       |
|-----------|-----------|-----------------------------------------------------------------------|----|----|----|------|------|-------|
| Pput_3855 | 148549061 | OsmC family protein                                                   | 3  | 14 | 11 | 494  | 52.1 | 19.44 |
| Pput_3856 | 148549062 | elongation factor P                                                   | 9  | 5  | 6  | 1034 | 16.9 | 5.84  |
| Pput_3860 | 148549066 | 3-ketoacyl-(acyl-carrier-protein) reductase                           | 4  | 7  | 6  | 393  | 24.5 | 2.6   |
| Pput_3863 | 148549069 | hypothetical protein Pput_3863                                        | 1  | 1  | 1  | 61   | 6.3  | 0.29  |
| Pput_3865 | 148549071 | enoyl-CoA hydratase                                                   | 2  | 2  | 3  | 149  | 10.9 | 0.48  |
| Pput_3867 | 148549073 | Mg2+ transporter protein, CorA family protein                         | 4  | 1  | 2  | 219  | 3.4  | 0.4   |
| Pput_3868 | 148549074 | amidotransferase                                                      | 3  | 2  | 2  | 203  | 9.8  | 0.72  |
| Pput_3872 | 148549078 | sulfatase                                                             | 3  | 1  | 2  | 168  | 1.6  | 0.15  |
| Pput_3878 | 148549084 | hypothetical protein Pput_3878                                        | 1  | 2  | 2  | 44   | 9.6  | 0.43  |
| Pput_3880 | 148549086 | chorismate synthase                                                   | 4  | 6  | 7  | 427  | 18.7 | 1.25  |
| Pput_3884 | 148549090 | N5-glutamine S-adenosyl-L-methionine-dependent methyltransferase      | 3  | 4  | 5  | 292  | 10.9 | 1.12  |
| Pput_3885 | 148549091 | isochorismatase hydrolase                                             | 5  | 7  | 7  | 418  | 25   | 4.57  |
| Pput_3888 | 148549094 | GTP cyclohydrolase I                                                  | 6  | 3  | 4  | 267  | 9.9  | 2.29  |
| Pput_3890 | 148549096 | glutathione S-transferase domain-containing protein                   | 2  | 1  | 1  | 58   | 3    | 0.32  |
| Pput_3895 | 148549101 | alcohol dehydrogenase                                                 | 6  | 7  | 8  | 465  | 22.2 | 2.12  |
| Pput_3896 | 148549102 | orotidine 5--phosphate decarboxylase                                  | 1  | 1  | 1  | 48   | 4.7  | 0.15  |
| Pput_3897 | 148549103 | hypothetical protein Pput_3897                                        | 6  | 1  | 3  | 202  | 21.8 | 5.14  |
| Pput_3898 | 148549104 | helix-hairpin-helix repeat-containing competence protein ComEA        | 3  | 1  | 1  | 149  | 8.1  | 1.02  |
| Pput_3904 | 148549110 | lipopolysaccharide biosynthesis protein                               | 1  | 3  | 3  | 116  | 9.8  | 0.3   |
| Pput_3908 | 148549114 | 2-dehydro-3-deoxyphosphooctonate aldolase                             | 1  | 1  | 1  | 26   | 2.9  | 0.12  |
| Pput_3918 | 148549124 | phytanoyl-CoA dioxygenase                                             | 1  | 1  | 1  | 25   | 2.3  | 0.1   |
| Pput_3921 | 148549127 | Beta-ketoacyl synthase-like protein                                   | 1  | 1  | 1  | 25   | 0.3  | 0.01  |
| Pput_3922 | 148549128 | glycosyl transferase family protein                                   | 3  | 1  | 1  | 122  | 2.9  | 0.33  |
| Pput_3923 | 148549129 | dTDP-4-dehydrothamnose 3,5-epimerase                                  | 1  | 1  | 1  | 49   | 6.1  | 0.19  |
| Pput_3925 | 148549131 | ABC transporter related                                               | 1  | 1  | 1  | 27   | 1.8  | 0.07  |
| Pput_3926 | 148549132 | glycosyl transferase family protein                                   | 1  | 1  | 1  | 70   | 0.8  | 0.02  |
| Pput_3927 | 148549133 | hypothetical protein Pput_3927                                        | 1  | 1  | 1  | 31   | 1.6  | 0.05  |
| Pput_3928 | 148549134 | DegT/DnrJ/EryC1/StrS aminotransferase                                 | 1  | 1  | 1  | 60   | 2.7  | 0.09  |
| Pput_3929 | 148549135 | glycosyl transferase family protein                                   | 2  | 1  | 1  | 81   | 3.2  | 0.22  |
| Pput_3930 | 148549136 | WxcM domain-containing protein                                        | 2  | 3  | 3  | 91   | 10.4 | 0.47  |
| Pput_3933 | 148549139 | glucose-1-phosphate thymidyltransferase                               | 4  | 5  | 4  | 257  | 10.1 | 1.27  |
| Pput_3935 | 148549141 | dTDP-glucose 4,6-dehydratase                                          | 2  | 1  | 2  | 79   | 2.8  | 0.18  |
| Pput_3938 | 148549144 | NAD-dependent epimerase/dehydratase                                   | 2  | 3  | 3  | 103  | 9.2  | 0.47  |
| Pput_3941 | 148549147 | integration host factor subunit beta                                  | 1  | 1  | 1  | 31   | 10.2 | 0.36  |
| Pput_3942 | 148549148 | 30S ribosomal protein S1                                              | 6  | 16 | 16 | 1391 | 25.8 | 4.44  |
| Pput_3943 | 148549149 | cytidylate kinase                                                     | 1  | 2  | 2  | 66   | 8    | 0.34  |
| Pput_3944 | 148549150 | 3-phosphoshikimate 1-carboxyvinyltransferase                          | 5  | 8  | 9  | 509  | 8.3  | 0.78  |
| Pput_3945 | 148549151 | chorismate mutase                                                     | 2  | 8  | 7  | 337  | 19.5 | 1.32  |
| Pput_3946 | 148549152 | phosphoserine aminotransferase                                        | 2  | 8  | 7  | 277  | 15.7 | 1.45  |
| Pput_3947 | 148549153 | DNA gyrase subunit A                                                  | 6  | 13 | 12 | 857  | 10.4 | 1.15  |
| Pput_3948 | 148549154 | methylthioribose-1-phosphate isomerase                                | 2  | 1  | 2  | 80   | 3.1  | 0.2   |
| Pput_3949 | 148549155 | 3-demethylubiquinone-9 3-methyltransferase                            | 2  | 3  | 4  | 211  | 13.4 | 1.22  |
| Pput_3950 | 148549156 | phosphoglycolate phosphatase                                          | 1  | 1  | 1  | 44   | 6.3  | 0.15  |
| Pput_3951 | 148549157 | short chain dehydrogenase                                             | 2  | 4  | 4  | 173  | 19.1 | 0.86  |
| Pput_3955 | 148549161 | DSBA oxidoreductase                                                   | 2  | 1  | 1  | 137  | 5.2  | 0.34  |
| Pput_3959 | 148549165 | fumarate hydratase                                                    | 2  | 3  | 4  | 151  | 7.3  | 0.48  |
| Pput_3960 | 148549166 | hypothetical protein Pput_3960                                        | 1  | 1  | 1  | 27   | 2.2  | 0.08  |
| Pput_3962 | 148549168 | hypothetical protein Pput_3962                                        | 3  | 11 | 10 | 434  | 25.6 | 1.26  |
| Pput_3969 | 148549175 | short chain dehydrogenase                                             | 2  | 2  | 2  | 94   | 8.9  | 0.4   |
| Pput_3976 | 148549182 | acetate permease                                                      | 47 | 5  | 5  | 4233 | 7.2  | 6.06  |
| Pput_3977 | 148549183 | hypothetical protein Pput_3977                                        | 5  | 1  | 2  | 224  | 12.6 | 1.7   |
| Pput_3978 | 148549184 | substrate-binding region of ABC-type glycine betaine transport system | 3  | 4  | 4  | 193  | 12.2 | 0.96  |
| Pput_3981 | 148549187 | hypothetical protein Pput_3981                                        | 1  | 1  | 1  | 79   | 2.8  | 0.08  |
| Pput_3982 | 148549188 | VacJ family lipoprotein                                               | 3  | 2  | 3  | 107  | 7.6  | 0.5   |
| Pput_3984 | 148549190 | lipid A biosynthesis lauroyl acyltransferase                          | 1  | 1  | 1  | 35   | 2.3  | 0.1   |
| Pput_3985 | 148549191 | septum formation inhibitor                                            | 2  | 2  | 2  | 107  | 7.1  | 0.44  |
| Pput_3986 | 148549192 | septum site-determining protein MinD                                  | 6  | 3  | 8  | 456  | 14.4 | 2.07  |
| Pput_3987 | 148549193 | cell division topological specificity factor MinE                     | 2  | 2  | 2  | 95   | 20.2 | 1.41  |
| Pput_3989 | 148549195 | putative aminopeptidase 2                                             | 2  | 4  | 5  | 131  | 8.9  | 0.51  |
| Pput_3992 | 148549198 | GntR family transcriptional regulator                                 | 1  | 1  | 1  | 34   | 3.8  | 0.14  |
| Pput_3993 | 148549199 | ABC-type Fe3+ transport system periplasmic component-like protein     | 3  | 4  | 5  | 123  | 8.2  | 0.65  |
| Pput_3994 | 148549200 | type I phosphodiesterase/nucleotide pyrophosphatase                   | 1  | 1  | 1  | 55   | 3.3  | 0.12  |
| Pput_3997 | 148549203 | ABC transporter related                                               | 3  | 4  | 7  | 177  | 12.8 | 0.92  |
| Pput_3998 | 148549204 | HAD family hydrolase                                                  | 1  | 2  | 2  | 73   | 12.9 | 0.33  |
| Pput_3999 | 148549205 | quinone oxidoreductase putative, PIG3                                 | 3  | 5  | 5  | 278  | 11.6 | 1.44  |
| Pput_4000 | 148549206 | carboxyl-terminal protease                                            | 3  | 11 | 11 | 394  | 14.9 | 0.86  |
| Pput_4004 | 148549210 | hypothetical protein Pput_4004                                        | 1  | 1  | 1  | 28   | 6.9  | 0.24  |
| Pput_4005 | 148549211 | peptidylprolyl isomerase, FKBP-type                                   | 4  | 3  | 3  | 172  | 12   | 1.08  |
| Pput_4006 | 148549212 | LysR family transcriptional regulator                                 | 3  | 3  | 3  | 176  | 11.3 | 0.71  |
| Pput_4016 | 148549222 | molybdopterin oxidoreductase                                          | 3  | 1  | 3  | 87   | 1    | 0.09  |
| Pput_4018 | 148549224 | recombination associated protein                                      | 7  | 5  | 4  | 487  | 14.5 | 1.5   |
| Pput_4023 | 148549229 | GntR family transcriptional regulator                                 | 1  | 1  | 1  | 36   | 4.1  | 0.14  |
| Pput_4025 | 148549231 | integral membrane sensor hybrid histidine kinase                      | 5  | 1  | 2  | 239  | 1    | 0.15  |
| Pput_4030 | 148549236 | membrane protein involved in aromatic hydrocarbon degradation         | 3  | 7  | 6  | 681  | 17.6 | 1.54  |
| Pput_4032 | 148549238 | hypothetical protein Pput_4032                                        | 1  | 1  | 1  | 28   | 10.5 | 0.42  |
| Pput_4033 | 148549239 | glutathione peroxidase                                                | 2  | 1  | 1  | 90   | 5.5  | 0.38  |
| Pput_4047 | 148549253 | cob(I)yrinic acid a,c-diamide adenosyltransferase                     | 3  | 3  | 3  | 180  | 16.3 | 0.93  |
| Pput_4050 | 148549256 | DNA replication initiation factor                                     | 2  | 5  | 5  | 211  | 13.2 | 1.01  |
| Pput_4052 | 148549258 | hypothetical protein Pput_4052                                        | 2  | 3  | 4  | 124  | 7.6  | 0.66  |
| Pput_4053 | 148549259 | phosphoribosylaminoimidazole synthetase                               | 2  | 2  | 2  | 96   | 6    | 0.31  |
| Pput_4055 | 148549261 | hypothetical protein Pput_4055                                        | 10 | 4  | 9  | 564  | 19.1 | 3.84  |
| Pput_4062 | 148549268 | (p)ppGpp synthetase I, SpoT/RelA                                      | 2  | 8  | 9  | 229  | 11.3 | 0.45  |
| Pput_4063 | 148549269 | 23S rRNA 5-methyluridine methyltransferase                            | 2  | 3  | 5  | 154  | 7.1  | 0.4   |
| Pput_4064 | 148549270 | cysteine synthase B                                                   | 2  | 2  | 3  | 87   | 8    | 0.35  |
| Pput_4067 | 148549273 | multi-sensor hybrid histidine kinase                                  | 1  | 1  | 1  | 33   | 1.4  | 0.04  |
| Pput_4068 | 148549274 | D-isomer specific 2-hydroxyacid dehydrogenase, NAD-binding            | 2  | 1  | 1  | 129  | 4.3  | 0.2   |
| Pput_4069 | 148549275 | hypothetical protein Pput_4069                                        | 1  | 1  | 1  | 38   | 6.9  | 0.24  |
| Pput_4073 | 148549279 | flavodoxin/nitric oxide synthase                                      | 3  | 5  | 5  | 296  | 20.9 | 2.32  |
| Pput_4075 | 148549281 | 3-methyladenine DNA glycosylase-like protein                          | 1  | 1  | 1  | 42   | 4.5  | 0.15  |

|           |           |                                                              |   |    |    |      |      |       |
|-----------|-----------|--------------------------------------------------------------|---|----|----|------|------|-------|
| Pput_4078 | 148549284 | hypothetical protein Pput_4078                               | 1 | 1  | 1  | 29   | 4.9  | 0.19  |
| Pput_4079 | 148549285 | oxidoreductase FAD/NAD(P)-binding subunit                    | 2 | 3  | 3  | 96   | 7.3  | 0.7   |
| Pput_4082 | 148549288 | two component LuxR family transcriptional regulator          | 3 | 5  | 5  | 498  | 22.7 | 2.51  |
| Pput_4083 | 148549289 | DTW domain-containing protein                                | 1 | 1  | 1  | 28   | 5.5  | 0.14  |
| Pput_4084 | 148549290 | hypothetical protein Pput_4084                               | 3 | 6  | 5  | 319  | 38.8 | 4.44  |
| Pput_4087 | 148549293 | recombination regulator RecX                                 | 1 | 1  | 1  | 29   | 6.4  | 0.21  |
| Pput_4088 | 148549294 | recombinase A                                                | 2 | 6  | 6  | 260  | 18   | 0.82  |
| Pput_4089 | 148549295 | CinA domain-containing protein                               | 1 | 1  | 1  | 29   | 6.9  | 0.23  |
| Pput_4095 | 148549301 | hypothetical protein Pput_4095                               | 3 | 1  | 1  | 99   | 11   | 0.66  |
| Pput_4112 | 148549318 | hypothetical protein Pput_4112                               | 1 | 1  | 1  | 28   | 4.8  | 0.11  |
| Pput_4130 | 148549336 | phage replication protein O                                  | 1 | 1  | 1  | 27   | 10.5 | 0.12  |
| Pput_4131 | 148549337 | putative phage repressor                                     | 2 | 3  | 4  | 177  | 12.1 | 0.7   |
| Pput_4152 | 148549358 | DNA mismatch repair protein MutS                             | 2 | 2  | 3  | 101  | 2.6  | 0.12  |
| Pput_4155 | 148549361 | peptidase M23B                                               | 4 | 2  | 6  | 327  | 18.3 | 1.39  |
| Pput_4156 | 148549362 | protein-L-isoaspartate O-methyltransferase                   | 3 | 2  | 3  | 125  | 9.4  | 0.63  |
| Pput_4157 | 148549363 | stationary phase survival protein SurE                       | 2 | 1  | 1  | 92   | 3.2  | 0.28  |
| Pput_4158 | 148549364 | tRNA pseudouridine synthase D                                | 1 | 4  | 3  | 123  | 9.7  | 0.32  |
| Pput_4159 | 148549365 | 2-C-methyl-D-erythritol 2,4-cyclodiphosphate synthase        | 1 | 3  | 3  | 34   | 20.4 | 0.86  |
| Pput_4160 | 148549366 | S-formylglutathione hydrolase                                | 2 | 1  | 1  | 61   | 2.8  | 0.24  |
| Pput_4161 | 148549367 | S-(hydroxymethyl)glutathione dehydrogenase                   | 2 | 4  | 6  | 286  | 13.5 | 0.63  |
| Pput_4165 | 148549371 | phosphopyruvate hydratase                                    | 3 | 11 | 12 | 1015 | 26.6 | 2.72  |
| Pput_4166 | 148549372 | 2-dehydro-3-deoxyphosphooctonate aldolase                    | 2 | 2  | 3  | 134  | 7.8  | 0.52  |
| Pput_4167 | 148549373 | CTP synthetase                                               | 6 | 15 | 16 | 1123 | 22.1 | 3.42  |
| Pput_4169 | 148549375 | tRNA(Ile)-lysine synthetase                                  | 1 | 1  | 1  | 44   | 2.1  | 0.08  |
| Pput_4170 | 148549376 | acetyl-CoA carboxylase carboxyltransferase subunit alpha     | 3 | 9  | 8  | 754  | 24.6 | 2.42  |
| Pput_4171 | 148549377 | DNA polymerase III subunit alpha                             | 3 | 2  | 3  | 125  | 1.6  | 0.12  |
| Pput_4174 | 148549380 | UDP-N-acetylglucosamine acyltransferase                      | 1 | 2  | 2  | 55   | 10.1 | 0.29  |
| Pput_4175 | 148549381 | (3R)-hydroxymyristoyl-ACP dehydratase                        | 1 | 2  | 2  | 51   | 13.7 | 0.52  |
| Pput_4176 | 148549382 | UDP-3-O-[3-hydroxymyristoyl] glucosamine N-acyltransferase   | 1 | 1  | 1  | 56   | 3.4  | 0.1   |
| Pput_4177 | 148549383 | outer membrane chaperone Skp (OmpH)                          | 5 | 5  | 6  | 305  | 24.6 | 3.17  |
| Pput_4178 | 148549384 | surface antigen (D15)                                        | 2 | 6  | 7  | 239  | 9.3  | 0.33  |
| Pput_4180 | 148549386 | 1-deoxy-D-xylulose 5-phosphate reductoisomerase              | 1 | 1  | 1  | 26   | 3    | 0.09  |
| Pput_4182 | 148549388 | undecaprenyl diphosphate synthase                            | 1 | 1  | 1  | 28   | 4    | 0.13  |
| Pput_4183 | 148549389 | ribosome recycling factor                                    | 4 | 3  | 6  | 205  | 16.8 | 2.22  |
| Pput_4184 | 148549390 | uridylate kinase                                             | 6 | 2  | 1  | 363  | 4.5  | 1.35  |
| Pput_4185 | 148549391 | elongation factor Ts                                         | 8 | 15 | 17 | 1117 | 38.7 | 9.73  |
| Pput_4186 | 148549392 | 30S ribosomal protein S2                                     | 8 | 30 | 20 | 1817 | 64.1 | 29.24 |
| Pput_4187 | 148549393 | methionine aminopeptidase                                    | 6 | 3  | 6  | 295  | 12.3 | 1.39  |
| Pput_4188 | 148549394 | PII uridylyl-transferase                                     | 2 | 1  | 2  | 74   | 1    | 0.08  |
| Pput_4189 | 148549395 | succinyl-diaminopimelate transaminase                        | 1 | 1  | 1  | 27   | 4.5  | 0.08  |
| Pput_4190 | 148549396 | Na <sup>+</sup> /H <sup>+</sup> antiporter                   | 2 | 1  | 1  | 58   | 2    | 0.12  |
| Pput_4194 | 148549400 | tetrahydridipicolinate N-succinyltransferase-like protein    | 4 | 7  | 6  | 486  | 20.3 | 1.82  |
| Pput_4195 | 148549401 | aminotransferase, class V                                    | 1 | 1  | 1  | 37   | 2.7  | 0.09  |
| Pput_4196 | 148549402 | Fe-S metabolism associated SufE                              | 1 | 1  | 1  | 25   | 4.4  | 0.25  |
| Pput_4197 | 148549403 | UBA/THIF-type NAD/FAD binding protein                        | 1 | 1  | 1  | 56   | 3.3  | 0.13  |
| Pput_4198 | 148549404 | glycosyl transferase family protein                          | 4 | 2  | 3  | 325  | 3.2  | 0.24  |
| Pput_4199 | 148549405 | succinyl-diaminopimelate desuccinylase                       | 1 | 1  | 1  | 65   | 3.7  | 0.09  |
| Pput_4202 | 148549408 | cold-shock DNA-binding domain-containing protein             | 2 | 1  | 2  | 78   | 15.9 | 1.06  |
| Pput_4203 | 148549409 | glycerol-3-phosphate acyltransferase                         | 3 | 3  | 4  | 172  | 3.7  | 0.2   |
| Pput_4208 | 148549414 | TetR family transcriptional regulator                        | 2 | 1  | 1  | 86   | 3.8  | 0.32  |
| Pput_4212 | 148549418 | PEP phosphonmutase and related enzymes-like protein          | 2 | 1  | 1  | 70   | 3.6  | 0.26  |
| Pput_4216 | 148549422 | adenylate kinase                                             | 3 | 13 | 10 | 578  | 50.9 | 6.58  |
| Pput_4217 | 148549423 | phosphoenolpyruvate carboxylase                              | 3 | 12 | 12 | 498  | 11.7 | 0.84  |
| Pput_4219 | 148549425 | hypothetical protein Pput_4219                               | 2 | 1  | 2  | 77   | 7.6  | 0.56  |
| Pput_4220 | 148549426 | OmpA/MotB domain-containing protein                          | 2 | 3  | 3  | 302  | 11   | 0.9   |
| Pput_4221 | 148549427 | hypothetical protein Pput_4221                               | 1 | 1  | 1  | 36   | 9.3  | 0.33  |
| Pput_4222 | 148549428 | alpha/beta fold family hydrolase-like protein                | 1 | 2  | 2  | 48   | 7    | 0.25  |
| Pput_4223 | 148549429 | hypothetical protein Pput_4223                               | 1 | 2  | 2  | 79   | 5    | 0.16  |
| Pput_4224 | 148549430 | hypothetical protein Pput_4224                               | 3 | 1  | 1  | 205  | 11   | 0.57  |
| Pput_4225 | 148549431 | TetR family transcriptional regulator                        | 2 | 2  | 2  | 120  | 9.4  | 0.46  |
| Pput_4226 | 148549432 | lysyl-tRNA synthetase                                        | 3 | 13 | 11 | 553  | 23.8 | 2.12  |
| Pput_4227 | 148549433 | peptide chain release factor 2                               | 2 | 3  | 3  | 143  | 11.8 | 0.48  |
| Pput_4228 | 148549434 | response regulator receiver modulated diguanylate cyclase    | 2 | 4  | 4  | 247  | 17.7 | 0.68  |
| Pput_4229 | 148549435 | chemotaxis-specific methylesterase                           | 1 | 1  | 1  | 32   | 3.6  | 0.1   |
| Pput_4234 | 148549440 | methyl-accepting chemotaxis sensory transducer               | 5 | 4  | 7  | 293  | 7.6  | 0.59  |
| Pput_4236 | 148549442 | extracellular solute-binding protein                         | 4 | 5  | 7  | 422  | 9.9  | 1.22  |
| Pput_4237 | 148549443 | spermidine/putrescine ABC transporter ATPase subunit         | 3 | 8  | 6  | 246  | 18.4 | 1.25  |
| Pput_4240 | 161936354 | gamma-aminobutyraldehyde dehydrogenase                       | 2 | 7  | 7  | 429  | 19.4 | 1.06  |
| Pput_4243 | 148549449 | NADH:flavin oxidoreductase/NADH oxidase                      | 2 | 21 | 18 | 792  | 59.5 | 5.21  |
| Pput_4245 | 148549451 | YaeQ family protein                                          | 1 | 1  | 1  | 47   | 5.6  | 0.18  |
| Pput_4246 | 148549452 | L-carnitine dehydratase/bile acid-inducible protein F        | 1 | 1  | 1  | 42   | 3    | 0.09  |
| Pput_4247 | 148549453 | hypothetical protein Pput_4247                               | 1 | 1  | 1  | 50   | 3.8  | 0.11  |
| Pput_4250 | 148549456 | threonine synthase                                           | 2 | 8  | 7  | 316  | 18.6 | 0.97  |
| Pput_4251 | 148549457 | homoserine dehydrogenase                                     | 3 | 5  | 6  | 235  | 9.7  | 0.81  |
| Pput_4254 | 148549460 | sodium/hydrogen exchanger                                    | 2 | 1  | 2  | 66   | 1.7  | 0.12  |
| Pput_4255 | 148549461 | thioesterase superfamily protein                             | 1 | 1  | 1  | 37   | 5.9  | 0.26  |
| Pput_4256 | 148549462 | 50S ribosomal protein L19                                    | 8 | 14 | 15 | 1287 | 52.6 | 61.27 |
| Pput_4257 | 148549463 | tRNA (guanine-N(1)-)-methyltransferase                       | 1 | 1  | 1  | 36   | 3.2  | 0.13  |
| Pput_4259 | 148549465 | 30S ribosomal protein S16                                    | 2 | 6  | 4  | 442  | 45.8 | 5.29  |
| Pput_4260 | 148549466 | signal recognition particle protein                          | 4 | 4  | 6  | 301  | 7.2  | 0.66  |
| Pput_4262 | 148549468 | transporter-associated region                                | 1 | 1  | 1  | 60   | 2.2  | 0.08  |
| Pput_4264 | 148549470 | phosphoribosylglycinamide formyltransferase 2                | 4 | 13 | 9  | 791  | 24.2 | 2.72  |
| Pput_4267 | 148549473 | hexapeptide repeat-containing transferase                    | 2 | 2  | 2  | 124  | 14.4 | 0.67  |
| Pput_4268 | 148549474 | NUDIX hydrolase                                              | 2 | 1  | 2  | 62   | 5.7  | 0.32  |
| Pput_4269 | 148549475 | NUDIX hydrolase                                              | 1 | 1  | 1  | 49   | 4.9  | 0.18  |
| Pput_4277 | 148549483 | Pyrrolo-quinoline quinone                                    | 2 | 4  | 4  | 180  | 4.5  | 0.22  |
| Pput_4278 | 148549484 | ATP-dependent protease La                                    | 4 | 9  | 12 | 467  | 10.2 | 0.9   |
| Pput_4283 | 148549489 | two component heavy metal response transcriptional regulator | 1 | 1  | 1  | 29   | 3.6  | 0.15  |
| Pput_4285 | 148549491 | pyridoxine 5'-phosphate synthase                             | 3 | 10 | 6  | 910  | 29.6 | 4.49  |

|           |           |                                                                                     |    |    |    |      |      |       |
|-----------|-----------|-------------------------------------------------------------------------------------|----|----|----|------|------|-------|
| Pput_4287 | 148549493 | GTP-binding protein Era                                                             | 3  | 2  | 4  | 140  | 6.3  | 0.57  |
| Pput_4288 | 148549494 | ribonuclease III                                                                    | 3  | 5  | 4  | 197  | 15.3 | 1.04  |
| Pput_4289 | 148549495 | signal peptidase I                                                                  | 2  | 3  | 3  | 139  | 14.1 | 0.52  |
| Pput_4290 | 148549496 | GTP-binding protein LepA                                                            | 6  | 4  | 4  | 331  | 5.2  | 0.66  |
| Pput_4291 | 148549497 | protease Do                                                                         | 5  | 8  | 8  | 436  | 12.2 | 1.08  |
| Pput_4292 | 148549498 | sigma E regulatory protein, MucB/RseB                                               | 3  | 3  | 5  | 371  | 10   | 1.09  |
| Pput_4294 | 148549500 | RNA polymerase sigma factor AlgU                                                    | 2  | 1  | 2  | 68   | 5.2  | 0.34  |
| Pput_4295 | 148549501 | L-aspartate oxidase                                                                 | 2  | 2  | 2  | 131  | 3.7  | 0.19  |
| Pput_4298 | 148549504 | glycine cleavage T protein (aminomethyl transferase)                                | 2  | 2  | 3  | 172  | 7.3  | 0.62  |
| Pput_4301 | 148549507 | two component transcriptional regulator                                             | 2  | 1  | 2  | 109  | 4    | 0.3   |
| Pput_4302 | 148549508 | outer membrane porin                                                                | 1  | 1  | 1  | 31   | 2.3  | 0.08  |
| Pput_4303 | 148549509 | hypothetical protein Pput_4303                                                      | 1  | 1  | 1  | 53   | 3.1  | 0.11  |
| Pput_4308 | 148549514 | uracil-DNA glycosylase                                                              | 1  | 1  | 1  | 49   | 3.5  | 0.15  |
| Pput_4309 | 148549515 | enoyl-CoA hydratase/isomerase                                                       | 7  | 6  | 7  | 517  | 17.7 | 2.33  |
| Pput_4320 | 148549525 | glycoside hydrolase family 3 protein                                                | 2  | 1  | 2  | 122  | 1.8  | 0.08  |
| Pput_4328 | 148549533 | AraC-like transcriptional regulator                                                 | 2  | 5  | 6  | 125  | 17.6 | 0.79  |
| Pput_4332 | 148549537 | NAD-dependent epimerase/dehydratase                                                 | 3  | 7  | 6  | 363  | 23.5 | 2.86  |
| Pput_4334 | 148549539 | PEP phosphonmutase and related enzymes-like protein                                 | 5  | 2  | 2  | 284  | 8.3  | 0.73  |
| Pput_4335 | 148549540 | EmrB/QacA family drug resistance transporter                                        | 1  | 1  | 1  | 30   | 2.1  | 0.07  |
| Pput_4336 | 148549541 | TetR family transcriptional regulator                                               | 1  | 3  | 3  | 68   | 14.3 | 0.56  |
| Pput_4337 | 148549542 | RND family efflux transporter MFP subunit                                           | 3  | 2  | 3  | 135  | 9.4  | 0.47  |
| Pput_4338 | 148549543 | hydrophobe/amphiphile efflux-1 (HAE1) family protein                                | 9  | 2  | 5  | 395  | 2.1  | 0.43  |
| Pput_4339 | 148549544 | RND efflux system outer membrane lipoprotein                                        | 6  | 5  | 7  | 634  | 12.2 | 1.28  |
| Pput_4341 | 148549546 | hypothetical protein Pput_4341                                                      | 2  | 1  | 1  | 109  | 6.9  | 0.4   |
| Pput_4343 | 148549548 | 3-oxoadipate enol-lactonase                                                         | 2  | 5  | 6  | 302  | 20.5 | 1.7   |
| Pput_4344 | 148549549 | 3-carboxy-cis,cis-muconate cycloisomerase                                           | 2  | 1  | 2  | 68   | 2.9  | 0.16  |
| Pput_4345 | 148549550 | major facilitator superfamily metabolite/H(+) symporter                             | 6  | 1  | 1  | 232  | 2.6  | 0.48  |
| Pput_4348 | 148549553 | beta-ketoadipate pathway transcription regulator                                    | 3  | 4  | 4  | 329  | 16.2 | 1.08  |
| Pput_4350 | 148549555 | phosphate transporter                                                               | 1  | 1  | 1  | 26   | 2.4  | 0.07  |
| Pput_4351 | 148549556 | protein of unknown function DUF853, NPT hydrolase putative                          | 5  | 6  | 6  | 342  | 10.2 | 0.85  |
| Pput_4352 | 148549557 | methyl-accepting chemotaxis sensory transducer                                      | 3  | 3  | 3  | 293  | 6.4  | 0.33  |
| Pput_4356 | 148549561 | formyltetrahydrofolate deformylase                                                  | 4  | 5  | 4  | 418  | 18.4 | 1.32  |
| Pput_4357 | 148549562 | hypothetical protein Pput_4357                                                      | 3  | 7  | 6  | 372  | 39.2 | 8.21  |
| Pput_4359 | 148549564 | exonuclease I                                                                       | 2  | 1  | 2  | 71   | 1.7  | 0.14  |
| Pput_4362 | 148549567 | pyruvate kinase                                                                     | 4  | 12 | 10 | 562  | 22.9 | 1.84  |
| Pput_4363 | 148549568 | chaperonin GroEL                                                                    | 53 | 62 | 35 | 8877 | 42.5 | 48.08 |
| Pput_4364 | 148549569 | co-chaperonin GroES                                                                 | 4  | 4  | 4  | 249  | 41.2 | 5.04  |
| Pput_4365 | 148549570 | FxsA                                                                                | 6  | 1  | 1  | 342  | 7.8  | 1.38  |
| Pput_4366 | 148549571 | pyridoxamine 5--phosphate oxidase-related, FMN-binding                              | 1  | 3  | 3  | 108  | 12.8 | 0.48  |
| Pput_4372 | 148549577 | putative nucleotide-binding protein                                                 | 5  | 4  | 6  | 319  | 28.6 | 2.51  |
| Pput_4373 | 148549578 | 2-dehydropantoate 2-reductase                                                       | 1  | 1  | 1  | 32   | 4.6  | 0.11  |
| Pput_4374 | 148549579 | multi-sensor signal transduction histidine kinase                                   | 1  | 3  | 3  | 74   | 4.4  | 0.16  |
| Pput_4375 | 148549580 | ATP--cobalamin adenosyltransferase                                                  | 2  | 1  | 1  | 119  | 5.3  | 0.38  |
| Pput_4377 | 148549582 | glutathione S-transferase domain-containing protein                                 | 2  | 2  | 3  | 169  | 13.3 | 0.93  |
| Pput_4378 | 148549583 | bifunctional ornithine acetyltransferase/N-acetylglutamate synthase protein         | 7  | 2  | 5  | 588  | 7.7  | 1.01  |
| Pput_4379 | 148549584 | preprotein translocase subunit SecA                                                 | 13 | 10 | 15 | 981  | 9.4  | 1.57  |
| Pput_4381 | 148549586 | UDP-3-O-[3-hydroxymyristoyl] N-acetylglucosamine deacetylase                        | 2  | 11 | 11 | 367  | 25.4 | 3.15  |
| Pput_4382 | 148549587 | cell division protein FtsZ                                                          | 2  | 6  | 5  | 287  | 13.3 | 0.86  |
| Pput_4383 | 148549588 | cell division protein FtsA                                                          | 3  | 8  | 11 | 757  | 22.9 | 2.43  |
| Pput_4385 | 148549590 | D-alanine--D-alanine ligase                                                         | 5  | 2  | 4  | 289  | 6.3  | 1.17  |
| Pput_4386 | 148549591 | UDP-N-acetylmuramate--L-alanine ligase                                              | 3  | 9  | 6  | 424  | 13.7 | 1.08  |
| Pput_4387 | 148549592 | undecaprenyldiphospho-muramoylpentapeptide beta-N- acetylglucosaminyltransferase    | 2  | 2  | 1  | 94   | 3.9  | 0.3   |
| Pput_4389 | 148549594 | UDP-N-acetylmuramoyl-L-alanyl-D-glutamate synthetase                                | 1  | 3  | 3  | 84   | 6    | 0.25  |
| Pput_4390 | 148549595 | phospho-N-acetylmuramoyl-pentapeptide-transferase                                   | 5  | 1  | 1  | 135  | 2.8  | 0.5   |
| Pput_4391 | 148549596 | UDP-N-acetylmuramoylalanyl-D-glutamyl-2,6-diaminopimelate--D-alanyl-D-alanyl ligase | 3  | 3  | 5  | 156  | 8.8  | 0.42  |
| Pput_4392 | 148549597 | UDP-N-acetylmuramoylalanyl-D-glutamate--2,6-diaminopimelate ligase                  | 2  | 6  | 7  | 344  | 15.1 | 0.8   |
| Pput_4394 | 148549599 | cell division protein FtsL                                                          | 1  | 1  | 1  | 32   | 9.3  | 0.37  |
| Pput_4395 | 148549600 | S-adenosyl-methyltransferase MraW                                                   | 4  | 6  | 8  | 387  | 16.2 | 1.39  |
| Pput_4398 | 148549602 | uroporphyrin-III C/tetrapyrrole methyltransferase                                   | 3  | 7  | 6  | 341  | 19.9 | 1.6   |
| Pput_4399 | 148549603 | LppC family lipoprotein                                                             | 5  | 11 | 12 | 887  | 18.5 | 1.58  |
| Pput_4402 | 148549606 | transport-associated                                                                | 4  | 10 | 9  | 633  | 40.6 | 5.97  |
| Pput_4404 | 148549608 | glutathione S-transferase domain-containing protein                                 | 2  | 1  | 1  | 139  | 4.8  | 0.32  |
| Pput_4405 | 148549609 | ubiquinol--cytochrome c reductase, cytochrome c1                                    | 10 | 5  | 6  | 642  | 19.7 | 2.96  |
| Pput_4406 | 148549610 | cytochrome b/b6 domain-containing protein                                           | 9  | 1  | 1  | 322  | 2    | 0.72  |
| Pput_4407 | 148549611 | ubiquinol-cytochrome c reductase, iron-sulfur subunit                               | 13 | 5  | 9  | 866  | 27.4 | 7.8   |
| Pput_4408 | 148549612 | 30S ribosomal protein S9                                                            | 5  | 29 | 9  | 1094 | 50   | 51.44 |
| Pput_4409 | 148549613 | 50S ribosomal protein L13                                                           | 3  | 13 | 12 | 420  | 51.4 | 16.55 |
| Pput_4410 | 148549614 | aldo/keto reductase                                                                 | 3  | 9  | 7  | 579  | 23.7 | 1.49  |
| Pput_4412 | 148549616 | AFG1 family ATPase                                                                  | 1  | 4  | 3  | 83   | 7.7  | 0.4   |
| Pput_4413 | 148549617 | tryptophanyl-tRNA synthetase                                                        | 4  | 9  | 9  | 641  | 15.1 | 1.45  |
| Pput_4414 | 148549618 | alpha/beta fold family hydrolase-like protein                                       | 2  | 2  | 1  | 93   | 4.7  | 0.34  |
| Pput_4415 | 148549619 | hypothetical protein Pput_4415                                                      | 10 | 2  | 4  | 610  | 9.7  | 3.7   |
| Pput_4416 | 148549620 | methionine gamma-lyase                                                              | 1  | 1  | 1  | 59   | 2.5  | 0.09  |
| Pput_4421 | 148549623 | bifunctional sulfate adenyllyltransferase subunit 1/adenyllysulfate kinase protein  | 7  | 9  | 8  | 546  | 10.1 | 1     |
| Pput_4422 | 148549624 | sulfate adenyllyltransferase subunit 2                                              | 3  | 2  | 2  | 118  | 6.6  | 0.44  |
| Pput_4423 | 148549625 | hypothetical protein Pput_4423                                                      | 2  | 1  | 1  | 110  | 4.8  | 0.28  |
| Pput_4424 | 148549626 | 2-alkenal reductase                                                                 | 2  | 2  | 1  | 64   | 2.3  | 0.18  |
| Pput_4425 | 148549627 | ABC transporter related                                                             | 4  | 9  | 8  | 418  | 22   | 3.41  |
| Pput_4427 | 148549629 | polar amino acid ABC transporter, inner membrane subunit                            | 8  | 4  | 5  | 413  | 11.7 | 1.12  |
| Pput_4428 | 148549630 | extracellular solute-binding protein                                                | 19 | 34 | 29 | 4814 | 56.7 | 60.84 |
| Pput_4430 | 148549632 | ATP-dependent RNA helicase RhlB                                                     | 3  | 1  | 2  | 120  | 2.3  | 0.21  |
| Pput_4431 | 148549633 | molybdopterin biosynthesis MoaE protein                                             | 2  | 1  | 1  | 55   | 6.1  | 0.48  |
| Pput_4433 | 148549635 | molybdenum cofactor biosynthesis protein C                                          | 3  | 1  | 3  | 81   | 6.2  | 0.54  |
| Pput_4434 | 148549636 | PhoH family protein                                                                 | 2  | 4  | 3  | 210  | 9.3  | 0.47  |
| Pput_4450 | 148549652 | hypothetical protein Pput_4450                                                      | 3  | 4  | 4  | 237  | 27.9 | 1.96  |
| Pput_4451 | 148549653 | short chain dehydrogenase                                                           | 2  | 1  | 1  | 148  | 4.4  | 0.26  |
| Pput_4460 | 148549662 | RND efflux system outer membrane lipoprotein                                        | 1  | 1  | 1  | 28   | 2    | 0.07  |
| Pput_4461 | 148549663 | LysR family transcriptional regulator                                               | 4  | 1  | 2  | 205  | 3.8  | 0.56  |
| Pput_4462 | 148549664 | D-isomer specific 2-hydroxyacid dehydrogenase, NAD-binding                          | 3  | 7  | 8  | 464  | 14.5 | 2.08  |

|           |           |                                                                       |    |    |    |      |      |      |
|-----------|-----------|-----------------------------------------------------------------------|----|----|----|------|------|------|
| Pput_4477 | 148549679 | Glu/Leu/Phe/Val dehydrogenase, dimerisation region                    | 2  | 5  | 5  | 175  | 14.2 | 0.86 |
| Pput_4479 | 148549681 | maleylacetoacetate isomerase                                          | 2  | 4  | 5  | 282  | 24.3 | 1.44 |
| Pput_4480 | 148549682 | fumarylacetoacetase                                                   | 3  | 5  | 6  | 275  | 14.9 | 0.63 |
| Pput_4481 | 148549683 | homogentisate 1,2-dioxygenase                                         | 3  | 1  | 2  | 92   | 3.2  | 0.24 |
| Pput_4483 | 148549685 | hypothetical protein Pput_4483                                        | 1  | 1  | 1  | 27   | 0.7  | 0.03 |
| Pput_4496 | 148549698 | alpha/beta hydrolase-like protein                                     | 1  | 1  | 1  | 40   | 3.6  | 0.11 |
| Pput_4497 | 148549699 | trans-2-enoyl-CoA reductase                                           | 5  | 14 | 15 | 776  | 31.3 | 4.16 |
| Pput_4498 | 148549700 | acetyl-CoA acetyltransferase                                          | 1  | 4  | 4  | 107  | 10.7 | 0.42 |
| Pput_4500 | 148549702 | methylenetetrahydrofolate reductase                                   | 1  | 1  | 1  | 28   | 1    | 0.07 |
| Pput_4503 | 148549705 | carbon starvation protein CstA                                        | 32 | 3  | 3  | 1790 | 2.8  | 2.16 |
| Pput_4504 | 148549706 | type IV pilus assembly PilZ                                           | 1  | 1  | 1  | 26   | 8.3  | 0.27 |
| Pput_4507 | 148549709 | large-conductance mechanosensitive channel                            | 3  | 1  | 1  | 108  | 5.8  | 0.81 |
| Pput_4508 | 148549710 | oxidoreductase FAD/NAD(P)-binding subunit                             | 2  | 4  | 5  | 174  | 15.8 | 0.82 |
| Pput_4510 | 148549712 | rRNA (guanine-N(2)-)-methyltransferase                                | 1  | 1  | 1  | 33   | 2.7  | 0.09 |
| Pput_4513 | 148549715 | cytochrome bd ubiquinol oxidase, subunit I                            | 2  | 1  | 1  | 61   | 4    | 0.14 |
| Pput_4514 | 148549716 | major facilitator transporter                                         | 1  | 1  | 1  | 29   | 3.4  | 0.09 |
| Pput_4516 | 148549718 | tRNA (uracil-5-)-methyltransferase                                    | 2  | 2  | 3  | 146  | 6.9  | 0.38 |
| Pput_4518 | 148549720 | protocatechuate 3,4-dioxygenase, beta subunit                         | 2  | 2  | 3  | 69   | 8.8  | 0.44 |
| Pput_4519 | 148549721 | protein of unknown function, zinc metallopeptidase putative           | 8  | 5  | 7  | 646  | 14.9 | 3.47 |
| Pput_4522 | 148549724 | LysR family transcriptional regulator                                 | 2  | 1  | 2  | 91   | 4    | 0.22 |
| Pput_4527 | 148549729 | hypothetical protein Pput_4527                                        | 1  | 1  | 1  | 29   | 8.8  | 0.4  |
| Pput_4530 | 148549732 | 3-hydroxyisobutyrate dehydrogenase                                    | 7  | 8  | 6  | 847  | 21.7 | 3.04 |
| Pput_4531 | 148549733 | methylmalonate-semialdehyde dehydrogenase                             | 4  | 12 | 12 | 837  | 26   | 1.77 |
| Pput_4532 | 148549734 | LysR family transcriptional regulator                                 | 2  | 2  | 2  | 94   | 7.9  | 0.33 |
| Pput_4535 | 148549737 | hypothetical protein Pput_4535                                        | 1  | 1  | 1  | 29   | 2.7  | 0.19 |
| Pput_4536 | 148549738 | exodeoxyribonuclease V, alpha subunit                                 | 1  | 1  | 1  | 60   | 1.4  | 0.05 |
| Pput_4538 | 148549740 | exodeoxyribonuclease V, gamma subunit                                 | 2  | 1  | 2  | 62   | 0.7  | 0.06 |
| Pput_4541 | 148549743 | CDP-diacylglycerol--serine O-phosphatidyltransferase                  | 6  | 1  | 1  | 354  | 3.9  | 0.72 |
| Pput_4542 | 148549744 | ketol-acid reductoisomerase                                           | 10 | 23 | 12 | 1982 | 36.4 | 9.09 |
| Pput_4543 | 148549745 | acetolactate synthase 3 regulatory subunit                            | 4  | 7  | 6  | 299  | 20.2 | 3.18 |
| Pput_4544 | 148549746 | acetolactate synthase 3 catalytic subunit                             | 4  | 10 | 10 | 616  | 17.9 | 1.48 |
| Pput_4546 | 148549748 | hypothetical protein Pput_4546                                        | 2  | 6  | 7  | 299  | 24.8 | 1.48 |
| Pput_4548 | 148549750 | hypothetical protein Pput_4548                                        | 4  | 10 | 10 | 434  | 21.6 | 1.36 |
| Pput_4556 | 148549758 | hypothetical protein Pput_4556                                        | 2  | 1  | 3  | 92   | 2.3  | 0.27 |
| Pput_4558 | 148549760 | glutamyl-Q tRNA(Asp) synthetase                                       | 1  | 2  | 2  | 48   | 6.3  | 0.23 |
| Pput_4560 | 148549762 | multi-sensor signal transduction histidine kinase                     | 3  | 1  | 1  | 100  | 1    | 0.09 |
| Pput_4561 | 148549763 | two component, sigma54 specific, Fis family transcriptional regulator | 4  | 6  | 7  | 228  | 9.4  | 0.72 |
| Pput_4562 | 148549764 | poly(A) polymerase                                                    | 2  | 10 | 12 | 373  | 18.3 | 1.83 |
| Pput_4565 | 148549767 | pantoate--beta-alanine ligase                                         | 3  | 5  | 4  | 188  | 13.2 | 0.96 |
| Pput_4566 | 148549768 | glucose-6-phosphate isomerase                                         | 3  | 9  | 8  | 389  | 14.3 | 1.23 |
| Pput_4567 | 148549769 | acetyl-CoA synthetase                                                 | 5  | 8  | 11 | 515  | 11.3 | 1.18 |
| Pput_4569 | 148549771 | hypothetical protein Pput_4569                                        | 1  | 2  | 2  | 43   | 1.7  | 0.07 |
| Pput_4572 | 148549774 | transport-associated                                                  | 2  | 3  | 3  | 133  | 25.9 | 1.69 |
| Pput_4573 | 148549775 | polynucleotide phosphorylase/polyadenylase                            | 12 | 20 | 18 | 1214 | 21.3 | 3.19 |
| Pput_4574 | 148549776 | 30S ribosomal protein S15                                             | 1  | 1  | 1  | 27   | 7.9  | 0.4  |
| Pput_4575 | 148549777 | tRNA pseudouridine synthase B                                         | 1  | 2  | 2  | 70   | 7.2  | 0.24 |
| Pput_4576 | 148549778 | ribosome-binding factor A                                             | 2  | 2  | 2  | 139  | 13.6 | 0.85 |
| Pput_4577 | 148549779 | translation initiation factor IF-2                                    | 7  | 12 | 18 | 1093 | 13.9 | 1.81 |
| Pput_4578 | 148549780 | transcription elongation factor NusA                                  | 6  | 11 | 13 | 603  | 20.1 | 2.99 |
| Pput_4580 | 148549782 | preprotein translocase subunit SecE                                   | 1  | 1  | 1  | 46   | 13.6 | 0.29 |
| Pput_4581 | 148549783 | triosephosphate isomerase                                             | 3  | 3  | 3  | 251  | 14.7 | 0.8  |
| Pput_4582 | 148549784 | phosphoglucosamine mutase                                             | 5  | 4  | 7  | 266  | 8.3  | 0.94 |
| Pput_4583 | 148549785 | dihydropterolate synthase                                             | 1  | 2  | 2  | 79   | 8.1  | 0.26 |
| Pput_4584 | 148549786 | ATP-dependent metalloprotease FtsH                                    | 7  | 10 | 9  | 635  | 14.8 | 1.16 |
| Pput_4585 | 148549787 | ribosomal RNA methyltransferase RrmJ/FtsJ                             | 2  | 3  | 3  | 101  | 13   | 0.74 |
| Pput_4588 | 148549790 | transcription elongation factor GreA                                  | 1  | 1  | 1  | 57   | 5.6  | 0.22 |
| Pput_4589 | 148549791 | carbamoyl phosphate synthase large subunit                            | 9  | 21 | 16 | 1431 | 11.9 | 2    |
| Pput_4590 | 148549792 | carbamoyl phosphate synthase small subunit                            | 3  | 3  | 3  | 209  | 8.3  | 0.47 |
| Pput_4591 | 148549793 | dihydrodipicolinate reductase                                         | 3  | 9  | 8  | 503  | 24   | 2.65 |
| Pput_4592 | 148549794 | chaperone protein DnaJ                                                | 4  | 4  | 4  | 212  | 9.9  | 0.9  |
| Pput_4593 | 148549795 | molecular chaperone DnaK                                              | 23 | 26 | 25 | 2998 | 28.8 | 8.34 |
| Pput_4594 | 148549796 | GrpE protein                                                          | 2  | 2  | 2  | 134  | 9.2  | 0.82 |
| Pput_4595 | 148549797 | DNA repair protein RecN                                               | 1  | 1  | 1  | 39   | 1.6  | 0.06 |
| Pput_4596 | 148549798 | ferric uptake regulator family protein                                | 3  | 6  | 5  | 529  | 42.5 | 5.41 |
| Pput_4597 | 148549799 | SmpA/OmlA domain-containing protein                                   | 1  | 1  | 1  | 48   | 10.7 | 0.2  |
| Pput_4599 | 148549801 | SsrA-binding protein                                                  | 1  | 1  | 1  | 39   | 7.5  | 0.21 |
| Pput_4602 | 148549804 | L-lactate dehydrogenase                                               | 1  | 3  | 3  | 95   | 8.1  | 0.3  |
| Pput_4603 | 148549805 | D-lactate dehydrogenase (cytochrome)                                  | 1  | 1  | 1  | 26   | 1.1  | 0.04 |
| Pput_4605 | 148549807 | phage integrase family protein                                        | 1  | 1  | 1  | 28   | 3.6  | 0.08 |
| Pput_4606 | 148549808 | hypothetical protein Pput_4606                                        | 1  | 1  | 1  | 26   | 3    | 0.07 |
| Pput_4610 | 148549812 | hypothetical protein Pput_4610                                        | 2  | 2  | 2  | 62   | 1.5  | 0.1  |
| Pput_4611 | 148549813 | restriction modification system DNA specificity subunit               | 1  | 1  | 1  | 39   | 1.4  | 0.06 |
| Pput_4618 | 148549820 | hypothetical protein Pput_4618                                        | 1  | 1  | 1  | 26   | 1.2  | 0.05 |
| Pput_4630 | 148549832 | LysR family transcriptional regulator                                 | 1  | 1  | 1  | 28   | 3.4  | 0.12 |
| Pput_4634 | 148549836 | alcohol dehydrogenase                                                 | 3  | 10 | 10 | 417  | 26.2 | 2.42 |
| Pput_4636 | 148549838 | acyl-CoA thioesterase II                                              | 3  | 6  | 5  | 185  | 9.7  | 1.3  |
| Pput_4637 | 148549839 | GCN5-related N-acetyltransferase                                      | 1  | 1  | 1  | 30   | 4.2  | 0.18 |
| Pput_4641 | 148549843 | DEAD/DEAH box helicase domain-containing protein                      | 2  | 9  | 7  | 292  | 20.8 | 0.96 |
| Pput_4644 | 148549846 | hypothetical protein Pput_4644                                        | 1  | 1  | 1  | 34   | 5.7  | 0.22 |
| Pput_4648 | 148549850 | ATP-dependent helicase HrpB                                           | 3  | 1  | 2  | 108  | 1.1  | 0.12 |
| Pput_4652 | 148549854 | AsnC family transcriptional regulator                                 | 3  | 5  | 4  | 155  | 22.8 | 1.87 |
| Pput_4655 | 148549857 | AMP nucleosidase                                                      | 2  | 6  | 6  | 234  | 10.1 | 0.66 |
| Pput_4656 | 148549858 | acyl-CoA dehydrogenase domain-containing protein                      | 3  | 12 | 16 | 705  | 27.1 | 1.82 |
| Pput_4658 | 148549860 | phosphomethylpyrimidine kinase                                        | 2  | 5  | 6  | 206  | 27.9 | 1.31 |
| Pput_4659 | 148549861 | thiamine-phosphate pyrophosphorylase                                  | 2  | 2  | 2  | 86   | 4.8  | 0.56 |
| Pput_4660 | 148549862 | glutamate-1-semialdehyde aminotransferase                             | 5  | 11 | 7  | 948  | 22   | 2.85 |
| Pput_4661 | 148549863 | Sel1 domain-containing protein                                        | 2  | 1  | 2  | 96   | 6.6  | 0.38 |
| Pput_4664 | 148549866 | putative metalloprotease                                              | 2  | 1  | 2  | 72   | 8.9  | 0.44 |
| Pput_4665 | 148549867 | CBS domain-containing protein                                         | 1  | 2  | 2  | 72   | 4.7  | 0.25 |



|           |           |                                                                                         |    |    |    |      |      |       |
|-----------|-----------|-----------------------------------------------------------------------------------------|----|----|----|------|------|-------|
| Pput_4666 | 148549868 | apolipoprotein N-acyltransferase                                                        | 1  | 1  | 1  | 29   | 2.2  | 0.07  |
| Pput_4669 | 148549871 | leucyl-tRNA synthetase                                                                  | 4  | 8  | 7  | 309  | 8.4  | 0.55  |
| Pput_4670 | 148549872 | rare lipoprotein B                                                                      | 10 | 23 | 19 | 1804 | 65.7 | 35.7  |
| Pput_4671 | 148549873 | DNA polymerase III subunit delta                                                        | 1  | 1  | 1  | 43   | 2.9  | 0.1   |
| Pput_4673 | 148549875 | lytic murein transglycosylase                                                           | 3  | 5  | 6  | 352  | 11.4 | 0.78  |
| Pput_4674 | 148549876 | peptidase U61, LD-carboxypeptidase A                                                    | 1  | 1  | 1  | 40   | 2.6  | 0.11  |
| Pput_4675 | 148549877 | lipoyl synthase                                                                         | 1  | 3  | 2  | 80   | 8.3  | 0.21  |
| Pput_4678 | 148549880 | Serine-type D-Ala-D-Ala carboxypeptidase                                                | 3  | 4  | 4  | 323  | 10.4 | 0.83  |
| Pput_4680 | 148549882 | lytic murein transglycosylase B                                                         | 1  | 1  | 1  | 27   | 2.7  | 0.1   |
| Pput_4684 | 148549886 | iojap-like protein                                                                      | 1  | 2  | 2  | 56   | 10.1 | 0.49  |
| Pput_4685 | 148549887 | nicotinic acid mononucleotide adenylyltransferase                                       | 1  | 1  | 1  | 43   | 4.3  | 0.15  |
| Pput_4686 | 148549888 | gamma-glutamyl phosphate reductase                                                      | 2  | 2  | 3  | 139  | 5.4  | 0.34  |
| Pput_4689 | 148549891 | peptidase S16, lon domain-containing protein                                            | 1  | 1  | 1  | 40   | 3.6  | 0.17  |
| Pput_4692 | 148549894 | dehydratase                                                                             | 2  | 3  | 1  | 167  | 7.3  | 1.02  |
| Pput_4694 | 148549896 | Zinc finger-domain-containing protein                                                   | 3  | 3  | 3  | 198  | 4.9  | 0.37  |
| Pput_4697 | 148549899 | IMP cyclohydrolase                                                                      | 3  | 7  | 7  | 529  | 11.2 | 0.96  |
| Pput_4698 | 148549900 | phosphoribosylamine--glycine ligase                                                     | 2  | 3  | 2  | 124  | 6    | 0.34  |
| Pput_4699 | 148549901 | integral membrane sensor hybrid histidine kinase                                        | 1  | 1  | 1  | 41   | 1.2  | 0.04  |
| Pput_4701 | 148549903 | hypothetical protein Pput_4701                                                          | 1  | 1  | 1  | 29   | 5.8  | 0.17  |
| Pput_4708 | 148549910 | precorrin-6y C5,15-methyltransferase (decarboxylating), CbiE subunit                    | 1  | 1  | 1  | 37   | 4    | 0.09  |
| Pput_4719 | 148549921 | ABC-type branched-chain amino acid transport systems periplasmic component-like protein | 3  | 8  | 6  | 490  | 15.2 | 1.18  |
| Pput_4722 | 148549924 | ABC transporter related                                                                 | 4  | 2  | 3  | 247  | 7.7  | 0.76  |
| Pput_4723 | 148549925 | ABC transporter related                                                                 | 2  | 5  | 5  | 200  | 31   | 1.14  |
| Pput_4724 | 148549926 | GCN5-related N-acetyltransferase                                                        | 2  | 4  | 4  | 226  | 31.6 | 1.55  |
| Pput_4725 | 148549927 | hypothetical protein Pput_4725                                                          | 1  | 1  | 1  | 64   | 16.8 | 0.34  |
| Pput_4726 | 148549928 | chaperone DnaJ domain-containing protein                                                | 9  | 9  | 10 | 999  | 21.6 | 4.99  |
| Pput_4727 | 148549929 | molecular chaperone-like protein                                                        | 1  | 1  | 1  | 28   | 2.6  | 0.08  |
| Pput_4729 | 148549931 | PsiF repeat-containing protein                                                          | 1  | 1  | 1  | 25   | 14.7 | 0.38  |
| Pput_4732 | 148549934 | alpha/beta hydrolase fold                                                               | 1  | 1  | 1  | 30   | 2.7  | 0.12  |
| Pput_4737 | 148549939 | TetR family transcriptional regulator                                                   | 2  | 2  | 2  | 59   | 8.1  | 0.48  |
| Pput_4738 | 148549940 | N-acylglucosamine 2-epimerase                                                           | 2  | 2  | 3  | 119  | 5.2  | 0.38  |
| Pput_4740 | 148549942 | short-chain dehydrogenase/reductase SDR                                                 | 3  | 8  | 7  | 386  | 34.3 | 1.89  |
| Pput_4741 | 148549943 | ABC transporter related                                                                 | 4  | 12 | 6  | 1207 | 24.8 | 7.04  |
| Pput_4742 | 148549944 | ABC transporter related                                                                 | 5  | 9  | 7  | 741  | 20.6 | 3.66  |
| Pput_4743 | 148549945 | inner-membrane translocator                                                             | 8  | 3  | 2  | 443  | 6.5  | 1.09  |
| Pput_4745 | 148549947 | extracellular ligand-binding receptor                                                   | 7  | 22 | 19 | 1627 | 44.4 | 11.34 |
| Pput_4747 | 148549949 | NAD synthetase                                                                          | 5  | 7  | 8  | 1129 | 22.5 | 4.71  |
| Pput_4748 | 148549950 | azurin                                                                                  | 3  | 2  | 2  | 155  | 13.3 | 1.3   |
| Pput_4749 | 148549951 | hypothetical protein Pput_4749                                                          | 4  | 1  | 3  | 206  | 6.2  | 1.2   |
| Pput_4750 | 148549952 | hypothetical protein Pput_4750                                                          | 1  | 1  | 1  | 41   | 1    | 0.04  |
| Pput_4754 | 148549956 | replicative DNA helicase                                                                | 1  | 1  | 1  | 52   | 3    | 0.07  |
| Pput_4755 | 148549957 | 50S ribosomal protein L9                                                                | 2  | 9  | 7  | 272  | 33.8 | 4.81  |
| Pput_4757 | 148549959 | 30S ribosomal protein S18                                                               | 2  | 3  | 3  | 126  | 34.2 | 4.12  |
| Pput_4758 | 148549960 | 30S ribosomal protein S6                                                                | 2  | 8  | 7  | 455  | 40.4 | 7.03  |
| Pput_4759 | 148549961 | RNA methyltransferase                                                                   | 4  | 6  | 7  | 374  | 24.6 | 1.61  |
| Pput_4760 | 148549962 | ribonuclease R                                                                          | 6  | 14 | 17 | 845  | 13.8 | 1.34  |
| Pput_4761 | 148549963 | extracellular solute-binding protein                                                    | 1  | 3  | 3  | 106  | 8.9  | 0.34  |
| Pput_4764 | 148549966 | methyl-accepting chemotaxis sensory transducer                                          | 6  | 7  | 9  | 466  | 10.9 | 0.89  |
| Pput_4765 | 148549967 | adenylosuccinate synthetase                                                             | 8  | 16 | 15 | 1448 | 31.6 | 4.45  |
| Pput_4766 | 148549968 | ATP phosphoribosyltransferase regulatory subunit                                        | 2  | 11 | 8  | 370  | 22.8 | 1.39  |
| Pput_4767 | 148549969 | HflC protein                                                                            | 3  | 27 | 21 | 1152 | 60.9 | 19.04 |
| Pput_4768 | 148549970 | HflK protein                                                                            | 5  | 11 | 11 | 466  | 26.7 | 2.4   |
| Pput_4770 | 148549972 | RNA-binding protein Hfq                                                                 | 3  | 3  | 2  | 175  | 34.9 | 1.9   |
| Pput_4771 | 148549973 | tRNA delta(2)-isopentenylpyrophosphate transferase                                      | 1  | 1  | 1  | 61   | 3.1  | 0.11  |
| Pput_4774 | 148549976 | hypothetical protein Pput_4774                                                          | 1  | 2  | 2  | 102  | 12.7 | 0.5   |
| Pput_4775 | 148549977 | carbohydrate kinase, YjeF related protein                                               | 2  | 4  | 4  | 214  | 13   | 0.65  |
| Pput_4778 | 148549980 | oligoribonuclease                                                                       | 3  | 4  | 5  | 295  | 21.7 | 2.47  |
| Pput_4779 | 148549981 | ribosome-associated GTPase                                                              | 2  | 2  | 3  | 106  | 9.9  | 0.31  |
| Pput_4781 | 148549983 | flagellar motor protein MotA                                                            | 2  | 1  | 1  | 75   | 3.2  | 0.24  |
| Pput_4782 | 148549984 | metal-dependent hydrolase HDOD                                                          | 1  | 1  | 1  | 53   | 1.8  | 0.06  |
| Pput_4783 | 148549985 | rhodanese domain-containing protein                                                     | 2  | 5  | 6  | 230  | 19.7 | 1.27  |
| Pput_4784 | 148549986 | phosphatidylserine decarboxylase                                                        | 5  | 5  | 4  | 318  | 15.7 | 1.51  |
| Pput_4785 | 148549987 | phosphoserine phosphatase SerB                                                          | 3  | 4  | 5  | 253  | 10.1 | 0.96  |
| Pput_4786 | 148549988 | hypothetical protein Pput_4786                                                          | 3  | 5  | 5  | 275  | 10.3 | 0.78  |
| Pput_4787 | 148549989 | hypothetical protein Pput_4787                                                          | 1  | 1  | 1  | 44   | 5.2  | 0.14  |
| Pput_4788 | 148549990 | DNA topoisomerase IV subunit A                                                          | 2  | 5  | 5  | 256  | 7    | 0.33  |
| Pput_4790 | 148549992 | hypothetical protein Pput_4790                                                          | 3  | 1  | 1  | 97   | 2.7  | 0.3   |
| Pput_4791 | 148549993 | DNA topoisomerase IV subunit B                                                          | 2  | 3  | 4  | 142  | 4.9  | 0.34  |
| Pput_4795 | 148549997 | NUDIX hydrolase                                                                         | 2  | 8  | 7  | 315  | 31.2 | 2.47  |
| Pput_4798 | 148550000 | thiamine biosynthesis protein ThiC                                                      | 1  | 1  | 1  | 32   | 1.4  | 0.05  |
| Pput_4799 | 148550001 | TolC family type I secretion outer membrane protein                                     | 2  | 4  | 5  | 187  | 8.6  | 0.47  |
| Pput_4800 | 148550002 | 3-deoxy-D-manno-octulosonic-acid transferase                                            | 1  | 2  | 2  | 52   | 5    | 0.17  |
| Pput_4801 | 148550003 | LysR family transcriptional regulator                                                   | 1  | 1  | 1  | 27   | 2.4  | 0.11  |
| Pput_4803 | 148550005 | FAD dependent oxidoreductase                                                            | 1  | 7  | 7  | 168  | 23   | 0.82  |
| Pput_4804 | 148550006 | aldo/keto reductase                                                                     | 2  | 1  | 1  | 129  | 5.6  | 0.26  |
| Pput_4806 | 148550008 | bifunctional heptose 7-phosphate kinase/heptose 1-phosphate adenylyltransferase         | 1  | 7  | 7  | 158  | 14.8 | 0.65  |
| Pput_4807 | 148550009 | lipid A ABC exporter, fused ATPase and inner membrane subunits MsbA                     | 7  | 3  | 4  | 491  | 4.7  | 0.78  |
| Pput_4809 | 148550011 | hypothetical protein Pput_4809                                                          | 3  | 5  | 6  | 460  | 20.5 | 2.73  |
| Pput_4810 | 148550012 | glycosyl transferase, group 1                                                           | 3  | 5  | 6  | 316  | 13.8 | 0.84  |
| Pput_4812 | 148550014 | hypothetical protein Pput_4812                                                          | 4  | 3  | 6  | 141  | 10.4 | 0.63  |
| Pput_4814 | 148550016 | Mig-14 family protein                                                                   | 2  | 2  | 2  | 118  | 6.4  | 0.35  |
| Pput_4815 | 148550017 | glycosyl transferase, group 1                                                           | 2  | 4  | 4  | 136  | 11.4 | 0.71  |
| Pput_4816 | 148550018 | carbamoyltransferase                                                                    | 2  | 8  | 8  | 258  | 13.5 | 0.61  |
| Pput_4817 | 148550019 | hypothetical protein Pput_4817                                                          | 3  | 3  | 3  | 239  | 11.5 | 0.64  |
| Pput_4818 | 148550020 | sodium/proline symporter                                                                | 2  | 1  | 1  | 85   | 2.6  | 0.14  |
| Pput_4819 | 148550021 | pyrroline-5-carboxylate dehydrogenase                                                   | 5  | 9  | 14 | 660  | 7.4  | 0.61  |
| Pput_4821 | 148550023 | acyl-CoA dehydrogenase domain-containing protein                                        | 1  | 1  | 1  | 27   | 2.2  | 0.06  |
| Pput_4822 | 148550024 | peptidase U62, modulator of DNA gyrase                                                  | 2  | 3  | 3  | 130  | 7.9  | 0.3   |
| Pput_4823 | 148550025 | hypothetical protein Pput_4823                                                          | 1  | 3  | 2  | 104  | 5    | 0.16  |

|           |           |                                                                                  |    |    |    |      |      |       |
|-----------|-----------|----------------------------------------------------------------------------------|----|----|----|------|------|-------|
| Pput_4824 | 148550026 | EmrB/QacA family drug resistance transporter                                     | 1  | 1  | 1  | 39   | 2.7  | 0.07  |
| Pput_4825 | 148550027 | ATP-dependent RNA helicase DbpA                                                  | 1  | 1  | 1  | 28   | 2.8  | 0.07  |
| Pput_4829 | 148550031 | GCN5-related N-acetyltransferase                                                 | 2  | 2  | 2  | 151  | 16   | 0.75  |
| Pput_4831 | 148550033 | hypothetical protein Pput_4831                                                   | 1  | 1  | 1  | 30   | 5.6  | 0.18  |
| Pput_4833 | 148550035 | fructose-1,6-bisphosphate aldolase                                               | 8  | 10 | 13 | 1095 | 27.1 | 5.8   |
| Pput_4834 | 148550036 | hypothetical protein Pput_4834                                                   | 1  | 1  | 1  | 58   | 8.3  | 0.33  |
| Pput_4836 | 148550038 | phosphoglycerate kinase                                                          | 4  | 7  | 7  | 485  | 17.6 | 1.31  |
| Pput_4837 | 148550039 | D-erythrose-4-phosphate dehydrogenase                                            | 2  | 1  | 1  | 103  | 4.8  | 0.2   |
| Pput_4838 | 148550040 | transketolase                                                                    | 6  | 13 | 14 | 852  | 16.8 | 1.9   |
| Pput_4840 | 148550042 | S-adenosylmethionine synthetase                                                  | 3  | 8  | 6  | 407  | 18.2 | 1.41  |
| Pput_4841 | 148550043 | NAD-dependent DNA ligase LigB                                                    | 1  | 1  | 1  | 26   | 3    | 0.06  |
| Pput_4845 | 148550047 | hypothetical protein Pput_4845                                                   | 10 | 1  | 1  | 559  | 8.6  | 2.8   |
| Pput_4848 | 148550050 | thioesterase superfamily protein                                                 | 2  | 1  | 1  | 114  | 12   | 0.52  |
| Pput_4849 | 148550051 | S-adenosyl-L-homocysteine hydrolase                                              | 6  | 11 | 14 | 1027 | 27.1 | 2.84  |
| Pput_4850 | 148550052 | 5,10-methylenetetrahydrofolate reductase                                         | 2  | 4  | 5  | 260  | 20.6 | 0.69  |
| Pput_4853 | 148550055 | DEAD/DEAH box helicase domain-containing protein                                 | 4  | 5  | 6  | 251  | 9.6  | 0.51  |
| Pput_4854 | 148550056 | hypothetical protein Pput_4854                                                   | 1  | 1  | 1  | 31   | 5.7  | 0.19  |
| Pput_4856 | 148550058 | amine oxidase                                                                    | 2  | 1  | 2  | 53   | 1.3  | 0.12  |
| Pput_4858 | 148550060 | adenosylmethionine--8-amino-7-oxononanoate transaminase                          | 2  | 1  | 1  | 100  | 1.7  | 0.14  |
| Pput_4859 | 148550061 | 16S ribosomal RNA methyltransferase RsmE                                         | 1  | 1  | 1  | 65   | 5    | 0.15  |
| Pput_4861 | 148550063 | CheW domain-containing protein                                                   | 1  | 2  | 2  | 89   | 14   | 0.5   |
| Pput_4862 | 148550064 | CheA signal transduction histidine kinase                                        | 2  | 2  | 2  | 62   | 0.4  | 0.06  |
| Pput_4863 | 148550065 | methyl-accepting chemotaxis sensory transducer                                   | 2  | 1  | 3  | 68   | 0.9  | 0.15  |
| Pput_4864 | 148550066 | putative CheW protein                                                            | 1  | 1  | 1  | 38   | 5.4  | 0.19  |
| Pput_4867 | 148550069 | glutathione synthetase                                                           | 4  | 6  | 9  | 337  | 21.1 | 1.51  |
| Pput_4868 | 148550070 | TonB family protein                                                              | 2  | 1  | 1  | 61   | 3.7  | 0.22  |
| Pput_4871 | 148550073 | bifunctional pyrimidine regulatory protein PyrR uracil phosphoribosyltransferase | 2  | 2  | 2  | 104  | 11.6 | 0.67  |
| Pput_4872 | 148550074 | aspartate carbamoyltransferase catalytic subunit                                 | 5  | 11 | 11 | 863  | 27.8 | 4.24  |
| Pput_4873 | 148550075 | dihydroorotase                                                                   | 6  | 4  | 7  | 430  | 11.8 | 1.26  |
| Pput_4874 | 229328216 | ATP-dependent protease peptidase subunit                                         | 3  | 7  | 7  | 355  | 34.1 | 4.26  |
| Pput_4875 | 148550077 | ATP-dependent protease ATP-binding subunit HslU                                  | 13 | 23 | 20 | 1092 | 32.7 | 5.82  |
| Pput_4877 | 148550079 | poly(R)-hydroxyalkanoic acid synthase, class II                                  | 2  | 4  | 5  | 173  | 9.1  | 0.38  |
| Pput_4878 | 148550080 | poly(3-hydroxyalkanoate) depolymerase                                            | 3  | 4  | 6  | 199  | 12.8 | 0.86  |
| Pput_4879 | 148550081 | poly(R)-hydroxyalkanoic acid synthase, class II                                  | 4  | 6  | 7  | 285  | 9.6  | 0.72  |
| Pput_4880 | 148550082 | TetR family transcriptional regulator                                            | 1  | 1  | 1  | 47   | 4.4  | 0.16  |
| Pput_4881 | 148550083 | poly(hydroxyalkanoate) granule-associated protein                                | 19 | 17 | 18 | 2348 | 47.1 | 24.23 |
| Pput_4882 | 148550084 | poly(hydroxyalkanoate) granule-associated protein                                | 4  | 8  | 6  | 548  | 36.7 | 6.66  |
| Pput_4883 | 148550085 | hypothetical protein Pput_4883                                                   | 1  | 1  | 1  | 27   | 0.6  | 0.02  |
| Pput_4885 | 148550087 | ubiquinone/menaquinone biosynthesis methyltransferase                            | 5  | 10 | 14 | 893  | 40.2 | 6.9   |
| Pput_4886 | 148550088 | hypothetical protein Pput_4886                                                   | 1  | 1  | 1  | 26   | 6.3  | 0.17  |
| Pput_4887 | 148550089 | 2-polyprenylphenol 6-hydroxylase                                                 | 1  | 1  | 1  | 26   | 1.7  | 0.06  |
| Pput_4888 | 148550090 | phosphoribosyl-AMP cyclohydrolase                                                | 1  | 2  | 1  | 52   | 6.9  | 0.58  |
| Pput_4890 | 148550092 | twin arginine translocase protein A                                              | 1  | 1  | 1  | 34   | 12.2 | 0.4   |
| Pput_4891 | 148550093 | sec-independent translocase                                                      | 1  | 1  | 1  | 27   | 10.4 | 0.29  |
| Pput_4892 | 148550094 | Sec-independent protein translocase, TatC subunit                                | 1  | 1  | 1  | 29   | 7.3  | 0.13  |
| Pput_4893 | 148550095 | 16S ribosomal RNA methyltransferase RsmE                                         | 1  | 1  | 1  | 28   | 3.8  | 0.15  |
| Pput_4894 | 148550096 | methyl-accepting chemotaxis sensory transducer                                   | 3  | 10 | 11 | 468  | 13.5 | 1     |
| Pput_4895 | 148550097 | methyl-accepting chemotaxis sensory transducer                                   | 3  | 2  | 3  | 157  | 3    | 0.27  |
| Pput_4896 | 148550098 | ABC transporter related                                                          | 1  | 3  | 3  | 60   | 10.2 | 0.48  |
| Pput_4897 | 148550099 | polar amino acid ABC transporter, inner membrane subunit                         | 4  | 2  | 1  | 211  | 3.4  | 0.56  |
| Pput_4898 | 148550100 | extracellular solute-binding protein                                             | 7  | 11 | 9  | 929  | 23.7 | 8.18  |
| Pput_4899 | 148550101 | glucosyltransferase MdoH                                                         | 5  | 2  | 4  | 335  | 3    | 0.36  |
| Pput_4900 | 148550102 | glucan biosynthesis protein G                                                    | 5  | 2  | 6  | 272  | 3.8  | 0.55  |
| Pput_4902 | 148550104 | proline iminopeptidase                                                           | 4  | 6  | 5  | 347  | 19.2 | 1.44  |
| Pput_4904 | 148550106 | imidazolonepropionase                                                            | 1  | 1  | 1  | 29   | 2.7  | 0.09  |
| Pput_4906 | 148550108 | histidine ammonia-lyase                                                          | 1  | 1  | 1  | 50   | 2.2  | 0.07  |
| Pput_4907 | 148550109 | urocanate hydratase                                                              | 4  | 5  | 6  | 337  | 11   | 0.52  |
| Pput_4908 | 148550110 | hypothetical protein Pput_4908                                                   | 2  | 2  | 1  | 74   | 5.8  | 0.57  |
| Pput_4909 | 148550111 | GntR family transcriptional regulator                                            | 3  | 5  | 5  | 219  | 14.9 | 1.32  |
| Pput_4910 | 148550112 | N-formimino-L-glutamate deiminase                                                | 1  | 1  | 1  | 27   | 3.3  | 0.07  |
| Pput_4911 | 148550113 | Lipocalin family protein                                                         | 1  | 1  | 1  | 25   | 3.7  | 0.17  |
| Pput_4913 | 148550115 | hypothetical protein Pput_4913                                                   | 3  | 4  | 4  | 297  | 16.7 | 1.57  |
| Pput_4914 | 148550116 | fructose-1,6-bisphosphatase                                                      | 3  | 11 | 9  | 569  | 18.5 | 3.6   |
| Pput_4915 | 148550117 | glycogen/starch/alpha-glucan phosphorylase                                       | 38 | 39 | 29 | 4560 | 28.1 | 6.49  |
| Pput_4918 | 148550120 | GTP-binding protein TypA                                                         | 5  | 17 | 16 | 614  | 23.8 | 1.91  |
| Pput_4919 | 148550121 | thiamine biosynthesis protein ThiI                                               | 1  | 2  | 2  | 55   | 4.8  | 0.14  |
| Pput_4920 | 148550122 | glutamine synthetase, type I                                                     | 36 | 53 | 24 | 3366 | 42.1 | 17.05 |
| Pput_4922 | 148550124 | signal transduction histidine kinase, nitrogen specific, NtrB                    | 2  | 5  | 6  | 170  | 12.7 | 0.87  |
| Pput_4923 | 148550125 | nitrogen metabolism transcriptional regulator NtrC                               | 3  | 13 | 16 | 910  | 28   | 2.75  |
| Pput_4925 | 148550127 | RNA methyltransferase                                                            | 1  | 1  | 1  | 38   | 9.8  | 0.23  |
| Pput_4926 | 148550128 | preprotein translocase subunit SecB                                              | 3  | 5  | 5  | 311  | 30.4 | 4.16  |
| Pput_4928 | 148550130 | rhodanese domain-containing protein                                              | 1  | 1  | 1  | 27   | 12.4 | 0.26  |
| Pput_4929 | 148550131 | phosphoglyceromutase                                                             | 3  | 5  | 4  | 362  | 6.5  | 0.74  |
| Pput_4931 | 148550133 | carboxyl-terminal protease                                                       | 3  | 5  | 7  | 251  | 13   | 0.99  |
| Pput_4935 | 148550137 | transcriptional regulator BetI                                                   | 4  | 3  | 7  | 262  | 15.1 | 1.67  |
| Pput_4936 | 148550138 | betaine aldehyde dehydrogenase                                                   | 3  | 1  | 3  | 92   | 2.4  | 0.21  |
| Pput_4937 | 148550139 | choline dehydrogenase                                                            | 2  | 3  | 3  | 158  | 6    | 0.25  |
| Pput_4940 | 148550142 | potassium efflux protein KefA                                                    | 2  | 1  | 2  | 80   | 0.9  | 0.06  |
| Pput_4941 | 148550143 | hypothetical protein Pput_4941                                                   | 1  | 4  | 4  | 112  | 10.3 | 0.3   |
| Pput_4942 | 148550144 | thioredoxin                                                                      | 1  | 1  | 1  | 26   | 6.9  | 0.24  |
| Pput_4947 | 148550149 | uroporphyrinogen decarboxylase                                                   | 2  | 1  | 1  | 66   | 2.5  | 0.2   |
| Pput_4948 | 148550150 | glutamate synthase subunit beta                                                  | 2  | 4  | 3  | 104  | 6.4  | 0.39  |
| Pput_4949 | 148550151 | glutamate synthase subunit alpha                                                 | 5  | 15 | 13 | 596  | 8.8  | 0.42  |
| Pput_4950 | 148550152 | sporulation domain-containing protein                                            | 3  | 1  | 2  | 118  | 2.4  | 0.21  |
| Pput_4951 | 148550153 | 3-dehydroquinate synthase                                                        | 2  | 4  | 5  | 206  | 11   | 0.53  |
| Pput_4952 | 148550154 | shikimate kinase                                                                 | 3  | 2  | 3  | 177  | 12.2 | 1.36  |
| Pput_4954 | 148550156 | hypothetical protein Pput_4954                                                   | 1  | 1  | 1  | 27   | 2.7  | 0.1   |
| Pput_4957 | 148550159 | 1A family penicillin-binding protein                                             | 2  | 3  | 3  | 160  | 4.4  | 0.17  |
| Pput_4958 | 148550160 | malate dehydrogenase                                                             | 4  | 15 | 15 | 728  | 36.5 | 3.58  |

|           |           |                                                                   |    |    |    |      |      |      |
|-----------|-----------|-------------------------------------------------------------------|----|----|----|------|------|------|
| Pput_4959 | 148550161 | nuclease                                                          | 1  | 4  | 4  | 127  | 14.3 | 0.6  |
| Pput_4960 | 148550162 | ribosomal protein L31                                             | 1  | 1  | 1  | 38   | 10   | 0.36 |
| Pput_4962 | 148550164 | arginyl-tRNA synthetase                                           | 5  | 13 | 14 | 1000 | 23.4 | 2.44 |
| Pput_4967 | 148550169 | alanine racemase domain-containing protein                        | 2  | 4  | 4  | 353  | 18.4 | 1.34 |
| Pput_4968 | 148550170 | pyrroline-5-carboxylate reductase                                 | 5  | 7  | 9  | 888  | 25   | 3.93 |
| Pput_4970 | 148550172 | homoserine O-acetyltransferase                                    | 2  | 4  | 4  | 130  | 8.7  | 0.48 |
| Pput_4972 | 148550174 | hypothetical protein Pput_4972                                    | 1  | 1  | 1  | 31   | 8.3  | 0.25 |
| Pput_4976 | 148550178 | tRNA (guanine-N(7)-)-methyltransferase                            | 1  | 1  | 1  | 42   | 5    | 0.14 |
| Pput_4977 | 148550179 | thiazole synthase                                                 | 4  | 2  | 3  | 201  | 6.7  | 0.67 |
| Pput_4980 | 148550182 | monofunctional biosynthetic peptidoglycan transglycosylase        | 1  | 2  | 1  | 33   | 3.8  | 0.14 |
| Pput_4981 | 148550183 | RNA polymerase factor sigma-32                                    | 1  | 2  | 2  | 82   | 6.3  | 0.25 |
| Pput_4982 | 148550184 | hypothetical protein Pput_4982                                    | 1  | 2  | 2  | 63   | 6.2  | 0.21 |
| Pput_4983 | 148550185 | cell division ATP-binding protein FtsE                            | 2  | 4  | 3  | 123  | 15.7 | 0.7  |
| Pput_4984 | 148550186 | signal recognition particle-docking protein FtsY                  | 2  | 5  | 5  | 229  | 11.3 | 0.56 |
| Pput_4985 | 148550187 | peptidase M16 domain-containing protein                           | 2  | 5  | 5  | 140  | 12.4 | 0.5  |
| Pput_4986 | 148550188 | peptidase M16 domain-containing protein                           | 2  | 4  | 4  | 113  | 9.3  | 0.39 |
| Pput_4987 | 148550189 | putative methyltransferase                                        | 2  | 3  | 3  | 168  | 17.5 | 1.2  |
| Pput_4992 | 148550194 | rhodanese domain-containing protein                               | 4  | 7  | 6  | 465  | 24.6 | 1.93 |
| Pput_4997 | 148550199 | phosphopantetheine adenylyltransferase                            | 4  | 4  | 3  | 312  | 22.6 | 1.73 |
| Pput_4999 | 148550201 | formamidopyrimidine-DNA glycosylase                               | 2  | 3  | 4  | 82   | 10.7 | 0.54 |
| Pput_5001 | 148550203 | hypothetical protein Pput_5001                                    | 2  | 2  | 2  | 149  | 6.3  | 0.26 |
| Pput_5002 | 148550204 | dihydroxy-acid dehydratase                                        | 6  | 11 | 9  | 792  | 15.5 | 1.53 |
| Pput_5007 | 148550209 | GTP-binding protein, HSR1-related                                 | 2  | 4  | 4  | 166  | 8.6  | 0.57 |
| Pput_5011 | 148550213 | LysR family transcriptional regulator                             | 1  | 1  | 1  | 28   | 3.1  | 0.12 |
| Pput_5012 | 148550214 | heavy metal translocating P-type ATPase                           | 3  | 1  | 2  | 140  | 1.6  | 0.15 |
| Pput_5016 | 148550218 | hypothetical protein Pput_5016                                    | 1  | 2  | 2  | 55   | 3.3  | 0.13 |
| Pput_5026 | 148550228 | LysR family transcriptional regulator                             | 3  | 2  | 2  | 236  | 7.3  | 0.46 |
| Pput_5032 | 148550234 | hypothetical protein Pput_5032                                    | 1  | 1  | 1  | 30   | 1.9  | 0.06 |
| Pput_5037 | 148550237 | hypothetical protein Pput_5037                                    | 1  | 1  | 1  | 36   | 7.4  | 0.29 |
| Pput_5043 | 148550243 | thymidylate synthase                                              | 4  | 1  | 1  | 228  | 4    | 0.48 |
| Pput_5044 | 148550244 | hypothetical protein Pput_5044                                    | 1  | 1  | 1  | 28   | 5.9  | 0.2  |
| Pput_5045 | 148550245 | hypothetical protein Pput_5045                                    | 1  | 1  | 1  | 38   | 0.9  | 0.05 |
| Pput_5047 | 148550247 | phage integrase family protein                                    | 2  | 1  | 2  | 54   | 1.2  | 0.16 |
| Pput_5051 | 148550251 | hypothetical protein Pput_5051                                    | 1  | 1  | 1  | 30   | 5.6  | 0.14 |
| Pput_5052 | 148550252 | phosphoenolpyruvate-protein phosphotransferase PtsP               | 3  | 19 | 16 | 570  | 19.4 | 1.37 |
| Pput_5053 | 148550253 | dinucleoside polyphosphate hydrolase                              | 1  | 2  | 2  | 38   | 11.3 | 0.45 |
| Pput_5054 | 148550254 | HAD family hydrolase                                              | 2  | 1  | 2  | 91   | 4.1  | 0.3  |
| Pput_5059 | 148550259 | SdiA-regulated domain-containing protein                          | 3  | 1  | 1  | 120  | 3.3  | 0.33 |
| Pput_5060 | 148550260 | fumarylacetoacetate (FAA) hydrolase                               | 2  | 1  | 1  | 53   | 5    | 0.32 |
| Pput_5061 | 148550261 | FAD linked oxidase domain-containing protein                      | 2  | 2  | 2  | 105  | 4    | 0.22 |
| Pput_5062 | 148550262 | D-3-phosphoglycerate dehydrogenase                                | 7  | 7  | 9  | 957  | 17.1 | 2.85 |
| Pput_5067 | 148550267 | hypothetical protein Pput_5067                                    | 1  | 2  | 2  | 38   | 7.6  | 0.3  |
| Pput_5071 | 148550271 | peptidase S45, penicillin amidase                                 | 1  | 2  | 2  | 64   | 3.2  | 0.09 |
| Pput_5075 | 148550275 | sulfate ABC transporter, ATPase subunit                           | 3  | 3  | 2  | 259  | 7.9  | 0.65 |
| Pput_5078 | 148550278 | sulfate ABC transporter, periplasmic sulfate-binding protein      | 1  | 1  | 1  | 30   | 2.7  | 0.1  |
| Pput_5080 | 148550280 | acriflavin resistance protein                                     | 10 | 2  | 2  | 556  | 1.9  | 0.42 |
| Pput_5081 | 148550281 | RND family efflux transporter MFP subunit                         | 1  | 2  | 2  | 81   | 6.2  | 0.21 |
| Pput_5082 | 148550282 | RND family efflux transporter MFP subunit                         | 2  | 3  | 3  | 230  | 11   | 0.53 |
| Pput_5086 | 148550286 | spermidine/putrescine ABC transporter ATPase subunit              | 3  | 10 | 8  | 266  | 20.8 | 1.4  |
| Pput_5087 | 148550287 | extracellular solute-binding protein                              | 2  | 2  | 1  | 110  | 2.7  | 0.29 |
| Pput_5088 | 148550288 | extracellular solute-binding protein                              | 4  | 12 | 12 | 698  | 23.3 | 4.22 |
| Pput_5089 | 148550289 | putative aminotransferase                                         | 2  | 2  | 2  | 77   | 3.1  | 0.22 |
| Pput_5090 | 148550290 | glutamate--putrescine ligase                                      | 2  | 2  | 3  | 116  | 4.6  | 0.22 |
| Pput_5091 | 148550291 | glutamate--putrescine ligase                                      | 2  | 3  | 3  | 81   | 4.6  | 0.3  |
| Pput_5092 | 148550292 | N-acetylglutamate synthase                                        | 2  | 5  | 5  | 117  | 8.3  | 0.62 |
| Pput_5093 | 148550293 | acetylornithine deacetylase                                       | 3  | 3  | 3  | 156  | 9.5  | 0.47 |
| Pput_5094 | 148550294 | adenylate cyclase                                                 | 1  | 1  | 1  | 68   | 2.6  | 0.07 |
| Pput_5100 | 148550300 | glycine cleavage system protein H                                 | 1  | 1  | 1  | 50   | 7.1  | 0.29 |
| Pput_5101 | 148550301 | glycine cleavage system aminomethyltransferase T                  | 2  | 2  | 5  | 249  | 8.1  | 0.78 |
| Pput_5104 | 148550304 | 2-octaprenyl-3-methyl-6-methoxy-1,4-benzoquinol hydroxylase       | 2  | 10 | 9  | 441  | 20.9 | 1.07 |
| Pput_5106 | 148550306 | 2-octaprenyl-6-methoxyphenyl hydroxylase                          | 1  | 7  | 5  | 220  | 17.8 | 0.63 |
| Pput_5107 | 148550307 | peptidase M24                                                     | 2  | 4  | 5  | 196  | 8.6  | 0.68 |
| Pput_5110 | 148550310 | hypothetical protein Pput_5110                                    | 1  | 1  | 1  | 31   | 9.4  | 0.33 |
| Pput_5111 | 148550311 | 5-formyltetrahydrofolate cyclo-ligase                             | 2  | 3  | 3  | 127  | 14.4 | 0.72 |
| Pput_5114 | 148550314 | secretion protein HlyD family protein                             | 2  | 6  | 7  | 217  | 22.6 | 0.97 |
| Pput_5119 | 148550319 | alcohol dehydrogenase                                             | 1  | 1  | 1  | 29   | 1.5  | 0.11 |
| Pput_5122 | 148550322 | UbiD family decarboxylase                                         | 4  | 4  | 4  | 182  | 4.9  | 0.43 |
| Pput_5123 | 148550323 | transcription termination factor Rho                              | 4  | 17 | 16 | 703  | 37.5 | 4.12 |
| Pput_5124 | 148550324 | thioredoxin                                                       | 1  | 3  | 3  | 112  | 33.9 | 1.37 |
| Pput_5125 | 148550325 | Ppx/GppA phosphatase                                              | 3  | 9  | 11 | 386  | 10.8 | 1.59 |
| Pput_5126 | 148550326 | polyphosphate kinase                                              | 7  | 8  | 8  | 545  | 9.1  | 0.91 |
| Pput_5127 | 148550327 | hypothetical protein Pput_5127                                    | 1  | 1  | 1  | 25   | 7    | 0.16 |
| Pput_5129 | 148550329 | isoprenoid biosynthesis protein with amidotransferase-like domain | 3  | 1  | 2  | 84   | 3.7  | 0.48 |
| Pput_5131 | 148550331 | adenylate cyclase                                                 | 1  | 1  | 1  | 28   | 0.9  | 0.03 |
| Pput_5136 | 148550336 | diaminopimelate decarboxylase                                     | 1  | 4  | 4  | 85   | 9.6  | 0.37 |
| Pput_5137 | 148550337 | diaminopimelate epimerase                                         | 2  | 1  | 3  | 192  | 4    | 0.54 |
| Pput_5140 | 148550340 | HAD family hydrolase                                              | 3  | 4  | 3  | 208  | 13.9 | 1.21 |
| Pput_5142 | 148550342 | ammonium transporter                                              | 7  | 1  | 2  | 475  | 4.1  | 0.65 |
| Pput_5143 | 148550343 | nitrogen regulatory protein P-II                                  | 2  | 7  | 4  | 189  | 29.5 | 5.63 |
| Pput_5145 | 148550345 | hypothetical protein Pput_5145                                    | 1  | 1  | 1  | 25   | 11.1 | 0.31 |
| Pput_5152 | 148550352 | ATPase domain-containing protein                                  | 1  | 1  | 1  | 29   | 0.5  | 0.02 |
| Pput_5161 | 148550361 | protein of unknown function DUF894, DitE                          | 1  | 1  | 1  | 28   | 1.9  | 0.06 |
| Pput_5162 | 148550362 | amidohydrolase 3                                                  | 4  | 6  | 8  | 358  | 10.5 | 0.73 |
| Pput_5168 | 148550368 | aldehyde dehydrogenase                                            | 2  | 9  | 10 | 416  | 19   | 1.06 |
| Pput_5169 | 148550369 | LysR family transcriptional regulator                             | 1  | 1  | 1  | 53   | 5.4  | 0.11 |
| Pput_5170 | 148550370 | hypothetical protein Pput_5170                                    | 1  | 1  | 1  | 70   | 2.6  | 0.07 |
| Pput_5173 | 148550373 | diguanylate cyclase/phosphodiesterase                             | 1  | 1  | 1  | 54   | 1.6  | 0.06 |
| Pput_5174 | 148550374 | ATP-dependent DNA helicase Rep                                    | 1  | 2  | 1  | 33   | 0.9  | 0.05 |
| Pput_5175 | 148550375 | xanthine phosphoribosyltransferase                                | 2  | 3  | 4  | 156  | 18.4 | 1.36 |

|           |           |                                                                                      |    |    |    |      |      |       |
|-----------|-----------|--------------------------------------------------------------------------------------|----|----|----|------|------|-------|
| Pput_5179 | 148550379 | alanine racemase                                                                     | 1  | 4  | 4  | 123  | 11.5 | 0.44  |
| Pput_5180 | 148550380 | D-amino acid dehydrogenase small subunit                                             | 3  | 1  | 2  | 132  | 2.1  | 0.24  |
| Pput_5181 | 148550381 | AsnC family transcriptional regulator                                                | 3  | 1  | 2  | 120  | 4.9  | 0.6   |
| Pput_5182 | 148550382 | hypothetical protein Pput_5182                                                       | 1  | 1  | 1  | 40   | 10.3 | 0.29  |
| Pput_5183 | 148550383 | FAD dependent oxidoreductase                                                         | 1  | 1  | 1  | 29   | 2.1  | 0.08  |
| Pput_5188 | 148550388 | aldehyde dehydrogenase                                                               | 3  | 5  | 5  | 421  | 11   | 0.66  |
| Pput_5192 | 148550392 | 50S ribosomal protein L28                                                            | 5  | 11 | 8  | 540  | 55.1 | 22.19 |
| Pput_5193 | 148550393 | extracellular solute-binding protein                                                 | 2  | 8  | 9  | 511  | 13.8 | 1.2   |
| Pput_5195 | 148550395 | bifunctional phosphopantothienoylcysteine decarboxylase/phosphopantothenate synthase | 2  | 9  | 9  | 308  | 22.8 | 1.2   |
| Pput_5196 | 148550396 | deoxyuridine 5~-triphosphate nucleotidohydrolase                                     | 2  | 2  | 2  | 101  | 15.2 | 0.79  |
| Pput_5198 | 148550398 | acetylglutamate kinase                                                               | 2  | 3  | 2  | 200  | 5.6  | 0.52  |
| Pput_5199 | 148550399 | orotate phosphoribosyltransferase                                                    | 2  | 4  | 5  | 210  | 12.7 | 1.68  |
| Pput_5200 | 148550400 | exodeoxyribonuclease III Xth                                                         | 2  | 3  | 3  | 151  | 15.4 | 0.7   |
| Pput_5203 | 148550403 | hypothetical protein Pput_5203                                                       | 5  | 11 | 10 | 672  | 25.4 | 4.59  |
| Pput_5204 | 148550404 | guanylate kinase                                                                     | 3  | 3  | 3  | 211  | 13.1 | 1.1   |
| Pput_5209 | 148550409 | LysR family transcriptional regulator                                                | 5  | 1  | 2  | 165  | 2.9  | 0.5   |
| Pput_5210 | 148550410 | DNA-directed RNA polymerase subunit omega                                            | 3  | 2  | 2  | 139  | 27.6 | 1.82  |
| Pput_5211 | 148550411 | (p)ppGpp synthetase I, SpoT/RelA                                                     | 3  | 7  | 8  | 290  | 8.5  | 0.53  |
| Pput_5212 | 148550412 | putative endoribonuclease L-PSP                                                      | 1  | 3  | 3  | 111  | 27.8 | 1.15  |
| Pput_5214 | 148550414 | NAD-dependent epimerase/dehydratase                                                  | 3  | 2  | 2  | 140  | 8.4  | 0.5   |
| Pput_5218 | 148550418 | LysR family transcriptional regulator                                                | 3  | 5  | 5  | 399  | 14.9 | 1.44  |
| Pput_5219 | 148550419 | ATP-dependent DNA helicase RecG                                                      | 1  | 3  | 3  | 103  | 4.3  | 0.15  |
| Pput_5220 | 148550420 | putative signal transduction protein                                                 | 1  | 4  | 4  | 65   | 8.8  | 0.32  |
| Pput_5222 | 148550422 | histone family protein DNA-binding protein                                           | 3  | 9  | 6  | 327  | 37.4 | 10.17 |
| Pput_5228 | 148550428 | two component transcriptional regulator                                              | 1  | 2  | 2  | 57   | 11.4 | 0.32  |
| Pput_5233 | 148550433 | phosphate uptake regulator, PhoU                                                     | 3  | 3  | 7  | 240  | 12.1 | 1.94  |
| Pput_5234 | 148550434 | phosphate ABC transporter, ATPase subunit                                            | 2  | 2  | 2  | 86   | 7.6  | 0.38  |
| Pput_5236 | 148550436 | binding-protein-dependent transport systems inner membrane component                 | 1  | 1  | 1  | 28   | 2    | 0.04  |
| Pput_5239 | 148550439 | thioesterase superfamily protein                                                     | 1  | 1  | 1  | 29   | 6.1  | 0.27  |
| Pput_5240 | 148550440 | aldose 1-epimerase                                                                   | 4  | 3  | 3  | 265  | 11.7 | 0.97  |
| Pput_5243 | 148550443 | phosphoribosylaminoimidazole carboxylase ATPase subunit                              | 2  | 7  | 6  | 354  | 18.6 | 1.32  |
| Pput_5244 | 148550444 | phosphoribosylaminoimidazole carboxylase, catalytic subunit                          | 2  | 2  | 2  | 145  | 19   | 0.74  |
| Pput_5246 | 148550446 | LysR family transcriptional regulator                                                | 1  | 1  | 1  | 53   | 2.9  | 0.11  |
| Pput_5249 | 148550449 | histone deacetylase superfamily protein                                              | 2  | 2  | 3  | 169  | 9.8  | 0.31  |
| Pput_5250 | 148550450 | extracellular solute-binding protein                                                 | 2  | 4  | 4  | 154  | 12.5 | 0.61  |
| Pput_5255 | 148550455 | pyruvate carboxylase subunit B                                                       | 10 | 15 | 15 | 1187 | 14.1 | 2.8   |
| Pput_5256 | 148550456 | acetyl-CoA carboxylase subunit A                                                     | 4  | 15 | 11 | 540  | 23.1 | 2.08  |
| Pput_5258 | 148550458 | RpiR family transcriptional regulator                                                | 2  | 2  | 2  | 131  | 6.9  | 0.52  |
| Pput_5259 | 148550459 | glucose-6-phosphate 1-dehydrogenase                                                  | 1  | 4  | 3  | 72   | 6.3  | 0.22  |
| Pput_5260 | 148550460 | DNA-dependent helicase II                                                            | 1  | 11 | 9  | 162  | 11.4 | 0.56  |
| Pput_5261 | 148550461 | import inner membrane translocase, subunit Tim44                                     | 2  | 2  | 3  | 192  | 8.4  | 0.37  |
| Pput_5264 | 148550464 | thioesterase superfamily protein                                                     | 1  | 1  | 1  | 30   | 5    | 0.21  |
| Pput_5265 | 148550465 | pyridoxamine kinase                                                                  | 2  | 1  | 2  | 66   | 5.5  | 0.24  |
| Pput_5273 | 148550473 | cyclopropane-fatty-acyl-phospholipid synthase                                        | 2  | 3  | 2  | 130  | 3.1  | 0.32  |
| Pput_5274 | 148550474 | dihydrolipoamide dehydrogenase                                                       | 2  | 2  | 2  | 163  | 1.9  | 0.24  |
| Pput_5277 | 148550477 | major facilitator transporter                                                        | 1  | 1  | 1  | 26   | 3.2  | 0.08  |
| Pput_5278 | 148550478 | short-chain dehydrogenase/reductase SDR                                              | 3  | 4  | 4  | 233  | 18.1 | 1.03  |
| Pput_5279 | 148550479 | LysR family transcriptional regulator                                                | 2  | 1  | 1  | 59   | 3.6  | 0.22  |
| Pput_5282 | 148550482 | dihydrodipicolinate synthetase                                                       | 1  | 1  | 1  | 29   | 1.9  | 0.11  |
| Pput_5291 | 148550491 | glucosamine--fructose-6-phosphate aminotransferase                                   | 2  | 1  | 2  | 95   | 2.9  | 0.17  |
| Pput_5293 | 148550493 | UDP-N-acetylglucosamine pyrophosphorylase                                            | 3  | 2  | 4  | 134  | 2.9  | 0.4   |
| Pput_5294 | 148550494 | FOF1 ATP synthase subunit epsilon                                                    | 2  | 2  | 2  | 129  | 12.2 | 1.22  |
| Pput_5295 | 148550495 | FOF1 ATP synthase subunit beta                                                       | 8  | 45 | 20 | 1984 | 56.6 | 10.1  |
| Pput_5296 | 148550496 | FOF1 ATP synthase subunit gamma                                                      | 6  | 15 | 14 | 1136 | 45.1 | 8.95  |
| Pput_5297 | 148550497 | FOF1 ATP synthase subunit alpha                                                      | 27 | 46 | 31 | 3171 | 46.9 | 16.11 |
| Pput_5298 | 148550498 | FOF1 ATP synthase subunit delta                                                      | 2  | 3  | 3  | 243  | 12.9 | 1.17  |
| Pput_5299 | 148550499 | FOF1 ATP synthase subunit B                                                          | 20 | 13 | 10 | 2952 | 43.6 | 30.96 |
| Pput_5303 | 148550503 | parB-like partition protein                                                          | 2  | 7  | 6  | 122  | 25.2 | 1.28  |
| Pput_5304 | 148550504 | cobyrinic acid a,c-diamide synthase                                                  | 1  | 1  | 1  | 33   | 4.6  | 0.13  |
| Pput_5305 | 148550505 | 16S rRNA methyltransferase GidB                                                      | 1  | 3  | 3  | 121  | 21.3 | 0.55  |
| Pput_5308 | 148550508 | tRNA modification GTPase TrmE                                                        | 2  | 7  | 8  | 265  | 14.3 | 1.01  |
| Pput_5309 | 148550509 | putative inner membrane protein translocase component YidC                           | 9  | 4  | 6  | 877  | 8.8  | 0.93  |
| Pput_5311 | 148550511 | ribonuclease P                                                                       | 1  | 1  | 1  | 77   | 14.2 | 0.26  |