



# 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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| File Information | AM_Kasahara_TS4.pdf, Supplementary Material Table S4                                                                                            |



Table S4. Exponentially modified protein abundance index (emPAI) and protein content (PC) of the identified proteins in E0, E6, and E18 samples.

| Pput name | Accession # | Protein name                                                 | emPAI |      |      | Protein content (mol%) |       |       |
|-----------|-------------|--------------------------------------------------------------|-------|------|------|------------------------|-------|-------|
|           |             |                                                              | E0    | E6   | E18  | E0                     | E6    | E18   |
| Pput_0001 | 148545260   | chromosomal replication initiation protein                   | 0.43  | 0.21 | 0    | 0.003                  | 0.009 | 0.000 |
| Pput_0002 | 148545261   | DNA polymerase III subunit beta                              | 2.31  | 1.41 | 3.04 | 0.017                  | 0.062 | 0.049 |
| Pput_0003 | 148545262   | recombination protein F                                      | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0004 | 148545263   | DNA gyrase subunit B                                         | 0.5   | 0    | 0.34 | 0.004                  | 0.000 | 0.005 |
| Pput_0005 | 148545264   | hypothetical protein Pput_0005                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0006 | 148545265   | integrase catalytic subunit                                  | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0007 | 148545266   | AAA ATPase                                                   | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0008 | 148545267   | hypothetical protein Pput_0008                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0009 | 148545268   | hypothetical protein Pput_0009                               | 0     | 0    | 0.88 | 0.000                  | 0.000 | 0.014 |
| Pput_0010 | 148545269   | hypothetical protein Pput_0010                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0011 | 148545270   | hypothetical protein Pput_0011                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0012 | 148545271   | hypothetical protein Pput_0012                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0013 | 148545272   | copper resistance B precursor                                | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0014 | 148545273   | hypothetical protein Pput_0014                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0015 | 148545274   | CopA family copper resistance protein                        | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0016 | 148545275   | hypothetical protein Pput_0016                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0017 | 148545276   | two component heavy metal response transcriptional regulator | 0     | 0    | 0.32 | 0.000                  | 0.000 | 0.005 |
| Pput_0018 | 148545277   | heavy metal sensor signal transduction histidine kinase      | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0019 | 148545278   | hypothetical protein Pput_0019                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0020 | 148545279   | outer membrane efflux protein                                | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0021 | 148545280   | RND family efflux transporter MFP subunit                    | 0     | 0    | 0.21 | 0.000                  | 0.000 | 0.003 |
| Pput_0022 | 148545281   | CzcA family heavy metal efflux protein                       | 0.06  | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0023 | 148545282   | hypothetical protein Pput_0023                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0025 | 148545283   | S-isoprenylcysteine methyltransferase-like protein           | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0026 | 148545284   | hypothetical protein Pput_0026                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0027 | 148545285   | hypothetical protein Pput_0027                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0028 | 148545286   | YVTN beta-propeller repeat-containing protein                | 0.36  | 0    | 2    | 0.003                  | 0.000 | 0.032 |
| Pput_0029 | 148545287   | heavy metal transport/detoxification protein                 | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0030 | 148545288   | copper-translocating P-type ATPase                           | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0031 | 148545289   | hypothetical protein Pput_0031                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0033 | 148545290   | hypothetical protein Pput_0033                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0034 | 148545291   | hypothetical protein Pput_0034                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0035 | 148545292   | hypothetical protein Pput_0035                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0036 | 148545293   | hypothetical protein Pput_0036                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0037 | 148545294   | hypothetical protein Pput_0037                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0038 | 148545295   | hypothetical protein Pput_0038                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0039 | 148545296   | hypothetical protein Pput_0039                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0040 | 148545297   | cation diffusion facilitator family transporter              | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0041 | 148545298   | hypothetical protein Pput_0041                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0042 | 148545299   | hypothetical protein Pput_0042                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0043 | 148545300   | two component heavy metal response transcriptional regulator | 0.52  | 0.52 | 1    | 0.004                  | 0.023 | 0.016 |
| Pput_0044 | 148545301   | heavy metal sensor signal transduction histidine kinase      | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0045 | 148545302   | hypothetical protein Pput_0045                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0046 | 148545303   | hypothetical protein Pput_0046                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0047 | 148545304   | glycosyl transferase family protein                          | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0048 | 148545305   | ribonuclease III                                             | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0049 | 148545306   | GtrA family protein                                          | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0050 | 148545307   | LysR family transcriptional regulator                        | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0051 | 148545308   | phosphate-selective porin O and P                            | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0052 | 148545309   | hypothetical protein Pput_0052                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0053 | 148545310   | hypothetical protein Pput_0053                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0054 | 148545311   | hypothetical protein Pput_0054                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0055 | 148545312   | heavy metal translocating P-type ATPase                      | 0.25  | 0    | 0    | 0.002                  | 0.000 | 0.000 |
| Pput_0056 | 148545313   | hypothetical protein Pput_0056                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0057 | 148545314   | CzcA family heavy metal efflux protein                       | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0058 | 148545315   | RND family efflux transporter MFP subunit                    | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0059 | 148545316   | outer membrane efflux protein                                | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0060 | 148545317   | outer membrane porin                                         | 0.4   | 0    | 0    | 0.003                  | 0.000 | 0.000 |
| Pput_0061 | 148545318   | two component heavy metal response transcriptional regulator | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0062 | 148545319   | hypothetical protein Pput_0062                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0063 | 148545320   | hypothetical protein Pput_0063                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0064 | 148545321   | hypothetical protein Pput_0064                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0065 | 148545322   | hypothetical protein Pput_0065                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0066 | 148545323   | hypothetical protein Pput_0066                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0067 | 148545324   | sigma-54 dependent transcriptional regulator                 | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0068 | 148545325   | beta-lactamase domain-containing protein                     | 0.93  | 0    | 0.89 | 0.007                  | 0.000 | 0.014 |
| Pput_0069 | 148545326   | FAD-dependent pyridine nucleotide-disulphide oxidoreductase  | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0070 | 148545327   | hypothetical protein Pput_0070                               | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0071 | 148545328   | LysR family transcriptional regulator                        | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0072 | 148545329   | glucose-methanol-choline oxidoreductase                      | 0.13  | 0    | 0    | 0.001                  | 0.000 | 0.000 |
| Pput_0073 | 148545330   | general substrate transporter                                | 0     | 0.06 | 0    | 0.000                  | 0.003 | 0.000 |
| Pput_0074 | 148545331   | phospholipid/glycerol acyltransferase                        | 0     | 0.28 | 0.54 | 0.000                  | 0.012 | 0.009 |
| Pput_0075 | 148545332   | D,D-heptose 1,7-bisphosphate phosphatase                     | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0076 | 148545333   | glycyl-tRNA synthetase subunit beta                          | 1.64  | 0.4  | 0.94 | 0.012                  | 0.018 | 0.015 |
| Pput_0077 | 148545334   | glycyl-tRNA synthetase subunit alpha                         | 0.81  | 0.44 | 1.5  | 0.006                  | 0.019 | 0.024 |
| Pput_0078 | 148545335   | DNA-3-methyladenine glycosylase I                            | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0079 | 148545336   | lipid A biosynthesis lauroyl acyltransferase                 | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0080 | 148545337   | TPR repeat-containing protein                                | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0081 | 148545338   | potassium transporter peripheral membrane component          | 0.66  | 0.16 | 0.51 | 0.005                  | 0.007 | 0.008 |
| Pput_0082 | 148545339   | sun protein                                                  | 0     | 0    | 0    | 0.000                  | 0.000 | 0.000 |
| Pput_0083 | 148545340   | methionyl-tRNA formyltransferase                             | 0.24  | 0    | 0    | 0.002                  | 0.000 | 0.000 |
| Pput_0084 | 148545341   | peptide deformylase                                          | 2.37  | 0    | 0.43 | 0.018                  | 0.000 | 0.007 |

|           |           |                                                                            |      |      |      |       |       |       |
|-----------|-----------|----------------------------------------------------------------------------|------|------|------|-------|-------|-------|
| Pput_0085 | 148545342 | DNA protecting protein DprA                                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0086 | 148545343 | SUA5/yciO/yrdC domain-containing protein                                   | 0.6  | 0.41 | 1.23 | 0.005 | 0.018 | 0.020 |
| Pput_0087 | 148545344 | hypothetical protein Pput_0087                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0088 | 148545345 | alcohol dehydrogenase                                                      | 1.74 | 0    | 1.58 | 0.013 | 0.000 | 0.025 |
| Pput_0089 | 148545346 | coproporphyrinogen III oxidase                                             | 0.62 | 0.11 | 0.34 | 0.005 | 0.005 | 0.005 |
| Pput_0090 | 148545347 | shikimate 5-dehydrogenase                                                  | 0.27 | 0.27 | 0.4  | 0.002 | 0.012 | 0.006 |
| Pput_0091 | 148545348 | sulphate transporter                                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0092 | 148545349 | substrate-binding region of ABC-type glycine betaine transport system      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0093 | 148545350 | sulfatase                                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0094 | 148545351 | LysR family transcriptional regulator                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0095 | 148545352 | hypothetical protein Pput_0095                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0096 | 148545353 | DOPA 4,5-dioxygenase                                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0097 | 148545354 | tryptophan synthase subunit alpha                                          | 3.15 | 0.65 | 4.18 | 0.024 | 0.028 | 0.067 |
| Pput_0098 | 148545355 | tryptophan synthase subunit beta                                           | 0    | 0.08 | 0.94 | 0.000 | 0.004 | 0.015 |
| Pput_0099 | 148545356 | LysR family transcriptional regulator                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0100 | 148545357 | protein of unknown function DUF883, ElaB                                   | 2.46 | 0    | 0    | 0.019 | 0.000 | 0.000 |
| Pput_0101 | 148545358 | hypothetical protein Pput_0101                                             | 5.31 | 0    | 0    | 0.040 | 0.000 | 0.000 |
| Pput_0102 | 148545359 | hypothetical protein Pput_0102                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0103 | 148545360 | luciferase family protein                                                  | 0.47 | 0.63 | 2.37 | 0.004 | 0.028 | 0.038 |
| Pput_0104 | 148545361 | OsmC family protein                                                        | 4.43 | 0    | 0    | 0.034 | 0.000 | 0.000 |
| Pput_0105 | 148545362 | hypothetical protein Pput_0105                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0106 | 148545363 | hypothetical protein Pput_0106                                             | 9.5  | 0    | 5.92 | 0.072 | 0.000 | 0.095 |
| Pput_0107 | 148545364 | hypothetical protein Pput_0107                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0108 | 148545365 | hypothetical protein Pput_0108                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0109 | 148545366 | HAD family hydrolase                                                       | 0.49 | 0    | 0.28 | 0.004 | 0.000 | 0.004 |
| Pput_0110 | 148545367 | carbonic anhydrase                                                         | 0.71 | 0    | 0.43 | 0.005 | 0.000 | 0.007 |
| Pput_0111 | 148545368 | oligopeptidase A                                                           | 1    | 0.26 | 0.75 | 0.008 | 0.011 | 0.012 |
| Pput_0112 | 148545369 | nucleic acid binding protein                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0113 | 148545370 | peptidase M3A and M3B, thimet/oligopeptidase F                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0114 | 148545371 | radical SAM domain-containing protein                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0115 | 148545372 | carbonate dehydratase                                                      | 6.68 | 3.41 | 9.31 | 0.051 | 0.149 | 0.149 |
| Pput_0116 | 148545373 | sulphate transporter                                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0117 | 148545374 | hypothetical protein Pput_0117                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0118 | 148545375 | hypothetical protein Pput_0118                                             | 0.56 | 0    | 1.07 | 0.004 | 0.000 | 0.017 |
| Pput_0119 | 148545376 | cytochrome c oxidase, subunit II                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0120 | 148545377 | cytochrome c oxidase, subunit I                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0121 | 148545378 | cytochrome C oxidase assembly protein                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0122 | 148545379 | cytochrome c oxidase, subunit III                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0123 | 148545380 | hypothetical protein Pput_0123                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0124 | 148545381 | hypothetical protein Pput_0124                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0125 | 148545382 | hypothetical protein Pput_0125                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0126 | 148545383 | cytochrome oxidase assembly                                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0127 | 148545384 | protoheme IX farnesyltransferase                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0128 | 148545385 | electron transport protein SCO1/SenC                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0129 | 148545386 | NLPA lipoprotein                                                           | 1.3  | 0    | 0.94 | 0.010 | 0.000 | 0.015 |
| Pput_0130 | 148545387 | binding-protein-dependent transport systems inner membrane component       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0131 | 148545388 | ABC transporter related                                                    | 0.2  | 0    | 0.2  | 0.002 | 0.000 | 0.003 |
| Pput_0132 | 148545389 | hydroperoxidase II                                                         | 0.72 | 0    | 0    | 0.005 | 0.000 | 0.000 |
| Pput_0133 | 148545390 | hypothetical protein Pput_0133                                             | 2.17 | 1.63 | 3.42 | 0.016 | 0.071 | 0.055 |
| Pput_0134 | 148545391 | ABC-3 protein                                                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0135 | 148545392 | ABC transporter related                                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0136 | 148545393 | ferric uptake regulator family protein                                     | 0.42 | 0    | 0    | 0.003 | 0.000 | 0.000 |
| Pput_0137 | 148545394 | periplasmic solute binding protein                                         | 0.49 | 0    | 0.46 | 0.004 | 0.000 | 0.007 |
| Pput_0138 | 148545395 | homoserine kinase                                                          | 0.81 | 0    | 0.22 | 0.006 | 0.000 | 0.004 |
| Pput_0139 | 148545396 | hypothetical protein Pput_0139                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0140 | 148545397 | DNA polymerase I                                                           | 0.12 | 0    | 0.48 | 0.001 | 0.000 | 0.008 |
| Pput_0141 | 148545398 | ribosome biogenesis GTP-binding protein YsxC                               | 1.8  | 1.45 | 2.38 | 0.014 | 0.063 | 0.038 |
| Pput_0142 | 148545399 | cytochrome c5-like protein                                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0143 | 148545400 | cytochrome c, class I                                                      | 0    | 0    | 0.36 | 0.000 | 0.000 | 0.006 |
| Pput_0144 | 148545401 | DSBA oxidoreductase                                                        | 0.32 | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_0145 | 148545402 | endonuclease/exonuclease/phosphatase                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0146 | 148545403 | diguanylate cyclase                                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0147 | 148545404 | N-acetylmuramoyl-L-alanine amidase                                         | 0    | 0.27 | 1.9  | 0.000 | 0.012 | 0.030 |
| Pput_0148 | 148545405 | EAL domain-containing protein                                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0149 | 148545406 | multi-sensor signal transduction histidine kinase                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0150 | 148545407 | two component, sigma54 specific, Fis family transcriptional regulator      | 0    | 0.16 | 0.24 | 0.000 | 0.007 | 0.004 |
| Pput_0151 | 148545408 | transport-associated                                                       | 0.62 | 0    | 0.89 | 0.005 | 0.000 | 0.014 |
| Pput_0152 | 148545409 | hypothetical protein Pput_0152                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0153 | 148545410 | hypothetical protein Pput_0153                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0154 | 148545411 | inhibitor of vertebrate lysozyme                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0155 | 148545412 | glutamate/aspartate:proton symporter                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0156 | 148545413 | nucleoside recognition domain-containing protein                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0157 | 148545414 | ABC-type uncharacterized transport system auxiliary component-like protein | 0    | 0    | 0.58 | 0.000 | 0.000 | 0.009 |
| Pput_0158 | 148545415 | hypothetical protein Pput_0158                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0159 | 148545416 | ABC transporter related                                                    | 0    | 0    | 0.28 | 0.000 | 0.000 | 0.004 |
| Pput_0160 | 148545417 | hypothetical protein Pput_0160                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0161 | 148545418 | hypothetical protein Pput_0161                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0162 | 148545419 | peptidase M16 domain-containing protein                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0163 | 148545420 | sodium-dependent inorganic phosphate (Pi) transporter                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0164 | 148545421 | integral membrane protein TerC                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0165 | 148545422 | CitMHS family citrate/H+ symporter                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0166 | 148545423 | glutathione-dependent formaldehyde-activating, GFA                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0167 | 148545424 | hypothetical protein Pput_0167                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0168 | 148545425 | hypothetical protein Pput_0168                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0169 | 148545426 | hypothetical protein Pput_0169                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0170 | 148545427 | hypothetical protein Pput_0170                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0171 | 148545428 | hypothetical protein Pput_0171                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0172 | 148545429 | Acetyl-CoA hydrolase                                                       | 0    | 0    | 0.14 | 0.000 | 0.000 | 0.002 |
| Pput_0173 | 148545430 | NAD(P)(+) transhydrogenase (AB-specific)                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |

|           |           |                                                                                         |      |      |      |       |       |       |
|-----------|-----------|-----------------------------------------------------------------------------------------|------|------|------|-------|-------|-------|
| Pput_0174 | 148545431 | NAD/NADP transhydrogenase alpha subunit-like protein                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0175 | 148545432 | NAD(P)(+) transhydrogenase (AB-specific)                                                | 0.44 | 0.44 | 0.52 | 0.003 | 0.019 | 0.008 |
| Pput_0176 | 148545433 | LysR family transcriptional regulator                                                   | 0    | 0    | 0.22 | 0.000 | 0.000 | 0.004 |
| Pput_0177 | 148545434 | acyl-CoA dehydrogenase domain-containing protein                                        | 0    | 0.18 | 1.28 | 0.000 | 0.008 | 0.020 |
| Pput_0178 | 148545435 | Formyl-CoA transferase                                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0179 | 148545436 | TonB-dependent siderophore receptor                                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0180 | 148545437 | anti-FecI sigma factor, FecR                                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0181 | 148545438 | ECF subfamily RNA polymerase sigma-24 factor                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0182 | 148545439 | GntR family transcriptional regulator                                                   | 0.74 | 0.52 | 1.45 | 0.006 | 0.023 | 0.023 |
| Pput_0183 | 148545440 | hypothetical protein Pput_0183                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0184 | 148545441 | diguanylate cyclase/phosphodiesterase                                                   | 0.21 | 0.11 | 0.57 | 0.002 | 0.005 | 0.009 |
| Pput_0185 | 148545442 | HlyD family type I secretion membrane fusion protein                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0186 | 148545443 | ABC transporter related                                                                 | 0    | 0.05 | 0.2  | 0.000 | 0.002 | 0.003 |
| Pput_0187 | 148545444 | hypothetical protein Pput_0187                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0188 | 148545445 | hypothetical protein Pput_0188                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0189 | 148545446 | hypothetical protein Pput_0189                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0190 | 148545447 | taurine dioxygenase                                                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0191 | 148545448 | ABC transporter periplasmic-binding protein                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0192 | 148545449 | ABC transporter related                                                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0193 | 148545450 | binding-protein-dependent transport systems inner membrane component                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0194 | 148545451 | hypothetical protein Pput_0194                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0195 | 148545452 | Sel1 domain-containing protein                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0196 | 148545453 | MarR family transcriptional regulator                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0197 | 148545454 | fusaric acid resistance protein region                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0198 | 148545455 | hypothetical protein Pput_0198                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0199 | 148545456 | secretion protein HlyD family protein                                                   | 0.74 | 0.39 | 0.5  | 0.006 | 0.017 | 0.008 |
| Pput_0200 | 148545457 | RND efflux system outer membrane lipoprotein                                            | 0    | 0.15 | 0    | 0.000 | 0.007 | 0.000 |
| Pput_0201 | 148545458 | hypothetical protein Pput_0201                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0202 | 148545459 | cytochrome c, class I                                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0203 | 148545460 | hypothetical protein Pput_0203                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0204 | 148545461 | hypothetical protein Pput_0204                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0205 | 148545462 | glutathione S-transferase domain-containing protein                                     | 2.83 | 0.54 | 0.78 | 0.021 | 0.024 | 0.012 |
| Pput_0206 | 148545463 | argininosuccinate lyase                                                                 | 1.45 | 0.38 | 1.12 | 0.011 | 0.017 | 0.018 |
| Pput_0207 | 148545464 | LytTR family two component transcriptional regulator                                    | 0.91 | 0.91 | 3.91 | 0.007 | 0.040 | 0.062 |
| Pput_0208 | 148545465 | porphobilinogen deaminase                                                               | 0.37 | 0    | 0.59 | 0.003 | 0.000 | 0.009 |
| Pput_0209 | 148545466 | uroporphyrinogen-III synthase                                                           | 0    | 0    | 0.48 | 0.000 | 0.000 | 0.008 |
| Pput_0210 | 148545467 | protein of unknown function DUF513, hemX                                                | 1.2  | 0.89 | 2.61 | 0.009 | 0.039 | 0.042 |
| Pput_0211 | 148545468 | HemY domain-containing protein                                                          | 0.9  | 1.55 | 2.74 | 0.007 | 0.068 | 0.044 |
| Pput_0212 | 148545469 | disulphide bond formation protein DsbB                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0213 | 148545470 | anti-RNA polymerase sigma 70 factor                                                     | 2.96 | 0    | 0.94 | 0.022 | 0.000 | 0.015 |
| Pput_0214 | 148545471 | peptidylprolyl isomerase, FKBP-type                                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0215 | 148545472 | alginate regulatory protein AlgP                                                        | 0.77 | 0.22 | 7.23 | 0.006 | 0.010 | 0.116 |
| Pput_0216 | 148545473 | hypothetical protein Pput_0216                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0217 | 148545474 | ABC transporter related                                                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0218 | 148545475 | hypothetical protein Pput_0218                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0219 | 148545476 | lysine exporter protein LysE/YggA                                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0220 | 148545477 | band 7 protein                                                                          | 0.72 | 0.41 | 0.59 | 0.005 | 0.018 | 0.009 |
| Pput_0221 | 148545478 | hypothetical protein Pput_0221                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0222 | 148545479 | YbaK/prolyl-tRNA synthetase associated region                                           | 6.38 | 0.5  | 0    | 0.048 | 0.022 | 0.000 |
| Pput_0223 | 148545480 | hypothetical protein Pput_0223                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0224 | 148545481 | hypothetical protein Pput_0224                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0225 | 148545482 | CBS domain-containing protein                                                           | 2.53 | 0    | 0.54 | 0.019 | 0.000 | 0.009 |
| Pput_0226 | 148545483 | hypothetical protein Pput_0226                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0228 | 148545484 | succinate-semialdehyde dehydrogenase I                                                  | 6.68 | 0.42 | 2.34 | 0.051 | 0.018 | 0.037 |
| Pput_0229 | 148545485 | 4-aminobutyrate aminotransferase                                                        | 4.64 | 0.75 | 3.64 | 0.035 | 0.033 | 0.058 |
| Pput_0230 | 148545486 | putative signal transduction protein                                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0231 | 148545487 | diguanylate cyclase with PAS/PAC sensor                                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0232 | 148545488 | fatty acid desaturase                                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0233 | 148545489 | diguanylate cyclase/phosphodiesterase with PAS/PAC and GAF sensor(s)                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0234 | 148545490 | binding-protein-dependent transport systems inner membrane component                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0235 | 148545491 | ABC transporter related                                                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0236 | 148545492 | NLPA lipoprotein                                                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0237 | 148545493 | coenzyme F420-dependent N5 N10-methylene tetrahydromethanopterin reductase-like protein | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0238 | 148545494 | acyl-CoA dehydrogenase type 2                                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0239 | 148545495 | acyl-CoA dehydrogenase type 2                                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0240 | 148545496 | putative amino-acid ABC transporter ATP-binding protein YecC                            | 0    | 0.47 | 0.76 | 0.000 | 0.021 | 0.012 |
| Pput_0241 | 148545497 | polar amino acid ABC transporter, inner membrane subunit                                | 0.48 | 0    | 0    | 0.004 | 0.000 | 0.000 |
| Pput_0242 | 148545498 | cystine transporter subunit                                                             | 4.71 | 0    | 4.41 | 0.036 | 0.000 | 0.070 |
| Pput_0243 | 148545499 | Serine O-acetyltransferase                                                              | 1.24 | 0.24 | 1.17 | 0.009 | 0.011 | 0.019 |
| Pput_0244 | 148545500 | choline/carnitine/betaine transporter                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0245 | 148545501 | taurine dioxygenase                                                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0246 | 148545502 | binding-protein-dependent transport systems inner membrane component                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0247 | 148545503 | taurine transporter ATP-binding subunit                                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0248 | 148545504 | taurine ABC transporter, periplasmic binding protein                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0249 | 148545505 | outer membrane porin                                                                    | 0.56 | 2.55 | 3.74 | 0.004 | 0.112 | 0.060 |
| Pput_0250 | 148545506 | peroxidase                                                                              | 1.42 | 0.56 | 1.22 | 0.011 | 0.025 | 0.020 |
| Pput_0251 | 148545507 | NAD(P)H-dependent FMN reductase                                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0252 | 148545508 | aliphatic sulfonate ABC transporter periplasmic ligand-binding protein                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0253 | 148545509 | alkanesulfonate monooxygenase                                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0254 | 148545510 | binding-protein-dependent transport systems inner membrane component                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0255 | 148545511 | aliphatic sulfonates transport ATP-binding subunit                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0256 | 148545512 | TOBE domain-containing protein                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0257 | 148545513 | TetR family transcriptional regulator                                                   | 0    | 0.35 | 0.51 | 0.000 | 0.015 | 0.008 |
| Pput_0258 | 148545514 | glutamate--cysteine ligase                                                              | 0.19 | 0.13 | 0.2  | 0.001 | 0.006 | 0.003 |
| Pput_0259 | 148545515 | thioesterase superfamily protein                                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0260 | 148545516 | RNA-binding S1 domain-containing protein                                                | 0    | 0.04 | 0.08 | 0.000 | 0.002 | 0.001 |
| Pput_0261 | 148545517 | osmolarity response regulator                                                           | 2.2  | 0.68 | 5.1  | 0.017 | 0.030 | 0.082 |
| Pput_0262 | 148545518 | integral membrane sensor signal transduction histidine kinase                           | 0    | 0    | 0.24 | 0.000 | 0.000 | 0.004 |
| Pput_0263 | 148545519 | alpha-L-glutamate ligase                                                                | 0.39 | 0    | 1.35 | 0.003 | 0.000 | 0.022 |

|           |           |                                                                       |      |      |      |       |       |       |
|-----------|-----------|-----------------------------------------------------------------------|------|------|------|-------|-------|-------|
| Pput_0264 | 148545520 | hypothetical protein Pput_0264                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0265 | 148545521 | RNA-binding S4 domain-containing protein                              | 1.36 | 0.58 | 1.42 | 0.010 | 0.025 | 0.023 |
| Pput_0266 | 148545522 | phosphoesterase, PA-phosphatase related                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0267 | 148545523 | Hsp33-like chaperonin                                                 | 3.4  | 0.37 | 2.32 | 0.026 | 0.016 | 0.037 |
| Pput_0268 | 148545524 | phosphoenolpyruvate carboxykinase                                     | 4.9  | 0.67 | 2.23 | 0.037 | 0.029 | 0.036 |
| Pput_0269 | 148545525 | thioesterase superfamily protein                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0270 | 148545526 | 17 kDa surface antigen                                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0271 | 148545527 | oxidoreductase alpha (molybdopterin) subunit                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0272 | 148545528 | formate dehydrogenase family accessory protein FdhD                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0273 | 148545529 | LysM domain/BON superfamily protein                                   | 0.95 | 0    | 0    | 0.007 | 0.000 | 0.000 |
| Pput_0274 | 148545530 | HAD family hydrolase                                                  | 0.32 | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_0275 | 148545531 | ADP-ribose diphosphatase NudE                                         | 0    | 0    | 0.36 | 0.000 | 0.000 | 0.006 |
| Pput_0276 | 148545532 | 3'(2'),5'-bisphosphate nucleotidase                                   | 0.28 | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_0277 | 148545533 | thioesterase domain-containing protein                                | 1.49 | 0.5  | 1.35 | 0.011 | 0.022 | 0.022 |
| Pput_0278 | 148545534 | two component, sigma54 specific, Fis family transcriptional regulator | 0.22 | 0.33 | 0.57 | 0.002 | 0.014 | 0.009 |
| Pput_0279 | 148545535 | integral membrane sensor signal transduction histidine kinase         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0280 | 148545536 | dTDP-4-dehydrorhamnose 3,5-epimerase                                  | 1.09 | 0.41 | 2.05 | 0.008 | 0.018 | 0.033 |
| Pput_0281 | 148545537 | agmatine deiminase                                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0282 | 148545538 | hypothetical protein Pput_0282                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0283 | 148545539 | TonB-dependent siderophore receptor                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0284 | 148545540 | outer membrane porin                                                  | 0.69 | 0.83 | 0.57 | 0.005 | 0.036 | 0.009 |
| Pput_0285 | 148545541 | glutamate synthase (NADPH)                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0286 | 148545542 | integral membrane sensor signal transduction histidine kinase         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0287 | 148545543 | two component transcriptional regulator                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0288 | 148545544 | TonB-dependent siderophore receptor                                   | 0    | 0.04 | 0    | 0.000 | 0.002 | 0.000 |
| Pput_0289 | 148545545 | hypothetical protein Pput_0289                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0290 | 148545546 | hypothetical protein Pput_0290                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0291 | 148545547 | helix-turn-helix domain-containing protein                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0292 | 148545548 | hypothetical protein Pput_0292                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0293 | 148545549 | hypothetical protein Pput_0293                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0294 | 148545550 | hypothetical protein Pput_0294                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0295 | 148545551 | hypothetical protein Pput_0295                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0297 | 148545552 | hypothetical protein Pput_0297                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0298 | 148545553 | polar amino acid ABC transporter, inner membrane subunit              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0299 | 148545554 | polar amino acid ABC transporter, inner membrane subunit              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0300 | 148545555 | extracellular solute-binding protein                                  | 1.43 | 0    | 0.57 | 0.011 | 0.000 | 0.009 |
| Pput_0301 | 148545556 | ABC transporter related                                               | 0    | 0.28 | 0.78 | 0.000 | 0.012 | 0.012 |
| Pput_0302 | 148545557 | GABA permease                                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0303 | 148545558 | hypothetical protein Pput_0303                                        | 0.53 | 0    | 0    | 0.004 | 0.000 | 0.000 |
| Pput_0304 | 148545559 | hypothetical protein Pput_0304                                        | 0    | 0.1  | 0    | 0.000 | 0.004 | 0.000 |
| Pput_0305 | 148545560 | hypothetical protein Pput_0305                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0306 | 148545561 | A/G-specific adenine glycosylase                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0307 | 148545562 | AsmA family protein                                                   | 0.51 | 0.37 | 0.82 | 0.004 | 0.016 | 0.013 |
| Pput_0308 | 148545563 | major facilitator transporter                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0309 | 148545564 | imidazoleglycerol-phosphate dehydratase                               | 1.46 | 1.86 | 2.93 | 0.011 | 0.081 | 0.047 |
| Pput_0310 | 148545565 | imidazole glycerol phosphate synthase subunit HisH                    | 1.46 | 0.35 | 0.97 | 0.011 | 0.015 | 0.016 |
| Pput_0311 | 148545566 | hypothetical protein Pput_0311                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0312 | 148545567 | imidazole-4-carboxamide isomerase                                     | 2.46 | 0    | 1.02 | 0.019 | 0.000 | 0.016 |
| Pput_0313 | 148545568 | imidazole glycerol phosphate synthase subunit HisF                    | 0.83 | 0.3  | 0.62 | 0.006 | 0.013 | 0.010 |
| Pput_0314 | 148545569 | glycine betaine/L-proline ABC transporter, ATPase subunit             | 0.16 | 0    | 0.5  | 0.001 | 0.000 | 0.008 |
| Pput_0315 | 148545570 | binding-protein-dependent transport systems inner membrane component  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0316 | 148545571 | substrate-binding region of ABC-type glycine betaine transport system | 1.06 | 0    | 0.91 | 0.008 | 0.000 | 0.015 |
| Pput_0317 | 148545572 | L-serine dehydratase 1                                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0318 | 148545573 | AraC family transcriptional regulator                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0319 | 148545574 | hypothetical protein Pput_0319                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0320 | 148545575 | Ricin B lectin                                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0321 | 148545576 | hypothetical protein Pput_0321                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0322 | 148545577 | 3-hydroxybutyryl-CoA dehydrogenase                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0323 | 148545578 | hypothetical protein Pput_0323                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0324 | 148545579 | substrate-binding region of ABC-type glycine betaine transport system | 0.36 | 0    | 0    | 0.003 | 0.000 | 0.000 |
| Pput_0325 | 148545580 | AraC family transcriptional regulator                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0326 | 148545581 | hypothetical protein Pput_0326                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0327 | 148545582 | hypothetical protein Pput_0327                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0328 | 148545583 | hypothetical protein Pput_0328                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0329 | 148545584 | membrane dipeptidase                                                  | 0.84 | 0    | 0    | 0.006 | 0.000 | 0.000 |
| Pput_0330 | 148545585 | hypothetical protein Pput_0330                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0331 | 148545586 | NADH:flavin oxidoreductase/NADH oxidase                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0332 | 148545587 | hypothetical protein Pput_0332                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0333 | 148545588 | electron transfer flavoprotein, alpha subunit-like protein            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0334 | 148545589 | electron transfer flavoprotein, alpha/beta-subunit-like protein       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0335 | 148545590 | hypothetical protein Pput_0335                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0336 | 148545591 | Rieske (2Fe-2S) domain-containing protein                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0337 | 148545592 | oxidoreductase FAD-binding subunit                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0338 | 148545593 | hypothetical protein Pput_0338                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0339 | 148545594 | methyl-accepting chemotaxis sensory transducer                        | 0.12 | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_0340 | 148545595 | hypothetical protein Pput_0340                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0341 | 148545596 | hypothetical protein Pput_0341                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0342 | 148545597 | methyl-accepting chemotaxis sensory transducer                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0343 | 148545598 | threonine aldolase                                                    | 0.45 | 0    | 0.84 | 0.003 | 0.000 | 0.013 |
| Pput_0344 | 148545599 | serine hydroxymethyltransferase                                       | 0.88 | 0.08 | 0.43 | 0.007 | 0.004 | 0.007 |
| Pput_0345 | 148545600 | sarcosine oxidase beta subunit family protein                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0346 | 148545601 | sarcosine oxidase delta subunit family protein                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0347 | 148545602 | sarcosine oxidase alpha subunit family protein                        | 0    | 0    | 0.14 | 0.000 | 0.000 | 0.002 |
| Pput_0348 | 148545603 | sarcosine oxidase gamma subunit family protein                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0349 | 148545604 | formyltetrahydrofolate deformylase                                    | 0    | 0    | 0.24 | 0.000 | 0.000 | 0.004 |
| Pput_0350 | 148545605 | formaldehyde dehydrogenase, glutathione-independent                   | 0.66 | 0    | 0.27 | 0.005 | 0.000 | 0.004 |
| Pput_0351 | 148545606 | hypothetical protein Pput_0351                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0352 | 148545607 | hypothetical protein Pput_0352                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0353 | 148545608 | hypothetical protein Pput_0353                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |

|           |           |                                                                      |       |      |       |       |       |       |
|-----------|-----------|----------------------------------------------------------------------|-------|------|-------|-------|-------|-------|
| Pput_0354 | 148545609 | hypothetical protein Pput_0354                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0355 | 148545610 | putative acyltransferase                                             | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0356 | 148545611 | hypothetical protein Pput_0356                                       | 17.89 | 0.46 | 0     | 0.136 | 0.020 | 0.000 |
| Pput_0357 | 148545612 | DNA-binding response regulator CreB                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0358 | 148545613 | sensory histidine kinase CreC                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0359 | 148545614 | hypothetical protein Pput_0359                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0360 | 148545615 | glutathione S-transferase domain-containing protein                  | 1.49  | 0.58 | 1.65  | 0.011 | 0.025 | 0.026 |
| Pput_0361 | 148545616 | methionine sulfoxide reductase A                                     | 1.24  | 0.3  | 2.06  | 0.009 | 0.013 | 0.033 |
| Pput_0362 | 148545617 | diguanylate cyclase/phosphodiesterase with PAS/PAC and GAF sensor(s) | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0363 | 148545618 | dihydrolipoamide acetyltransferase                                   | 7.94  | 1.32 | 3.46  | 0.060 | 0.058 | 0.055 |
| Pput_0364 | 148545619 | pyruvate dehydrogenase subunit E1                                    | 16.11 | 2.45 | 14.81 | 0.122 | 0.107 | 0.237 |
| Pput_0365 | 148545620 | (glutamate--ammonia-ligase) adenylyltransferase                      | 0.1   | 0    | 0.32  | 0.001 | 0.000 | 0.005 |
| Pput_0366 | 148545621 | lipopolysaccharide heptosyltransferase II                            | 0.32  | 0.64 | 1.53  | 0.002 | 0.028 | 0.024 |
| Pput_0367 | 148545622 | lipopolysaccharide heptosyltransferase I                             | 0     | 0.2  | 0.4   | 0.000 | 0.009 | 0.006 |
| Pput_0368 | 148545623 | glycosyl transferase, group 1                                        | 0.76  | 0.19 | 0.59  | 0.006 | 0.008 | 0.009 |
| Pput_0369 | 148545624 | lipopolysaccharide kinase                                            | 0.26  | 0.12 | 1.12  | 0.002 | 0.005 | 0.018 |
| Pput_0370 | 148545625 | lipopolysaccharide kinase                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0371 | 148545626 | lipopolysaccharide kinase                                            | 0.28  | 0    | 0.54  | 0.002 | 0.000 | 0.009 |
| Pput_0372 | 148545627 | hypothetical protein Pput_0372                                       | 0.22  | 0    | 0     | 0.002 | 0.000 | 0.000 |
| Pput_0373 | 148545628 | hypothetical protein Pput_0373                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0374 | 148545629 | hypothetical protein Pput_0374                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0375 | 148545630 | PepSY-associated TM helix domain-containing protein                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0376 | 148545631 | TonB-dependent siderophore receptor                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0377 | 148545632 | anti-FecI sigma factor, FecR                                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0378 | 148545633 | RNA polymerase sigma factor                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0379 | 148545634 | DNA polymerase III, epsilon subunit                                  | 0     | 0    | 0.5   | 0.000 | 0.000 | 0.008 |
| Pput_0380 | 148545635 | CBS domain-containing protein                                        | 0.21  | 0    | 0.77  | 0.002 | 0.000 | 0.012 |
| Pput_0381 | 148545636 | response regulator receiver protein                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0382 | 148545637 | malate synthase G                                                    | 0.79  | 0.45 | 1.28  | 0.006 | 0.020 | 0.020 |
| Pput_0383 | 148545638 | amino acid-binding ACT domain-containing protein                     | 1.51  | 0.44 | 1.38  | 0.011 | 0.019 | 0.022 |
| Pput_0384 | 148545639 | transporter DMT superfamily protein                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0385 | 148545640 | serine/threonine protein kinase                                      | 0     | 0    | 0.33  | 0.000 | 0.000 | 0.005 |
| Pput_0386 | 148545641 | ModE family transcriptional regulator                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0387 | 148545642 | amidophosphoribosyltransferase-like protein                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0388 | 148545643 | biotin synthase                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0389 | 148545644 | 8-amino-7-oxononanoate synthase                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0390 | 148545645 | carboxylesterase                                                     | 0.71  | 0    | 0     | 0.005 | 0.000 | 0.000 |
| Pput_0391 | 148545646 | biotin biosynthesis protein BioC                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0392 | 148545647 | dithiobiotin synthetase                                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0393 | 148545648 | hypothetical protein Pput_0393                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0394 | 148545649 | acyl-CoA dehydrogenase domain-containing protein                     | 0.73  | 0.24 | 0.94  | 0.006 | 0.011 | 0.015 |
| Pput_0395 | 148545650 | diguanylate cyclase                                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0396 | 148545651 | acyl-CoA dehydrogenase domain-containing protein                     | 0.72  | 0.18 | 1.08  | 0.005 | 0.008 | 0.017 |
| Pput_0397 | 148545652 | LysR family transcriptional regulator                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0398 | 148545653 | aminotransferase class-III                                           | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0399 | 148545654 | hypothetical protein Pput_0399                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0400 | 148545655 | peptidase S9 prolyl oligopeptidase                                   | 0     | 0    | 0.17  | 0.000 | 0.000 | 0.003 |
| Pput_0401 | 148545656 | pyrroloquinoline quinone biosynthesis protein PqqE                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0402 | 148545657 | pyrroloquinoline quinone biosynthesis protein PqqD                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0403 | 148545658 | pyrroloquinoline quinone biosynthesis protein PqqC                   | 0.97  | 0.88 | 0.41  | 0.007 | 0.039 | 0.007 |
| Pput_0404 | 148545659 | pyrroloquinoline quinone biosynthesis protein PqqB                   | 0.22  | 0    | 0     | 0.002 | 0.000 | 0.000 |
| Pput_0405 | 148545660 | coenzyme PQQ biosynthesis protein PqqF                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0406 | 148545661 | Nitrilase/cyanide hydratase and apolipoprotein N-acyltransferase     | 0.56  | 0    | 1.23  | 0.004 | 0.000 | 0.020 |
| Pput_0407 | 148545662 | amine oxidase                                                        | 0.12  | 0    | 0.25  | 0.001 | 0.000 | 0.004 |
| Pput_0408 | 148545663 | AsnC family transcriptional regulator                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0409 | 148545664 | hypothetical protein Pput_0409                                       | 0     | 0.8  | 0.76  | 0.000 | 0.035 | 0.012 |
| Pput_0410 | 148545665 | hypothetical protein Pput_0410                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0411 | 148545666 | hypothetical protein Pput_0411                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0412 | 148545667 | hypothetical protein Pput_0412                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0413 | 148545668 | hypothetical protein Pput_0413                                       | 0     | 0.19 | 0     | 0.000 | 0.008 | 0.000 |
| Pput_0414 | 148545669 | hypothetical protein Pput_0414                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0415 | 148545670 | integrase catalytic subunit                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0419 | 148545671 | transposase IS3/IS911 family protein                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0420 | 148545672 | diguanylate cyclase/phosphodiesterase with PAS/PAC and GAF sensor(s) | 0     | 0.03 | 0.13  | 0.000 | 0.001 | 0.002 |
| Pput_0421 | 148545673 | RNA polymerase sigma factor RpoD                                     | 2.28  | 0.52 | 2.2   | 0.017 | 0.023 | 0.035 |
| Pput_0422 | 148545674 | DNA primase                                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0423 | 148545675 | 30S ribosomal protein S21                                            | 60.17 | 1.21 | 8.5   | 0.456 | 0.053 | 0.136 |
| Pput_0424 | 148545676 | metalloendopeptidase glycoprotease family                            | 0.21  | 0    | 0     | 0.002 | 0.000 | 0.000 |
| Pput_0425 | 148545677 | putative glycerol-3-phosphate acyltransferase PlsY                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0426 | 148545678 | dihydroneopterin aldolase                                            | 0.68  | 0    | 0     | 0.005 | 0.000 | 0.000 |
| Pput_0427 | 148545679 | 2-amino-4-hydroxy-6-hydroxymethylidihydropteridine pyrophosphokinase | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0428 | 148545680 | 2'nucleotidase/phosphatase                                           | 0     | 0    | 0.18  | 0.000 | 0.000 | 0.003 |
| Pput_0429 | 148545681 | SpoVR family protein                                                 | 0.19  | 0.12 | 0.18  | 0.001 | 0.005 | 0.003 |
| Pput_0430 | 148545682 | hypothetical protein Pput_0430                                       | 1.5   | 0.45 | 0.98  | 0.011 | 0.020 | 0.016 |
| Pput_0431 | 148545683 | putative serine protein kinase, PrkA                                 | 16.89 | 1.41 | 9.02  | 0.128 | 0.062 | 0.144 |
| Pput_0432 | 148545684 | thiosulfate sulfurtransferase                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0433 | 148545685 | diadenosine tetraphosphatase                                         | 0.24  | 0    | 0     | 0.002 | 0.000 | 0.000 |
| Pput_0434 | 148545686 | ApaG                                                                 | 0.94  | 0    | 0     | 0.007 | 0.000 | 0.000 |
| Pput_0435 | 148545687 | dimethyladenosine transferase                                        | 0     | 0.27 | 0.56  | 0.000 | 0.012 | 0.009 |
| Pput_0436 | 148545688 | 4-hydroxythreonine-4-phosphate dehydrogenase                         | 0     | 0    | 0.23  | 0.000 | 0.000 | 0.004 |
| Pput_0437 | 148545689 | SurA domain-containing protein                                       | 0.8   | 0    | 2.14  | 0.006 | 0.000 | 0.034 |
| Pput_0438 | 148545690 | organic solvent tolerance protein                                    | 0.76  | 0.27 | 0.75  | 0.006 | 0.012 | 0.012 |
| Pput_0439 | 148545691 | aminoglycoside phosphotransferase                                    | 0     | 0    | 0.89  | 0.000 | 0.000 | 0.014 |
| Pput_0440 | 148545692 | nucleotidyl transferase                                              | 0.83  | 0    | 0     | 0.006 | 0.000 | 0.000 |
| Pput_0441 | 148545693 | heat shock protein DnaJ domain-containing protein                    | 0     | 0    | 0.39  | 0.000 | 0.000 | 0.006 |
| Pput_0442 | 148545694 | hypothetical protein Pput_0442                                       | 0.33  | 0    | 0.22  | 0.002 | 0.000 | 0.004 |
| Pput_0443 | 148545695 | PAS/PAC sensor signal transduction histidine kinase                  | 0.08  | 0    | 0.13  | 0.001 | 0.000 | 0.002 |
| Pput_0444 | 148545696 | two component LuxR family transcriptional regulator                  | 0.59  | 0    | 1.17  | 0.004 | 0.000 | 0.019 |
| Pput_0445 | 148545697 | spermidine/putrescine ABC transporter ATPase subunit                 | 0.41  | 1.83 | 5.76  | 0.003 | 0.080 | 0.092 |

|           |           |                                                                      |         |        |        |        |       |       |
|-----------|-----------|----------------------------------------------------------------------|---------|--------|--------|--------|-------|-------|
| Pput_0446 | 148545698 | extracellular solute-binding protein                                 | 3.52    | 0.21   | 7.53   | 0.027  | 0.009 | 0.120 |
| Pput_0447 | 148545699 | binding-protein-dependent transport systems inner membrane component | 0       | 0.17   | 4.64   | 0.000  | 0.007 | 0.074 |
| Pput_0448 | 148545700 | binding-protein-dependent transport systems inner membrane component | 0       | 0      | 0      | 0.000  | 0.000 | 0.000 |
| Pput_0449 | 148545701 | ribulose-phosphate 3-epimerase                                       | 1.57    | 0.34   | 0.34   | 0.012  | 0.015 | 0.005 |
| Pput_0450 | 148545702 | phosphoglycolate phosphatase                                         | 0       | 0      | 0      | 0.000  | 0.000 | 0.000 |
| Pput_0451 | 148545703 | anthranilate synthase component I                                    | 2.98    | 0.81   | 1.65   | 0.023  | 0.035 | 0.026 |
| Pput_0452 | 148545704 | outer membrane autotransporter                                       | 0       | 0.06   | 0.17   | 0.000  | 0.003 | 0.003 |
| Pput_0453 | 148545705 | anthranilate synthase component II                                   | 0.38    | 0      | 0      | 0.003  | 0.000 | 0.000 |
| Pput_0454 | 148545706 | anthranilate phosphoribosyltransferase                               | 0.42    | 0      | 0      | 0.003  | 0.000 | 0.000 |
| Pput_0455 | 148545707 | indole-3-glycerol-phosphate synthase                                 | 7.93    | 0.42   | 2.49   | 0.060  | 0.018 | 0.040 |
| Pput_0456 | 148545708 | hypothetical protein Pput_0456                                       | 0.5     | 0      | 0      | 0.004  | 0.000 | 0.000 |
| Pput_0457 | 148545709 | cAMP-regulatory protein                                              | 0       | 0      | 0      | 0.000  | 0.000 | 0.000 |
| Pput_0458 | 148545710 | OsmC family protein                                                  | 5.01    | 0      | 1.39   | 0.038  | 0.000 | 0.022 |
| Pput_0459 | 148545711 | hypothetical protein Pput_0459                                       | 0       | 0      | 0      | 0.000  | 0.000 | 0.000 |
| Pput_0460 | 148545712 | ubiquinone biosynthesis protein COQ7-like protein                    | 0       | 0      | 0      | 0.000  | 0.000 | 0.000 |
| Pput_0461 | 148545713 | histidine triad (HIT) protein                                        | 1.23    | 0      | 0      | 0.009  | 0.000 | 0.000 |
| Pput_0462 | 148545714 | short-chain dehydrogenase/reductase SDR                              | 0       | 0      | 0      | 0.000  | 0.000 | 0.000 |
| Pput_0463 | 148545715 | 2-nitropropane dioxygenase, NPD                                      | 0       | 0      | 0      | 0.000  | 0.000 | 0.000 |
| Pput_0464 | 148545716 | hypothetical protein Pput_0464                                       | 0       | 0      | 0      | 0.000  | 0.000 | 0.000 |
| Pput_0465 | 148545717 | N-acetyl-gamma-glutamyl-phosphate reductase                          | 2.94    | 1.19   | 2.75   | 0.022  | 0.052 | 0.044 |
| Pput_0466 | 148545718 | iron-sulfur cluster insertion protein ErpA                           | 0       | 0      | 0      | 0.000  | 0.000 | 0.000 |
| Pput_0467 | 148545719 | anhydro-N-acetylmuramic acid kinase                                  | 0       | 0.2    | 0.4    | 0.000  | 0.009 | 0.006 |
| Pput_0468 | 148545720 | peptidase M23B                                                       | 0       | 0      | 0      | 0.000  | 0.000 | 0.000 |
| Pput_0469 | 148545721 | tyrosyl-tRNA synthetase                                              | 2.99    | 0.5    | 1.09   | 0.023  | 0.022 | 0.017 |
| Pput_0470 | 148545722 | biotin--protein ligase                                               | 0       | 0      | 0      | 0.000  | 0.000 | 0.000 |
| Pput_0471 | 148545723 | pantothenate kinase                                                  | 0       | 0      | 0      | 0.000  | 0.000 | 0.000 |
| Pput_0472 | 148545724 | hypothetical protein Pput_0472                                       | 0       | 0      | 0      | 0.000  | 0.000 | 0.000 |
| Pput_0473 | 148545725 | elongation factor Tu                                                 | 70.31   | 15.22  | 145.89 | 0.533  | 0.666 | 2.332 |
| Pput_0474 | 148545726 | preprotein translocase subunit SecE                                  | 0       | 0      | 0      | 0.000  | 0.000 | 0.000 |
| Pput_0475 | 148545727 | transcription antitermination protein NusG                           | 9.1     | 1.02   | 2.67   | 0.069  | 0.045 | 0.043 |
| Pput_0476 | 148545728 | 50S ribosomal protein L11                                            | 27.06   | 2.21   | 5.44   | 0.205  | 0.097 | 0.087 |
| Pput_0477 | 148545729 | 50S ribosomal protein L1                                             | 33.39   | 6.75   | 7.34   | 0.253  | 0.296 | 0.117 |
| Pput_0478 | 148545730 | 50S ribosomal protein L10                                            | 76.7    | 5.22   | 34.92  | 0.581  | 0.229 | 0.558 |
| Pput_0479 | 148545731 | 50S ribosomal protein L7/L12                                         | 55.72   | 0      | 2.96   | 0.422  | 0.000 | 0.047 |
| Pput_0480 | 148545732 | DNA-directed RNA polymerase subunit beta                             | 5.92    | 0.7    | 7.5    | 0.045  | 0.031 | 0.120 |
| Pput_0481 | 148545733 | DNA-directed RNA polymerase subunit beta'                            | 11.62   | 0.56   | 9.87   | 0.088  | 0.025 | 0.158 |
| Pput_0482 | 148545734 | 30S ribosomal protein S12                                            | 6.39    | 6.33   | 7.08   | 0.048  | 0.277 | 0.113 |
| Pput_0483 | 148545735 | 30S ribosomal protein S7                                             | 1330.69 | 161.86 | 156.72 | 10.079 | 7.087 | 2.505 |
| Pput_0484 | 148545736 | elongation factor G                                                  | 32.54   | 1.62   | 10.08  | 0.246  | 0.071 | 0.161 |
| Pput_0485 | 148545737 | elongation factor Tu                                                 | 0       | 0      | 0      | 0.000  | 0.000 | 0.000 |
| Pput_0486 | 148545738 | 30S ribosomal protein S10                                            | 68.49   | 12.7   | 18.11  | 0.519  | 0.556 | 0.289 |
| Pput_0487 | 148545739 | 50S ribosomal protein L3                                             | 84.79   | 10.99  | 56.66  | 0.642  | 0.481 | 0.906 |
| Pput_0488 | 148545740 | 50S ribosomal protein L4                                             | 31.78   | 4.06   | 21.04  | 0.241  | 0.178 | 0.336 |
| Pput_0489 | 148545741 | 50S ribosomal protein L23                                            | 17.87   | 1.56   | 1.93   | 0.135  | 0.068 | 0.031 |
| Pput_0490 | 148545742 | 50S ribosomal protein L2                                             | 23.44   | 8.03   | 47.38  | 0.178  | 0.352 | 0.757 |
| Pput_0491 | 148545743 | 30S ribosomal protein S19                                            | 17.01   | 0      | 2.72   | 0.129  | 0.000 | 0.043 |
| Pput_0492 | 148545744 | 50S ribosomal protein L22                                            | 147.66  | 13.39  | 5.97   | 1.118  | 0.586 | 0.095 |
| Pput_0493 | 148545745 | 30S ribosomal protein S3                                             | 38.55   | 6.51   | 12.96  | 0.292  | 0.285 | 0.207 |
| Pput_0494 | 148545746 | 50S ribosomal protein L16                                            | 14.47   | 1.71   | 3.18   | 0.110  | 0.075 | 0.051 |
| Pput_0495 | 148545747 | 50S ribosomal protein L29                                            | 23.84   | 2.92   | 1.49   | 0.181  | 0.128 | 0.024 |
| Pput_0496 | 148545748 | 30S ribosomal protein S17                                            | 617.78  | 24.41  | 18.9   | 4.679  | 1.069 | 0.302 |
| Pput_0497 | 148545749 | 50S ribosomal protein L14                                            | 148.59  | 46.11  | 41.73  | 1.126  | 2.019 | 0.667 |
| Pput_0498 | 148545750 | 50S ribosomal protein L24                                            | 334.59  | 3.51   | 0      | 2.534  | 0.154 | 0.000 |
| Pput_0499 | 148545751 | 50S ribosomal protein L5                                             | 340.07  | 2.36   | 46.6   | 2.576  | 0.103 | 0.745 |
| Pput_0500 | 148545752 | 30S ribosomal protein S14                                            | 12.56   | 2.3    | 5.6    | 0.095  | 0.101 | 0.090 |
| Pput_0501 | 148545753 | 30S ribosomal protein S8                                             | 68.63   | 10.85  | 22.42  | 0.520  | 0.475 | 0.358 |
| Pput_0502 | 148545754 | 50S ribosomal protein L6                                             | 92.83   | 8.08   | 26.17  | 0.703  | 0.354 | 0.418 |
| Pput_0503 | 148545755 | 50S ribosomal protein L18                                            | 125.43  | 43.51  | 52.43  | 0.950  | 1.905 | 0.838 |
| Pput_0504 | 148545756 | 30S ribosomal protein S5                                             | 1797.42 | 102.82 | 143.38 | 13.615 | 4.502 | 2.292 |
| Pput_0505 | 148545757 | 50S ribosomal protein L30                                            | 63.83   | 10.99  | 9.73   | 0.483  | 0.481 | 0.156 |
| Pput_0506 | 148545758 | 50S ribosomal protein L15                                            | 187.84  | 25.82  | 48.64  | 1.423  | 1.130 | 0.777 |
| Pput_0507 | 148545759 | preprotein translocase subunit SecY                                  | 0.24    | 0.16   | 0.72   | 0.002  | 0.007 | 0.012 |
| Pput_0508 | 148545760 | ribosomal protein L36                                                | 0       | 0      | 1.98   | 0.000  | 0.000 | 0.032 |
| Pput_0509 | 148545761 | 30S ribosomal protein S13                                            | 117.87  | 4.47   | 9.35   | 0.893  | 0.196 | 0.149 |
| Pput_0510 | 148545762 | 30S ribosomal protein S11                                            | 26.25   | 6.45   | 28.28  | 0.199  | 0.282 | 0.452 |
| Pput_0511 | 148545763 | 30S ribosomal protein S4                                             | 261.67  | 19.77  | 94.92  | 1.982  | 0.866 | 1.517 |
| Pput_0512 | 148545764 | DNA-directed RNA polymerase subunit alpha                            | 2.38    | 6.02   | 10.96  | 0.018  | 0.264 | 0.175 |
| Pput_0513 | 148545765 | 50S ribosomal protein L17                                            | 11.08   | 3.93   | 13.65  | 0.084  | 0.172 | 0.218 |
| Pput_0514 | 148545766 | catalase                                                             | 0.31    | 0.14   | 0      | 0.002  | 0.006 | 0.000 |
| Pput_0515 | 148545767 | bacterioferritin                                                     | 13.5    | 1.63   | 3.98   | 0.102  | 0.071 | 0.064 |
| Pput_0516 | 148545768 | excinuclease ABC subunit A                                           | 0.51    | 0.04   | 0.35   | 0.004  | 0.002 | 0.006 |
| Pput_0517 | 148545769 | major facilitator transporter                                        | 0       | 0      | 0      | 0.000  | 0.000 | 0.000 |
| Pput_0518 | 148545770 | single-stranded DNA-binding protein                                  | 9.01    | 1.84   | 4.19   | 0.068  | 0.081 | 0.067 |
| Pput_0519 | 148545771 | GntR family transcriptional regulator                                | 0       | 0.15   | 0      | 0.000  | 0.007 | 0.000 |
| Pput_0520 | 148545772 | hypothetical protein Pput_0520                                       | 0       | 0      | 0      | 0.000  | 0.000 | 0.000 |
| Pput_0521 | 148545773 | short-chain dehydrogenase/reductase SDR                              | 0       | 0      | 0      | 0.000  | 0.000 | 0.000 |
| Pput_0522 | 148545774 | molybdopterin oxidoreductase Fe4S4 region                            | 3.4     | 0.92   | 10.03  | 0.026  | 0.040 | 0.160 |
| Pput_0523 | 148545775 | formate dehydrogenase, alpha subunit                                 | 0.99    | 0.32   | 1.66   | 0.007  | 0.014 | 0.027 |
| Pput_0524 | 148545776 | formate dehydrogenase, beta subunit                                  | 1.46    | 0      | 1.16   | 0.011  | 0.000 | 0.019 |
| Pput_0525 | 148545777 | formate dehydrogenase, gamma subunit                                 | 1.79    | 0.86   | 2.29   | 0.014  | 0.038 | 0.037 |
| Pput_0526 | 148545778 | formate dehydrogenase accessory protein FdhE                         | 0.22    | 0.11   | 0.46   | 0.002  | 0.005 | 0.007 |
| Pput_0527 | 148545779 | selenocysteine synthase                                              | 0       | 0.3    | 0      | 0.000  | 0.013 | 0.000 |
| Pput_0528 | 148545780 | selenocysteine-specific translation elongation factor                | 0.44    | 0.17   | 0.47   | 0.003  | 0.007 | 0.008 |
| Pput_0529 | 148545781 | asparaginase                                                         | 0       | 0      | 0      | 0.000  | 0.000 | 0.000 |
| Pput_0530 | 148545782 | amino acid carrier protein                                           | 0       | 0      | 0      | 0.000  | 0.000 | 0.000 |
| Pput_0531 | 148545783 | Cro/CI family transcriptional regulator                              | 0       | 0      | 0      | 0.000  | 0.000 | 0.000 |
| Pput_0532 | 148545784 | hypothetical protein Pput_0532                                       | 0       | 0      | 0      | 0.000  | 0.000 | 0.000 |
| Pput_0535 | 148545785 | dTDP-4-dehydrorhamnose reductase                                     | 0.54    | 0.11   | 1.81   | 0.004  | 0.005 | 0.029 |
| Pput_0536 | 148545786 | NAD-dependent epimerase/dehydratase                                  | 0       | 0      | 0.64   | 0.000  | 0.000 | 0.010 |

|           |           |                                                                     |      |      |       |       |       |       |
|-----------|-----------|---------------------------------------------------------------------|------|------|-------|-------|-------|-------|
| Pput_0537 | 148545787 | HxlR family transcriptional regulator                               | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0538 | 148545788 | major facilitator transporter                                       | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0539 | 148545789 | OmpW family protein                                                 | 4.8  | 1.78 | 3.57  | 0.036 | 0.078 | 0.057 |
| Pput_0540 | 148545790 | hypothetical protein Pput_0540                                      | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0541 | 148545791 | hypothetical protein Pput_0541                                      | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0542 | 148545792 | ABC transporter related                                             | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0543 | 148545793 | hypothetical protein Pput_0543                                      | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0544 | 148545794 | hypothetical protein Pput_0544                                      | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0545 | 148545795 | thioredoxin                                                         | 0.95 | 0    | 0.86  | 0.007 | 0.000 | 0.014 |
| Pput_0546 | 148545796 | methyltransferase type 12                                           | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0547 | 148545797 | hypothetical protein Pput_0547                                      | 1.02 | 1.02 | 2.13  | 0.008 | 0.045 | 0.034 |
| Pput_0548 | 148545798 | transcriptional regulator NrdR                                      | 1.38 | 0.47 | 1.68  | 0.010 | 0.021 | 0.027 |
| Pput_0549 | 148545799 | riboflavin biosynthesis protein RibD                                | 0    | 0    | 0.88  | 0.000 | 0.000 | 0.014 |
| Pput_0550 | 148545800 | riboflavin synthase subunit alpha                                   | 0.7  | 0.57 | 0.35  | 0.005 | 0.025 | 0.006 |
| Pput_0551 | 148545801 | GTP cyclohydrolase II-like protein                                  | 0    | 0.31 | 0.66  | 0.000 | 0.014 | 0.011 |
| Pput_0552 | 148545802 | 6,7-dimethyl-8-ribityllumazine synthase                             | 6.32 | 1.89 | 3.34  | 0.048 | 0.083 | 0.053 |
| Pput_0553 | 148545803 | transcription antitermination protein NusB                          | 3.33 | 0.46 | 0.46  | 0.025 | 0.020 | 0.007 |
| Pput_0554 | 148545804 | thiamine monophosphate kinase                                       | 0    | 0    | 0.33  | 0.000 | 0.000 | 0.005 |
| Pput_0555 | 148545805 | phosphatidylglycerophosphatase A                                    | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0556 | 148545806 | hypothetical protein Pput_0556                                      | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0557 | 148545807 | GTP cyclohydrolase II                                               | 1.56 | 0    | 0.37  | 0.012 | 0.000 | 0.006 |
| Pput_0558 | 148545808 | hypothetical protein Pput_0558                                      | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0559 | 148545809 | periplasmic binding protein                                         | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0560 | 148545810 | TonB-dependent receptor, plug                                       | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0561 | 148545811 | 1-deoxy-D-xylulose-5-phosphate synthase                             | 0.24 | 0.17 | 0.4   | 0.002 | 0.007 | 0.006 |
| Pput_0562 | 148545812 | polyprenyl synthetase                                               | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0563 | 148545813 | exodeoxyribonuclease VII small subunit                              | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0564 | 148545814 | 3,4-dihydroxy-2-butanone 4-phosphate synthase                       | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0565 | 148545815 | zeta toxin family protein                                           | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0566 | 148545816 | putative esterase                                                   | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0567 | 148545817 | integral membrane sensor signal transduction histidine kinase       | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0568 | 148545818 | two component transcriptional regulator                             | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0569 | 148545819 | TonB-dependent siderophore receptor                                 | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0570 | 148545820 | hemerythrin HHE cation binding domain-containing protein            | 2.19 | 0    | 0     | 0.017 | 0.000 | 0.000 |
| Pput_0571 | 148545821 | hypothetical protein Pput_0571                                      | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0572 | 148545822 | hypothetical protein Pput_0572                                      | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0573 | 148545823 | copper resistance B precursor                                       | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0574 | 148545824 | CopA family copper resistance protein                               | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0575 | 148545825 | hypothetical protein Pput_0575                                      | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0576 | 148545826 | hypothetical protein Pput_0576                                      | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0577 | 148545827 | inorganic pyrophosphatase                                           | 3.67 | 0    | 1.28  | 0.028 | 0.000 | 0.020 |
| Pput_0578 | 148545828 | hypothetical protein Pput_0578                                      | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0579 | 148545829 | SNARE associated Golgi protein                                      | 0    | 0.16 | 0     | 0.000 | 0.007 | 0.000 |
| Pput_0580 | 148545830 | GCN5-related N-acetyltransferase                                    | 6.1  | 0.8  | 7.28  | 0.046 | 0.035 | 0.116 |
| Pput_0581 | 148545831 | ethanolamine ammonia-lyase small subunit                            | 0    | 0.13 | 1.82  | 0.000 | 0.006 | 0.029 |
| Pput_0582 | 148545832 | ethanolamine ammonia lyase large subunit                            | 0    | 0.15 | 0.74  | 0.000 | 0.007 | 0.012 |
| Pput_0583 | 148545833 | ethanolamine transproter                                            | 0    | 0.15 | 0     | 0.000 | 0.007 | 0.000 |
| Pput_0584 | 148545834 | aldehyde dehydrogenase                                              | 8.3  | 1.18 | 7.18  | 0.063 | 0.052 | 0.115 |
| Pput_0585 | 148545835 | Fis family GAF modulated sigma54 specific transcriptional regulator | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0586 | 148545836 | UDP-N-acetylmuramate                                                | 0.33 | 0.16 | 0.57  | 0.002 | 0.007 | 0.009 |
| Pput_0587 | 148545837 | aromatic acid decarboxylase                                         | 0.36 | 0.36 | 0.89  | 0.003 | 0.016 | 0.014 |
| Pput_0588 | 148545838 | hypothetical protein Pput_0588                                      | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0589 | 148545839 | hypothetical protein Pput_0589                                      | 0.56 | 0.81 | 1.82  | 0.004 | 0.035 | 0.029 |
| Pput_0590 | 148545840 | MORN repeat-containing protein                                      | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0591 | 148545841 | alcohol dehydrogenase                                               | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0592 | 148545842 | branched-chain alpha-keto acid dehydrogenase subunit E2             | 0    | 0    | 0.2   | 0.000 | 0.000 | 0.003 |
| Pput_0593 | 148545843 | transketolase, central region                                       | 0.94 | 0    | 0.96  | 0.007 | 0.000 | 0.015 |
| Pput_0594 | 148545844 | pyruvate dehydrogenase (acetyl-transferring)                        | 0.36 | 0    | 0.81  | 0.003 | 0.000 | 0.013 |
| Pput_0595 | 148545845 | ATP-NAD/AcoX kinase                                                 | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0596 | 148545846 | Fis family GAF modulated sigma54 specific transcriptional regulator | 0.1  | 0    | 0     | 0.001 | 0.000 | 0.000 |
| Pput_0597 | 148545847 | acetyl-CoA carboxylase biotin carboxylase subunit                   | 8.42 | 1.39 | 5.17  | 0.064 | 0.061 | 0.083 |
| Pput_0598 | 148545848 | acetyl-CoA carboxylase biotin carboxyl carrier protein subunit      | 6.48 | 1.82 | 1.45  | 0.049 | 0.080 | 0.023 |
| Pput_0599 | 148545849 | 3-dehydroquinate dehydratase                                        | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0600 | 148545850 | thiol:disulfide interchange protein precursor                       | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0601 | 148545851 | methyl-accepting chemotaxis sensory transducer                      | 0    | 0.11 | 0.1   | 0.000 | 0.005 | 0.002 |
| Pput_0602 | 148545852 | response regulator receiver modulated diguanylate cyclase           | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0603 | 148545853 | hypothetical protein Pput_0603                                      | 1.16 | 1.07 | 1.99  | 0.009 | 0.047 | 0.032 |
| Pput_0604 | 148545854 | NUDIX hydrolase                                                     | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0605 | 148545855 | translation initiation factor SUI1                                  | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0606 | 148545856 | arginine decarboxylase                                              | 0.47 | 0.11 | 0.61  | 0.004 | 0.005 | 0.010 |
| Pput_0607 | 148545857 | hypothetical protein Pput_0607                                      | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0608 | 148545858 | MATE efflux family protein                                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0609 | 148545859 | alpha-2-macroglobulin domain-containing protein                     | 0    | 0    | 0.04  | 0.000 | 0.000 | 0.001 |
| Pput_0610 | 148545860 | hypothetical protein Pput_0610                                      | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0611 | 148545861 | penicillin-binding protein 1C                                       | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0612 | 148545862 | polypeptide-transport-associated domain-containing protein          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0613 | 148545863 | two component LuxR family transcriptional regulator                 | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0614 | 148545864 | peptidase A24A, prepilin type IV                                    | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0615 | 148545865 | hypothetical protein Pput_0615                                      | 9.56 | 5.11 | 25.24 | 0.072 | 0.224 | 0.403 |
| Pput_0616 | 148545866 | hypothetical protein Pput_0616                                      | 0    | 0    | 1.52  | 0.000 | 0.000 | 0.024 |
| Pput_0617 | 148545867 | methyltransferase type 11                                           | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0618 | 148545868 | hypothetical protein Pput_0618                                      | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0619 | 148545869 | dehydratase                                                         | 0    | 0    | 1     | 0.000 | 0.000 | 0.016 |
| Pput_0620 | 148545870 | 3-ketoacyl-(acyl-carrier-protein) reductase                         | 0    | 0.46 | 1.47  | 0.000 | 0.020 | 0.023 |
| Pput_0621 | 148545871 | acetyl-CoA acetyltransferase                                        | 0.17 | 0.27 | 0.45  | 0.001 | 0.012 | 0.007 |
| Pput_0622 | 148545872 | helix-turn-helix domain-containing protein                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0623 | 148545873 | methyl-accepting chemotaxis sensory transducer                      | 0.32 | 0    | 0.45  | 0.002 | 0.000 | 0.007 |
| Pput_0624 | 148545874 | MerR family transcriptional regulator                               | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0625 | 148545875 | heavy metal translocating P-type ATPase                             | 0    | 0    | 0.08  | 0.000 | 0.000 | 0.001 |



|           |           |                                                                      |       |      |      |       |       |       |
|-----------|-----------|----------------------------------------------------------------------|-------|------|------|-------|-------|-------|
| Pput_0626 | 148545876 | hypothetical protein Pput_0626                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0627 | 148545877 | heavy metal transport/detoxification protein                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0628 | 148545878 | Bcr/CfiA subfamily drug resistance transporter                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0629 | 148545879 | hypothetical protein Pput_0629                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0630 | 148545880 | regulatory protein, ArsR                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0631 | 148545881 | adenosine deaminase                                                  | 0.82  | 0.1  | 0.34 | 0.006 | 0.004 | 0.005 |
| Pput_0632 | 148545882 | short chain dehydrogenase                                            | 1.31  | 0.54 | 1.46 | 0.010 | 0.024 | 0.023 |
| Pput_0633 | 148545883 | hypothetical protein Pput_0633                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0634 | 148545884 | TetR family transcriptional regulator                                | 0     | 0.33 | 0.84 | 0.000 | 0.014 | 0.013 |
| Pput_0635 | 148545885 | LysR family transcriptional regulator                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0636 | 148545886 | beta alanine--pyruvate transaminase                                  | 0.56  | 0    | 0    | 0.004 | 0.000 | 0.000 |
| Pput_0637 | 148545887 | methylmalonate-semialdehyde dehydrogenase                            | 1.07  | 0.22 | 0.53 | 0.008 | 0.010 | 0.008 |
| Pput_0638 | 148545888 | paraquat-inducible protein A                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0639 | 148545889 | paraquat-inducible protein A                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0640 | 148545890 | hypothetical protein Pput_0640                                       | 0     | 0.09 | 0.3  | 0.000 | 0.004 | 0.005 |
| Pput_0641 | 148545891 | 30S ribosomal protein S20                                            | 11.42 | 0    | 1.35 | 0.087 | 0.000 | 0.022 |
| Pput_0642 | 148545892 | integral membrane protein MviN                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0643 | 148545893 | bifunctional riboflavin kinase/FMN adenylyltransferase               | 0.87  | 0    | 1.04 | 0.007 | 0.000 | 0.017 |
| Pput_0644 | 148545894 | isoleucyl-tRNA synthetase                                            | 2.45  | 0.19 | 1.09 | 0.019 | 0.008 | 0.017 |
| Pput_0645 | 148545895 | lipoprotein signal peptidase                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0646 | 148545896 | peptidylprolyl isomerase, FKBP-type                                  | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0647 | 148545897 | 4-hydroxy-3-methylbut-2-enyl diphosphate reductase                   | 0.34  | 0    | 0    | 0.003 | 0.000 | 0.000 |
| Pput_0648 | 148545898 | hypothetical protein Pput_0648                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0649 | 148545899 | hypothetical protein Pput_0649                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0650 | 148545900 | hypothetical protein Pput_0650                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0651 | 148545901 | type IV pili biogenesis protein Pile                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0652 | 148545902 | FAD dependent oxidoreductase                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0653 | 148545903 | putative amidase                                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0654 | 148545904 | allantoate amidohydrolase                                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0655 | 148545905 | ABC transporter related                                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0656 | 148545906 | ABC transporter related                                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0657 | 148545907 | inner-membrane translocator                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0658 | 148545908 | inner-membrane translocator                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0659 | 148545909 | branched chain amino acid ABC transporter amino acid-binding protein | 0     | 0    | 0.18 | 0.000 | 0.000 | 0.003 |
| Pput_0660 | 148545910 | regulatory protein GntR, HTH                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0661 | 148545911 | hypothetical protein Pput_0661                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0662 | 148545912 | DNA uptake lipoprotein-like protein                                  | 0.53  | 0.32 | 1.06 | 0.004 | 0.014 | 0.017 |
| Pput_0663 | 148545913 | RluA family pseudouridine synthase                                   | 0.42  | 0.2  | 0.5  | 0.003 | 0.009 | 0.008 |
| Pput_0664 | 148545914 | hypothetical protein Pput_0664                                       | 0     | 0    | 0.31 | 0.000 | 0.000 | 0.005 |
| Pput_0665 | 148545915 | ATPase                                                               | 11.03 | 1.92 | 6.41 | 0.084 | 0.084 | 0.102 |
| Pput_0666 | 148545916 | FAD-dependent pyridine nucleotide-disulphide oxidoreductase          | 0     | 0    | 0.44 | 0.000 | 0.000 | 0.007 |
| Pput_0667 | 148545917 | hypothetical protein Pput_0667                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0668 | 148545918 | hypothetical protein Pput_0668                                       | 0     | 0    | 0.5  | 0.000 | 0.000 | 0.008 |
| Pput_0669 | 148545919 | hypothetical protein Pput_0669                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0670 | 148545920 | hypothetical protein Pput_0670                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0671 | 148545921 | zinc-binding protein                                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0672 | 148545922 | dephospho-CoA kinase                                                 | 0.6   | 0    | 0    | 0.005 | 0.000 | 0.000 |
| Pput_0673 | 148545923 | prepilin peptidase                                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0674 | 148545924 | type II secretion system protein                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0675 | 148545925 | fimbrial protein pilin                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0676 | 148545926 | filamentation induced by cAMP protein Fic                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0680 | 148545927 | hypothetical protein Pput_0680                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0681 | 148545928 | hypothetical protein Pput_0681                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0682 | 148545929 | hypothetical protein Pput_0682                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0683 | 148545930 | hypothetical protein Pput_0683                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0684 | 148545931 | hypothetical protein Pput_0684                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0685 | 148545932 | gluconate transporter                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0686 | 148545933 | hypothetical protein Pput_0686                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0687 | 148545934 | lactate/malate dehydrogenase                                         | 2.67  | 0    | 0.7  | 0.020 | 0.000 | 0.011 |
| Pput_0689 | 148545935 | hypothetical protein Pput_0689                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0690 | 148545936 | polar amino acid ABC transporter, inner membrane subunit             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0691 | 148545937 | extracellular solute-binding protein                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0692 | 148545938 | homocysteine S-methyltransferase                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0693 | 148545939 | cystathionine gamma-synthase                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0694 | 148545940 | amino acid permease-associated region                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0695 | 148545941 | LysR family transcriptional regulator                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0696 | 148545942 | threonine synthase                                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0697 | 148545943 | AsnC family transcriptional regulator                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0698 | 148545944 | homoserine dehydrogenase                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0699 | 148545945 | aldehyde dehydrogenase                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0700 | 148545946 | endoribonuclease L-PSP                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0701 | 148545947 | bile acid:sodium symporter                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0702 | 148545948 | serine hydroxymethyltransferase                                      | 6.18  | 0.37 | 4.33 | 0.047 | 0.016 | 0.069 |
| Pput_0703 | 148545949 | diguanylate cyclase/phosphodiesterase with PAS/PAC and GAF sensor(s) | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0704 | 148545950 | hypothetical protein Pput_0704                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0705 | 148545951 | putative ABC transporter ATP-binding protein                         | 3.27  | 1.4  | 1.98 | 0.025 | 0.061 | 0.032 |
| Pput_0706 | 148545952 | glutamate dehydrogenase                                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0707 | 148545953 | GreA/GreB family elongation factor                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0708 | 148545954 | hypothetical protein Pput_0708                                       | 3.22  | 1.08 | 2.55 | 0.024 | 0.047 | 0.041 |
| Pput_0709 | 148545955 | hypothetical protein Pput_0709                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0710 | 148545956 | hypothetical protein Pput_0710                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0711 | 148545957 | ATP-dependent protease-like protein                                  | 0.91  | 0.18 | 0.92 | 0.007 | 0.008 | 0.015 |
| Pput_0712 | 148545958 | hypothetical protein Pput_0712                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0713 | 148545959 | hypothetical protein Pput_0713                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0714 | 148545960 | hypothetical protein Pput_0714                                       | 1.17  | 0    | 0    | 0.009 | 0.000 | 0.000 |
| Pput_0715 | 148545961 | peptidylprolyl isomerase, FKBP-type                                  | 1.55  | 0.39 | 0.36 | 0.012 | 0.017 | 0.006 |
| Pput_0716 | 148545962 | hypothetical protein Pput_0716                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0717 | 148545963 | alkylphosphonate utilization operon protein PhnA                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0718 | 148545964 | polyprenyl synthetase                                                | 0.83  | 0.22 | 0.44 | 0.006 | 0.010 | 0.007 |

|           |           |                                                           |       |      |      |       |       |       |
|-----------|-----------|-----------------------------------------------------------|-------|------|------|-------|-------|-------|
| Pput_0719 | 148545965 | hypothetical protein Pput_0719                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0720 | 148545966 | 50S ribosomal protein L21                                 | 56.54 | 2.23 | 3.01 | 0.428 | 0.098 | 0.048 |
| Pput_0721 | 148545967 | 50S ribosomal protein L27                                 | 27.19 | 0    | 3.66 | 0.206 | 0.000 | 0.059 |
| Pput_0722 | 148545968 | GTPase ObgE                                               | 0     | 0.27 | 0    | 0.000 | 0.012 | 0.000 |
| Pput_0723 | 148545969 | gamma-glutamyl kinase                                     | 0.2   | 0.57 | 0.6  | 0.002 | 0.025 | 0.010 |
| Pput_0724 | 148545970 | CreA family protein                                       | 0.46  | 0    | 0    | 0.003 | 0.000 | 0.000 |
| Pput_0725 | 148545971 | hypothetical protein Pput_0725                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0726 | 148545972 | hypothetical protein Pput_0726                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0727 | 148545973 | hypothetical protein Pput_0727                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0728 | 148545974 | hypothetical protein Pput_0728                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0729 | 148545975 | ribosomal-protein-alanine acetyltransferase               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0730 | 148545976 | peptidase M15A                                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0731 | 148545977 | LysR family transcriptional regulator                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0732 | 148545978 | lysine exporter protein LysE/YggA                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0733 | 148545979 | anti-FecI sigma factor, FecR                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0734 | 148545980 | major facilitator transporter                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0735 | 148545981 | major facilitator transporter                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0736 | 148545982 | anti-FecI sigma factor, FecR                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0737 | 148545983 | ECF subfamily RNA polymerase sigma-24 factor              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0738 | 148545984 | DNA-3-methyladenine glycosylase II                        | 0     | 0.36 | 1.18 | 0.000 | 0.016 | 0.019 |
| Pput_0739 | 148545985 | methylated-DNA--protein-cysteine methyltransferase        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0740 | 148545986 | MscS mechanosensitive ion channel                         | 0     | 0.13 | 0.84 | 0.000 | 0.006 | 0.013 |
| Pput_0741 | 148545987 | Egg lysin (Sperm-lysin)                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0742 | 148545988 | aldehyde dehydrogenase                                    | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0743 | 148545989 | permease for cytosine/purine, uracil, thiamine, allantoin | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0744 | 148545990 | hypothetical protein Pput_0744                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0745 | 148545991 | isochorismatase hydrolase                                 | 2.49  | 0    | 2.4  | 0.019 | 0.000 | 0.038 |
| Pput_0746 | 148545992 | hypothetical protein Pput_0746                            | 0.25  | 0    | 0.78 | 0.002 | 0.000 | 0.012 |
| Pput_0747 | 148545993 | potassium efflux system protein                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0748 | 148545994 | hypothetical protein Pput_0748                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0749 | 148545995 | RND efflux system outer membrane lipoprotein              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0750 | 148545996 | secretion protein HlyD family protein                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0751 | 148545997 | hypothetical protein Pput_0751                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0752 | 148545998 | sulfate transporter                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0753 | 148545999 | GTP-dependent nucleic acid-binding protein EngD           | 0.56  | 0.4  | 0.78 | 0.004 | 0.018 | 0.012 |
| Pput_0754 | 148546000 | peptidyl-tRNA hydrolase                                   | 1.92  | 0.96 | 1.72 | 0.015 | 0.042 | 0.027 |
| Pput_0755 | 148546001 | 50S ribosomal protein L25/general stress protein Ctc      | 23.89 | 3.43 | 9.42 | 0.181 | 0.150 | 0.151 |
| Pput_0756 | 148546002 | ribose-phosphate pyrophosphokinase                        | 9.51  | 1.85 | 1.43 | 0.072 | 0.081 | 0.023 |
| Pput_0757 | 148546003 | 4-diphosphocytidyl-2-C-methyl-D-erythritol kinase         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0758 | 148546004 | outer membrane lipoprotein LolB                           | 0.95  | 0.59 | 1.78 | 0.007 | 0.026 | 0.028 |
| Pput_0759 | 148546005 | TPR repeat-containing protein                             | 0.18  | 0    | 0.39 | 0.001 | 0.000 | 0.006 |
| Pput_0760 | 148546006 | glutamyl-tRNA reductase                                   | 0     | 0.17 | 0    | 0.000 | 0.007 | 0.000 |
| Pput_0761 | 148546007 | peptide chain release factor 1                            | 0     | 0    | 0.38 | 0.000 | 0.000 | 0.006 |
| Pput_0762 | 148546008 | HemK family modification methylase                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0763 | 148546009 | molybdopterin biosynthesis protein MoeB                   | 0.48  | 0.14 | 0    | 0.004 | 0.006 | 0.000 |
| Pput_0764 | 148546010 | glutamate racemase                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0765 | 148546011 | hypothetical protein Pput_0765                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0766 | 148546012 | hypothetical protein Pput_0766                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0767 | 148546013 | deoxyribodipyrimidine photo-lyase                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0768 | 148546014 | MerR family transcriptional regulator                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0769 | 148546015 | hypothetical protein Pput_0769                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0770 | 148546016 | NAD/FAD-dependent oxidoreductase-like protein             | 0.44  | 0    | 0    | 0.003 | 0.000 | 0.000 |
| Pput_0771 | 148546017 | NAD-dependent epimerase/dehydratase                       | 0.71  | 0    | 0.48 | 0.005 | 0.000 | 0.008 |
| Pput_0772 | 148546018 | ferrochelataase                                           | 0     | 0    | 0.53 | 0.000 | 0.000 | 0.008 |
| Pput_0773 | 148546019 | uracil-xanthine permease                                  | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0774 | 148546020 | uracil phosphoribosyltransferase                          | 1.15  | 0    | 0.58 | 0.009 | 0.000 | 0.009 |
| Pput_0775 | 148546021 | hypoxanthine-guanine phosphoribosyltransferase            | 2.14  | 0    | 0    | 0.016 | 0.000 | 0.000 |
| Pput_0776 | 148546022 | hypothetical protein Pput_0776                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0777 | 148546023 | hypothetical protein Pput_0777                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0778 | 148546024 | hypothetical protein Pput_0778                            | 0.86  | 0    | 0    | 0.007 | 0.000 | 0.000 |
| Pput_0779 | 148546025 | malate:quinone oxidoreductase                             | 1.67  | 0.39 | 1.82 | 0.013 | 0.017 | 0.029 |
| Pput_0780 | 148546026 | hypothetical protein Pput_0780                            | 15.38 | 3.68 | 7.6  | 0.116 | 0.161 | 0.121 |
| Pput_0781 | 148546027 | hypothetical protein Pput_0781                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0782 | 148546028 | hypothetical protein Pput_0782                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0783 | 148546029 | phospholipid/glycerol acyltransferase                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0784 | 148546030 | hypothetical protein Pput_0784                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0785 | 148546031 | hypothetical protein Pput_0785                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0786 | 148546032 | hypothetical protein Pput_0786                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0787 | 148546033 | peptidase M48, Ste24p                                     | 0.26  | 0    | 2.1  | 0.002 | 0.000 | 0.034 |
| Pput_0788 | 148546034 | hypothetical protein Pput_0788                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0789 | 148546035 | rRNA (guanine-N(2)-)-methyltransferase                    | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0790 | 148546036 | glycerate dehydrogenase                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0791 | 148546037 | acyl-CoA synthetase                                       | 0.18  | 0.12 | 0.74 | 0.001 | 0.005 | 0.012 |
| Pput_0792 | 148546038 | hypothetical protein Pput_0792                            | 0.81  | 0.37 | 3.03 | 0.006 | 0.016 | 0.048 |
| Pput_0793 | 148546039 | hypothetical protein Pput_0793                            | 1.56  | 0.33 | 6.33 | 0.012 | 0.014 | 0.101 |
| Pput_0794 | 148546040 | regulatory protein, LuxR                                  | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0795 | 148546041 | response regulator receiver protein                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0796 | 148546042 | histidine kinase                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0797 | 148546043 | beta-lactamase domain-containing protein                  | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0798 | 148546044 | OmpA/MotB domain-containing protein                       | 10.15 | 3.47 | 5.38 | 0.077 | 0.152 | 0.086 |
| Pput_0799 | 148546045 | phosphate acetyltransferase                               | 0.1   | 0.1  | 0.16 | 0.001 | 0.004 | 0.003 |
| Pput_0800 | 148546046 | hypothetical protein Pput_0800                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0801 | 148546047 | peptidylprolyl isomerase, FKBP-type                       | 2.59  | 0.84 | 1.07 | 0.020 | 0.037 | 0.017 |
| Pput_0802 | 148546048 | peroxiredoxin                                             | 0.44  | 0.49 | 0    | 0.003 | 0.021 | 0.000 |
| Pput_0803 | 148546049 | glycosyl transferase, group 1                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0804 | 148546050 | methyl-accepting chemotaxis sensory transducer            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0805 | 148546051 | hypothetical protein Pput_0805                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0806 | 148546052 | GAD-like protein                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_0808 | 148546053 | putative sulfate transport protein CysZ                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |

|           |           |                                                                      |        |      |       |       |       |       |
|-----------|-----------|----------------------------------------------------------------------|--------|------|-------|-------|-------|-------|
| Pput_0809 | 148546054 | thioredoxin reductase                                                | 2.54   | 0    | 1.46  | 0.019 | 0.000 | 0.023 |
| Pput_0810 | 148546055 | nicotinate-nucleotide pyrophosphorylase                              | 0.98   | 0    | 0     | 0.007 | 0.000 | 0.000 |
| Pput_0811 | 148546056 | hypothetical protein Pput_0811                                       | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0812 | 148546057 | N-acetyl-anhydromuranmyl-L-alanine amidase                           | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0813 | 148546058 | signaling modulator of AmpD, AmpE                                    | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0814 | 148546059 | TatD family hydrolase                                                | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0815 | 148546060 | DNA-binding transcriptional regulator FruR                           | 0.45   | 0.45 | 1.84  | 0.003 | 0.020 | 0.029 |
| Pput_0816 | 148546061 | phosphoenolpyruvate-protein phosphotransferase                       | 0.15   | 0    | 0     | 0.001 | 0.000 | 0.000 |
| Pput_0817 | 148546062 | 1-phosphofructokinase                                                | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0818 | 148546063 | PTS system, fructose subfamily, IIC subunit                          | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0819 | 148546064 | hypothetical protein Pput_0819                                       | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0820 | 148546065 | hypothetical protein Pput_0820                                       | 4.24   | 0    | 0     | 0.032 | 0.000 | 0.000 |
| Pput_0821 | 148546066 | diguanylate cyclase                                                  | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0822 | 148546067 | outer membrane porin                                                 | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0823 | 148546068 | hypothetical protein Pput_0823                                       | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0824 | 148546069 | hypothetical protein Pput_0824                                       | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0825 | 148546070 | hypothetical protein Pput_0825                                       | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0826 | 148546071 | putative CheW protein                                                | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0827 | 148546072 | HlyD family type I secretion membrane fusion protein                 | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0828 | 148546073 | ABC transporter related                                              | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0829 | 148546074 | TolC family type I secretion outer membrane protein                  | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0830 | 148546075 | glycoprotein                                                         | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0831 | 148546076 | anaerobic nitric oxide reductase transcription regulator             | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0832 | 148546077 | nitric oxide dioxygenase                                             | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0833 | 148546078 | disulfide bond formation protein B                                   | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0835 | 148546079 | ubiquinol oxidase, subunit II                                        | 0.68   | 0    | 0     | 0.005 | 0.000 | 0.000 |
| Pput_0836 | 148546080 | cytochrome o ubiquinol oxidase, subunit I                            | 0.2    | 0.1  | 0     | 0.002 | 0.004 | 0.000 |
| Pput_0837 | 148546081 | cytochrome o ubiquinol oxidase, subunit III                          | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0838 | 148546082 | cytochrome o ubiquinol oxidase subunit IV                            | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0839 | 148546083 | protoheme IX farnesyltransferase                                     | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0840 | 148546084 | aminotransferase                                                     | 0.17   | 0.08 | 0     | 0.001 | 0.004 | 0.000 |
| Pput_0841 | 148546085 | hypothetical protein Pput_0841                                       | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0842 | 148546086 | hypothetical protein Pput_0842                                       | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0843 | 148546087 | GCN5-related N-acetyltransferase                                     | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0844 | 148546088 | ECF subfamily RNA polymerase sigma-24 factor                         | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0845 | 148546089 | anti-FecI sigma factor, FecR                                         | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0846 | 148546090 | TonB-dependent siderophore receptor                                  | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0847 | 148546091 | hypothetical protein Pput_0847                                       | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0848 | 148546092 | hypothetical protein Pput_0848                                       | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0849 | 148546093 | tRNA 2-selenouridine synthase                                        | 0      | 0    | 0.29  | 0.000 | 0.000 | 0.005 |
| Pput_0850 | 148546094 | selenophosphate synthetase                                           | 0.8    | 0    | 0     | 0.006 | 0.000 | 0.000 |
| Pput_0851 | 148546095 | phosphonate ABC transporter, periplasmic phosphonate-binding protein | 0.7    | 0    | 0.64  | 0.005 | 0.000 | 0.010 |
| Pput_0852 | 148546096 | phosphonate ABC transporter, inner membrane subunit                  | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0853 | 148546097 | phosphonate ABC transporter, inner membrane subunit                  | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0854 | 148546098 | hypothetical protein Pput_0854                                       | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0855 | 148546099 | addiction module killer protein                                      | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0856 | 148546100 | putative transcriptional regulator                                   | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0857 | 148546101 | GCN5-related N-acetyltransferase                                     | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0858 | 148546102 | hypothetical protein Pput_0858                                       | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0859 | 148546103 | glyoxalase/bleomycin resistance protein/dioxygenase                  | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0860 | 148546104 | FAD dependent oxidoreductase                                         | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0861 | 148546105 | endoribonuclease L-PSP                                               | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0862 | 148546106 | S-adenosylmethionine:tRNA ribosyltransferase-isomerase               | 0      | 0.45 | 0.31  | 0.000 | 0.020 | 0.005 |
| Pput_0863 | 148546107 | queuine tRNA-ribosyltransferase                                      | 0.18   | 0.53 | 0.27  | 0.001 | 0.023 | 0.004 |
| Pput_0864 | 148546108 | preprotein translocase subunit YajC                                  | 1.11   | 0    | 0     | 0.008 | 0.000 | 0.000 |
| Pput_0865 | 148546109 | preprotein translocase subunit SecD                                  | 0      | 0.18 | 1.98  | 0.000 | 0.008 | 0.032 |
| Pput_0866 | 148546110 | preprotein translocase subunit SecF                                  | 0      | 0    | 0.36  | 0.000 | 0.000 | 0.006 |
| Pput_0867 | 148546111 | hypothetical protein Pput_0867                                       | 2.4    | 0.94 | 2.03  | 0.018 | 0.041 | 0.032 |
| Pput_0868 | 148546112 | inositol-phosphate phosphatase                                       | 2.43   | 0.27 | 2.63  | 0.018 | 0.012 | 0.042 |
| Pput_0869 | 148546113 | RNA methyltransferase                                                | 0.38   | 0    | 0     | 0.003 | 0.000 | 0.000 |
| Pput_0870 | 148546114 | serine O-acetyltransferase                                           | 1.12   | 0    | 0     | 0.008 | 0.000 | 0.000 |
| Pput_0871 | 148546115 | BadM/Rrf2 family transcriptional regulator                           | 1.68   | 0.41 | 0.98  | 0.013 | 0.018 | 0.016 |
| Pput_0872 | 148546116 | cysteine desulfurase                                                 | 0.32   | 0.38 | 1.64  | 0.002 | 0.017 | 0.026 |
| Pput_0873 | 148546117 | scaffold protein                                                     | 0.92   | 0    | 0     | 0.007 | 0.000 | 0.000 |
| Pput_0874 | 148546118 | iron-sulfur cluster assembly protein IscA                            | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0875 | 148546119 | co-chaperone HscB                                                    | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0876 | 148546120 | chaperone protein HscA                                               | 0.24   | 0.18 | 0.31  | 0.002 | 0.008 | 0.005 |
| Pput_0877 | 148546121 | ferredoxin, 2Fe-2S type, ISC system                                  | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0878 | 148546122 | hypothetical protein Pput_0878                                       | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0879 | 148546123 | nucleoside-diphosphate kinase                                        | 176.46 | 6.02 | 18.52 | 1.337 | 0.264 | 0.296 |
| Pput_0880 | 148546124 | radical SAM protein                                                  | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0881 | 148546125 | type IV pilus biogenesis/stability protein PilW                      | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0882 | 148546126 | helix-turn-helix domain-containing protein                           | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0883 | 148546127 | 4-hydroxy-3-methylbut-2-en-1-yl diphosphate synthase                 | 0.57   | 0.57 | 0.96  | 0.004 | 0.025 | 0.015 |
| Pput_0884 | 148546128 | histidyl-tRNA synthetase                                             | 0.69   | 0.35 | 0.86  | 0.005 | 0.015 | 0.014 |
| Pput_0885 | 148546129 | hypothetical protein Pput_0885                                       | 1.04   | 0    | 0     | 0.008 | 0.000 | 0.000 |
| Pput_0886 | 148546130 | Pyrrolo-quinoline quinone                                            | 0.18   | 0.55 | 1.4   | 0.001 | 0.024 | 0.022 |
| Pput_0887 | 148546131 | GTP-binding protein EngA                                             | 0.71   | 0.22 | 1.34  | 0.005 | 0.010 | 0.021 |
| Pput_0888 | 148546132 | putative aminotransferase                                            | 0      | 0    | 0.29  | 0.000 | 0.000 | 0.005 |
| Pput_0889 | 148546133 | Nitrilase/cyanide hydratase and apolipoprotein N-acyltransferase     | 0.69   | 0    | 1.43  | 0.005 | 0.000 | 0.023 |
| Pput_0890 | 148546134 | flavodoxin/nitric oxide synthase                                     | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0891 | 148546135 | TonB-dependent siderophore receptor                                  | 0.4    | 0.3  | 0     | 0.003 | 0.013 | 0.000 |
| Pput_0892 | 148546136 | putative hydroxylase                                                 | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0893 | 148546137 | Sel1 domain-containing protein                                       | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0894 | 148546138 | ornithine decarboxylase                                              | 0.36   | 0.18 | 0.36  | 0.003 | 0.008 | 0.006 |
| Pput_0895 | 148546139 | ECF subfamily RNA polymerase sigma-24 factor                         | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0896 | 148546140 | anti-FecI sigma factor, FecR                                         | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0897 | 148546141 | TonB-dependent siderophore receptor                                  | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0898 | 148546142 | glycine betaine/L-proline ABC transporter, ATPase subunit            | 0      | 0    | 0     | 0.000 | 0.000 | 0.000 |

|           |           |                                                                                  |      |       |       |       |       |       |
|-----------|-----------|----------------------------------------------------------------------------------|------|-------|-------|-------|-------|-------|
| Pput_0899 | 148546143 | binding-protein-dependent transport systems inner membrane component             | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0900 | 148546144 | substrate-binding region of ABC-type glycine betaine transport system            | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0901 | 148546145 | binding-protein-dependent transport systems inner membrane component             | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0902 | 148546146 | peptide chain release factor 3                                                   | 0.26 | 0     | 0.12  | 0.002 | 0.000 | 0.002 |
| Pput_0903 | 148546147 | extracellular solute-binding protein                                             | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0904 | 148546148 | protein of unknown function DUF861, cupin_3                                      | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0905 | 148546149 | FAD dependent oxidoreductase                                                     | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0906 | 148546150 | helix-turn-helix domain-containing protein                                       | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0908 | 148546151 | hypothetical protein Pput_0908                                                   | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0909 | 148546152 | glyoxalase/bleomycin resistance protein/dioxygenase                              | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0910 | 148546153 | hypothetical protein Pput_0910                                                   | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0911 | 148546154 | hypothetical protein Pput_0911                                                   | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0912 | 148546155 | biotin carboxylase-like protein                                                  | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0913 | 148546156 | sodium/hydrogen exchanger                                                        | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0914 | 148546157 | hypothetical protein Pput_0914                                                   | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0915 | 148546158 | LysR family transcriptional regulator                                            | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0916 | 148546159 | rubredoxin-type Fe(Cys) <sub>4</sub> protein                                     | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0917 | 148546160 | dipeptide transporter ATP-binding subunit                                        | 0.22 | 0     | 0     | 0.002 | 0.000 | 0.000 |
| Pput_0918 | 148546161 | oligopeptide/dipeptide ABC transporter, ATPase subunit                           | 0    | 0     | 0.56  | 0.000 | 0.000 | 0.009 |
| Pput_0919 | 148546162 | binding-protein-dependent transport systems inner membrane component             | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0920 | 148546163 | alkaline phosphatase                                                             | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0921 | 148546164 | extracellular solute-binding protein                                             | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0922 | 148546165 | outer membrane porin                                                             | 0    | 0     | 1.18  | 0.000 | 0.000 | 0.019 |
| Pput_0923 | 148546166 | extracellular solute-binding protein                                             | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0924 | 148546167 | extracellular solute-binding protein                                             | 0.49 | 0     | 2.14  | 0.004 | 0.000 | 0.034 |
| Pput_0925 | 148546168 | hypothetical protein Pput_0925                                                   | 0.64 | 0.32  | 0     | 0.005 | 0.014 | 0.000 |
| Pput_0926 | 148546169 | integral membrane sensor signal transduction histidine kinase                    | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0927 | 148546170 | two component Fis family transcriptional regulator                               | 3.1  | 0     | 2.98  | 0.023 | 0.000 | 0.048 |
| Pput_0928 | 148546171 | beta-lactamase                                                                   | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0929 | 148546172 | hypothetical protein Pput_0929                                                   | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0930 | 148546173 | YceI family protein                                                              | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0931 | 148546174 | phosphatidylserine/phosphatidylglycerophosphate/cardioplin synthase-like protein | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0932 | 148546175 | PfpI family intracellular peptidase                                              | 0.8  | 0     | 1.23  | 0.006 | 0.000 | 0.020 |
| Pput_0933 | 148546176 | hypothetical protein Pput_0933                                                   | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0934 | 148546177 | hypothetical protein Pput_0934                                                   | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0935 | 148546178 | Nitrilase/cyanide hydratase and apolipoprotein N-acyltransferase                 | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0936 | 148546179 | tartrate/fumarate subfamily Fe-S type hydro-lyase alpha subunit                  | 4.2  | 0.3   | 1.25  | 0.032 | 0.013 | 0.020 |
| Pput_0937 | 148546180 | hypothetical protein Pput_0937                                                   | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0938 | 148546181 | hypothetical protein Pput_0938                                                   | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0939 | 148546182 | PAP2 (acid phosphatase) superfamily protein-like protein                         | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0940 | 148546183 | two component transcriptional regulator                                          | 1    | 1.29  | 2     | 0.008 | 0.056 | 0.032 |
| Pput_0941 | 148546184 | integral membrane sensor signal transduction histidine kinase                    | 0.16 | 0.08  | 0.41  | 0.001 | 0.004 | 0.007 |
| Pput_0942 | 148546185 | methyltransferase type 11                                                        | 12.4 | 12.18 | 10.64 | 0.094 | 0.533 | 0.170 |
| Pput_0943 | 148546186 | lipopolysaccharide kinase                                                        | 2.56 | 1.51  | 10.97 | 0.019 | 0.066 | 0.175 |
| Pput_0944 | 148546187 | hypothetical protein Pput_0944                                                   | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0945 | 148546188 | multidrug efflux protein                                                         | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0946 | 148546189 | RND family efflux transporter MFP subunit                                        | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0947 | 148546190 | hypothetical protein Pput_0947                                                   | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0948 | 148546191 | periplasmic lipoprotein-like protein                                             | 3.53 | 0.45  | 0.95  | 0.027 | 0.020 | 0.015 |
| Pput_0949 | 148546192 | hypothetical protein Pput_0949                                                   | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0950 | 148546193 | hypothetical protein Pput_0950                                                   | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0951 | 148546194 | hypothetical protein Pput_0951                                                   | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0952 | 148546195 | hypothetical protein Pput_0952                                                   | 4.44 | 0.16  | 0.48  | 0.034 | 0.007 | 0.008 |
| Pput_0953 | 148546196 | diguanylate cyclase/phosphodiesterase                                            | 0    | 0     | 0.1   | 0.000 | 0.000 | 0.002 |
| Pput_0954 | 148546197 | superoxide dismutase                                                             | 0.89 | 0     | 0.38  | 0.007 | 0.000 | 0.006 |
| Pput_0955 | 148546198 | lysine exporter protein LysE/YggA                                                | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0956 | 148546199 | chromosome replication initiation inhibitor protein                              | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0957 | 148546200 | NAD-dependent epimerase/dehydratase                                              | 0    | 0     | 0.3   | 0.000 | 0.000 | 0.005 |
| Pput_0958 | 148546201 | hypothetical protein Pput_0958                                                   | 0.59 | 0     | 0.26  | 0.004 | 0.000 | 0.004 |
| Pput_0959 | 148546202 | NADH:flavin oxidoreductase/NADH oxidase                                          | 0    | 0.94  | 0     | 0.000 | 0.041 | 0.000 |
| Pput_0960 | 148546203 | regulatory protein, ArsR                                                         | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0961 | 148546204 | hypothetical protein Pput_0961                                                   | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0962 | 148546205 | phospholipid/glycerol acyltransferase                                            | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0963 | 148546206 | hypothetical protein Pput_0963                                                   | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0964 | 148546207 | hypothetical protein Pput_0964                                                   | 1    | 0.57  | 1.67  | 0.008 | 0.025 | 0.027 |
| Pput_0965 | 148546208 | hypothetical protein Pput_0965                                                   | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0966 | 148546209 | auxin efflux carrier                                                             | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0967 | 148546210 | amino acid permease-associated region                                            | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0968 | 148546211 | CaCA family Na <sup>(+)</sup> /Ca <sup>(+)</sup> antiporter                      | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0969 | 148546212 | rare lipoprotein A                                                               | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0970 | 148546213 | aspartyl/glutamyl-tRNA amidotransferase subunit B                                | 2.72 | 0.5   | 2.81  | 0.021 | 0.022 | 0.045 |
| Pput_0971 | 148546214 | aspartyl/glutamyl-tRNA amidotransferase subunit A                                | 1.24 | 0.23  | 0.9   | 0.009 | 0.010 | 0.014 |
| Pput_0972 | 148546215 | aspartyl/glutamyl-tRNA amidotransferase subunit C                                | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0973 | 148546216 | rod shape-determining protein MreB                                               | 4.01 | 1.62  | 6.8   | 0.030 | 0.071 | 0.109 |
| Pput_0974 | 148546217 | rod shape-determining protein MreC                                               | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0975 | 148546218 | rod shape-determining protein MreD                                               | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0976 | 148546219 | Maf-like protein                                                                 | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0977 | 148546220 | ribonuclease                                                                     | 0.21 | 0.14  | 0.52  | 0.002 | 0.006 | 0.008 |
| Pput_0978 | 148546221 | hypothetical protein Pput_0978                                                   | 0    | 0     | 0.05  | 0.000 | 0.000 | 0.001 |
| Pput_0979 | 148546222 | Nitrilase/cyanide hydratase and apolipoprotein N-acyltransferase                 | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0980 | 148546223 | peptidase U62, modulator of DNA gyrase                                           | 0    | 0.15  | 0.5   | 0.000 | 0.007 | 0.008 |
| Pput_0981 | 148546224 | hypothetical protein Pput_0981                                                   | 3.18 | 0.69  | 0.69  | 0.024 | 0.030 | 0.011 |
| Pput_0982 | 148546225 | peptidase U62, modulator of DNA gyrase                                           | 0.66 | 0.16  | 1.27  | 0.005 | 0.007 | 0.020 |
| Pput_0983 | 148546226 | hypothetical protein Pput_0983                                                   | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0984 | 148546227 | fumarate hydratase                                                               | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0985 | 148546228 | superoxide dismutase                                                             | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0986 | 148546229 | zinc/iron permease                                                               | 0    | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0987 | 148546230 | phosphotransferase system, phosphocarrier protein HPr                            | 1.23 | 0     | 0     | 0.009 | 0.000 | 0.000 |
| Pput_0988 | 148546231 | hypothetical protein Pput_0988                                                   | 0.81 | 0.39  | 0.75  | 0.006 | 0.017 | 0.012 |

|           |           |                                                                      |       |      |       |       |       |       |
|-----------|-----------|----------------------------------------------------------------------|-------|------|-------|-------|-------|-------|
| Pput_0989 | 148546232 | PTS IIA-like nitrogen-regulatory protein PtsN                        | 0     | 0.51 | 0     | 0.000 | 0.022 | 0.000 |
| Pput_0990 | 148546233 | sigma 54 modulation protein/ribosomal protein S30EA                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0991 | 148546234 | RNA polymerase factor sigma-54                                       | 1.58  | 0.47 | 1.06  | 0.012 | 0.021 | 0.017 |
| Pput_0992 | 148546235 | ABC transporter related                                              | 1.68  | 0.49 | 2.12  | 0.013 | 0.021 | 0.034 |
| Pput_0993 | 148546236 | cell envelope biogenesis YhbN                                        | 4.33  | 0    | 0.63  | 0.033 | 0.000 | 0.010 |
| Pput_0994 | 148546237 | hypothetical protein Pput_0994                                       | 1.88  | 0.39 | 0.78  | 0.014 | 0.017 | 0.012 |
| Pput_0995 | 148546238 | 3-deoxy-D-manno-octulosonate 8-phosphate phosphatase                 | 1.6   | 0    | 0.45  | 0.012 | 0.000 | 0.007 |
| Pput_0996 | 148546239 | KpsF/GutQ family protein                                             | 0.59  | 0    | 0.45  | 0.004 | 0.000 | 0.007 |
| Pput_0997 | 148546240 | ABC transporter related                                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0998 | 148546241 | hypothetical protein Pput_0998                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_0999 | 148546242 | hypothetical protein Pput_0999                                       | 1.04  | 0    | 0.75  | 0.008 | 0.000 | 0.012 |
| Pput_1000 | 148546243 | toluene tolerance family protein                                     | 1.37  | 0.56 | 1.97  | 0.010 | 0.025 | 0.031 |
| Pput_1001 | 148546244 | hypothetical protein Pput_1001                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1002 | 148546245 | BolA family protein                                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1003 | 148546246 | UDP-N-acetylglucosamine 1-carboxyvinyltransferase                    | 1.07  | 0.27 | 0.94  | 0.008 | 0.012 | 0.015 |
| Pput_1004 | 148546247 | ATP phosphoribosyltransferase catalytic subunit                      | 2.3   | 0.84 | 1.69  | 0.017 | 0.037 | 0.027 |
| Pput_1005 | 148546248 | histidinol dehydrogenase                                             | 2.23  | 0.46 | 1.34  | 0.017 | 0.020 | 0.021 |
| Pput_1006 | 148546249 | histidinol-phosphate aminotransferase                                | 2.38  | 0.74 | 1.6   | 0.018 | 0.032 | 0.026 |
| Pput_1007 | 148546250 | hypothetical protein Pput_1007                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1008 | 148546251 | GntR domain-containing protein                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1009 | 148546252 | cyanate transporter                                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1010 | 148546253 | hypothetical protein Pput_1010                                       | 1.94  | 0.47 | 1.47  | 0.015 | 0.021 | 0.023 |
| Pput_1011 | 148546254 | GIY-YIG nuclease superfamily protein                                 | 0     | 0    | 1.28  | 0.000 | 0.000 | 0.020 |
| Pput_1012 | 148546255 | nucleoid-associated protein NdpA                                     | 0.42  | 0    | 0.31  | 0.003 | 0.000 | 0.005 |
| Pput_1013 | 148546256 | histone family protein DNA-binding protein                           | 7.78  | 4.29 | 2.86  | 0.059 | 0.188 | 0.046 |
| Pput_1014 | 148546257 | putative SAM-dependent methyltransferase                             | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1015 | 148546258 | valyl-tRNA synthetase                                                | 0.41  | 0.18 | 0.73  | 0.003 | 0.008 | 0.012 |
| Pput_1016 | 148546259 | hypothetical protein Pput_1016                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1017 | 148546260 | DNA polymerase III subunit chi                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1018 | 148546261 | leucyl aminopeptidase                                                | 4.17  | 0.98 | 4.47  | 0.032 | 0.043 | 0.071 |
| Pput_1019 | 148546262 | permease YjgP/YjgQ family protein                                    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1020 | 148546263 | permease YjgP/YjgQ family protein                                    | 0.52  | 0    | 0.2   | 0.004 | 0.000 | 0.003 |
| Pput_1021 | 148546264 | RDD domain-containing protein                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1022 | 148546265 | cold-shock DNA-binding domain-containing protein                     | 5.16  | 0    | 1.37  | 0.039 | 0.000 | 0.022 |
| Pput_1023 | 148546266 | glycine cleavage system T protein                                    | 1.51  | 0.42 | 1.51  | 0.011 | 0.018 | 0.024 |
| Pput_1024 | 148546267 | L-serine dehydratase 1                                               | 0     | 0    | 0.24  | 0.000 | 0.000 | 0.004 |
| Pput_1025 | 148546268 | glycine dehydrogenase                                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1026 | 148546269 | glycine cleavage system protein H                                    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1027 | 148546270 | DoxX family protein                                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1028 | 148546271 | hypothetical protein Pput_1028                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1029 | 148546272 | hypothetical protein Pput_1029                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1030 | 148546273 | hypothetical protein Pput_1030                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1031 | 148546274 | RNA polymerase sigma factor                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1032 | 148546275 | hypothetical protein Pput_1032                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1033 | 148546276 | sodium/glutamate symporter                                           | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1034 | 148546277 | transcriptional regulator, TyrR                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1035 | 148546278 | hypothetical protein Pput_1035                                       | 3.41  | 0    | 0     | 0.026 | 0.000 | 0.000 |
| Pput_1036 | 148546279 | carbamate kinase                                                     | 1.35  | 0.38 | 1.88  | 0.010 | 0.017 | 0.030 |
| Pput_1037 | 148546280 | ornithine carbamoyltransferase                                       | 10.76 | 5.57 | 19.41 | 0.082 | 0.244 | 0.310 |
| Pput_1038 | 148546281 | arginine deiminase                                                   | 11.73 | 2.7  | 8.39  | 0.089 | 0.118 | 0.134 |
| Pput_1039 | 148546282 | arginine/ornithine antiporter                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1040 | 148546283 | arginine/ornithine antiporter                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1041 | 148546284 | hypothetical protein Pput_1041                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1042 | 148546285 | heme oxygenase                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1043 | 148546286 | TonB-dependent hemoglobin/transferrin/lactoferrin family receptor    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1044 | 148546287 | anti-FecI sigma factor, FecR                                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1045 | 148546288 | ECF subfamily RNA polymerase sigma-24 factor                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1046 | 148546289 | transposase, IS111A/IS1328/IS1533                                    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1047 | 148546290 | glyceraldehyde-3-phosphate dehydrogenase, type I                     | 7.08  | 0.62 | 0.3   | 0.054 | 0.027 | 0.005 |
| Pput_1048 | 148546291 | phosphogluconate dehydratase                                         | 5.39  | 0.47 | 0.38  | 0.041 | 0.021 | 0.006 |
| Pput_1049 | 148546292 | glucokinase                                                          | 2.72  | 0    | 1.37  | 0.021 | 0.000 | 0.022 |
| Pput_1050 | 148546293 | two component transcriptional regulator                              | 0.27  | 0    | 0     | 0.002 | 0.000 | 0.000 |
| Pput_1051 | 148546294 | integral membrane sensor signal transduction histidine kinase        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1052 | 148546295 | N-acetylglucosamine 2-epimerase                                      | 0.16  | 0    | 0     | 0.001 | 0.000 | 0.000 |
| Pput_1053 | 148546296 | extracellular solute-binding protein                                 | 36.27 | 0    | 0.17  | 0.275 | 0.000 | 0.003 |
| Pput_1054 | 148546297 | binding-protein-dependent transport systems inner membrane component | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1055 | 148546298 | binding-protein-dependent transport systems inner membrane component | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1056 | 148546299 | ABC transporter related                                              | 1.64  | 0.41 | 0     | 0.012 | 0.018 | 0.000 |
| Pput_1057 | 148546300 | carbohydrate-selective porin OprB                                    | 4.24  | 1.22 | 0.58  | 0.032 | 0.053 | 0.009 |
| Pput_1058 | 148546301 | aldose 1-epimerase                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1059 | 148546302 | DNA-binding transcriptional regulator HexR                           | 0.57  | 0.4  | 2.74  | 0.004 | 0.018 | 0.044 |
| Pput_1060 | 148546303 | glucose-6-phosphate 1-dehydrogenase                                  | 6.68  | 0.58 | 1.87  | 0.051 | 0.025 | 0.030 |
| Pput_1061 | 148546304 | 6-phosphogluconolactonase                                            | 14.16 | 0.53 | 2.93  | 0.107 | 0.023 | 0.047 |
| Pput_1062 | 148546305 | keto-hydroxyglutarate-aldolase/keto-deoxy-phosphogluconate aldolase  | 9.74  | 0.79 | 3.67  | 0.074 | 0.035 | 0.059 |
| Pput_1063 | 148546306 | hypothetical protein Pput_1063                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1064 | 148546307 | hypothetical protein Pput_1064                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1065 | 148546308 | 2-isopropylmalate synthase                                           | 0.76  | 0.19 | 1.19  | 0.006 | 0.008 | 0.019 |
| Pput_1066 | 148546309 | peptidase M23B                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1067 | 148546310 | exodeoxyribonuclease VII large subunit                               | 0     | 0.07 | 0.29  | 0.000 | 0.003 | 0.005 |
| Pput_1068 | 148546311 | LysR family transcriptional regulator                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1069 | 148546312 | hypothetical protein Pput_1069                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1070 | 148546313 | hypothetical protein Pput_1070                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1071 | 148546314 | inosine 5'-monophosphate dehydrogenase                               | 5.08  | 2.26 | 5.07  | 0.038 | 0.099 | 0.081 |
| Pput_1072 | 148546315 | GMP synthase                                                         | 4.13  | 0.74 | 2.78  | 0.031 | 0.032 | 0.044 |
| Pput_1073 | 148546316 | ADP-ribosyl-(dinitrogen reductase) hydrolase                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1074 | 148546317 | hypothetical protein Pput_1074                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1075 | 148546318 | multicopper oxidase, type 3                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1076 | 148546319 | CMP/dCMP deaminase, zinc-binding                                     | 0.5   | 0    | 0     | 0.004 | 0.000 | 0.000 |
| Pput_1077 | 148546320 | lytic transglycosylase, catalytic                                    | 0.14  | 0.14 | 0.67  | 0.001 | 0.006 | 0.011 |

|           |           |                                                                                |       |      |       |       |       |       |
|-----------|-----------|--------------------------------------------------------------------------------|-------|------|-------|-------|-------|-------|
| Pput_1078 | 148546321 | phosphoribosylformylglycinamide synthase                                       | 1.03  | 0.11 | 1.27  | 0.008 | 0.005 | 0.020 |
| Pput_1079 | 148546322 | hypothetical protein Pput_1079                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1080 | 148546323 | Sec-independent protein translocase, TatC subunit                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1081 | 148546324 | twin-arginine translocation protein, TatB subunit                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1082 | 148546325 | twin arginine-targeting protein translocase                                    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1083 | 148546326 | general secretion pathway protein K                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1084 | 148546327 | hypothetical protein Pput_1084                                                 | 0.16  | 0    | 0     | 0.001 | 0.000 | 0.000 |
| Pput_1085 | 148546328 | lipoprotein UxpA                                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1086 | 148546329 | hypothetical protein Pput_1086                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1087 | 148546330 | general secretion pathway protein D                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1088 | 148546331 | type II secretion system protein E                                             | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1089 | 148546332 | general secretion pathway protein F                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1090 | 148546333 | general secretion pathway protein G                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1091 | 148546334 | general secretion pathway protein H                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1092 | 148546335 | type II secretion system protein I/J                                           | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1093 | 148546336 | hypothetical protein Pput_1093                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1094 | 148546337 | general secretion pathway protein L                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1095 | 148546338 | hypothetical protein Pput_1095                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1096 | 148546339 | hypothetical protein Pput_1096                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1097 | 148546340 | FAD-binding 9, siderophore-interacting domain-containing protein               | 0     | 0.13 | 0.42  | 0.000 | 0.006 | 0.007 |
| Pput_1098 | 148546341 | PadR-like family transcriptional regulator                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1099 | 148546342 | membrane carboxypeptidase (penicillin-binding protein)-like protein            | 0.06  | 0    | 0.19  | 0.000 | 0.000 | 0.003 |
| Pput_1100 | 148546343 | amino acid permease-associated region                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1101 | 148546344 | glutamate synthase (NADPH)                                                     | 0.2   | 0    | 0.13  | 0.002 | 0.000 | 0.002 |
| Pput_1102 | 148546345 | DEAD/DEAH box helicase domain-containing protein                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1103 | 148546346 | NUDIX hydrolase                                                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1104 | 148546347 | LysR family transcriptional regulator                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1105 | 148546348 | alpha/beta hydrolase fold                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1106 | 148546349 | GlpM family protein                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1107 | 148546350 | two component, sigma54 specific, Fis family transcriptional regulator          | 0     | 0.25 | 0.24  | 0.000 | 0.011 | 0.004 |
| Pput_1108 | 148546351 | integral membrane sensor signal transduction histidine kinase                  | 0     | 0    | 0.15  | 0.000 | 0.000 | 0.002 |
| Pput_1109 | 148546352 | ABC transporter related                                                        | 3.36  | 1.2  | 5.42  | 0.025 | 0.053 | 0.087 |
| Pput_1110 | 148546353 | polar amino acid ABC transporter, inner membrane subunit                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1111 | 148546354 | polar amino acid ABC transporter, inner membrane subunit                       | 0.57  | 0    | 0.72  | 0.004 | 0.000 | 0.012 |
| Pput_1112 | 148546355 | extracellular solute-binding protein                                           | 214   | 0.9  | 22.29 | 1.621 | 0.039 | 0.356 |
| Pput_1113 | 148546356 | leucine-rich repeat-containing protein                                         | 0     | 0    | 0.04  | 0.000 | 0.000 | 0.001 |
| Pput_1114 | 148546357 | glycerol-3-phosphate dehydrogenase                                             | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1115 | 148546358 | DeoR family transcriptional regulator                                          | 0     | 0.26 | 0.38  | 0.000 | 0.011 | 0.006 |
| Pput_1116 | 148546359 | glycerol kinase                                                                | 0.14  | 0.21 | 1.06  | 0.001 | 0.009 | 0.017 |
| Pput_1117 | 148546360 | MIP family channel protein                                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1118 | 148546361 | ybaK/ebcS protein                                                              | 2.1   | 0.52 | 0.52  | 0.016 | 0.023 | 0.008 |
| Pput_1119 | 148546362 | ABC transporter related                                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1120 | 148546363 | ornithine carbamoyltransferase                                                 | 3.46  | 0    | 2.72  | 0.026 | 0.000 | 0.043 |
| Pput_1121 | 148546364 | molybdopterin dinucleotide-binding region                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1122 | 148546365 | glutaredoxin-like protein                                                      | 2.96  | 0    | 0.71  | 0.022 | 0.000 | 0.011 |
| Pput_1123 | 148546366 | bacterioferritin                                                               | 28.5  | 3.7  | 14.22 | 0.216 | 0.162 | 0.227 |
| Pput_1124 | 148546367 | BFD/(2Fe-2S)-binding domain-containing protein                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1125 | 148546368 | alkyl hydroperoxide reductase/ Thiol specific antioxidant/ Mal allergen        | 15.49 | 2.87 | 6.1   | 0.117 | 0.126 | 0.098 |
| Pput_1126 | 148546369 | ribonuclease T                                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1127 | 148546370 | dihydroorotase                                                                 | 1.36  | 0.45 | 1.94  | 0.010 | 0.020 | 0.031 |
| Pput_1128 | 148546371 | OmpA/MotB domain-containing protein                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1129 | 148546372 | argininosuccinate synthase                                                     | 3.74  | 0.37 | 0.91  | 0.028 | 0.016 | 0.015 |
| Pput_1130 | 148546373 | hypothetical protein Pput_1130                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1131 | 148546374 | two component LuxR family transcriptional regulator                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1132 | 148546375 | hypothetical protein Pput_1132                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1133 | 148546376 | endonuclease III                                                               | 0     | 0.2  | 0.2   | 0.000 | 0.009 | 0.003 |
| Pput_1134 | 148546377 | electron transport complex, RnfABCDGE type, G subunit                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1135 | 148546378 | electron transport complex, RnfABCDGE type, D subunit                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1136 | 148546379 | NADH:ubiquinone oxidoreductase subunit RnfA-like protein                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1137 | 148546380 | methionyl-tRNA synthetase                                                      | 0.73  | 0.1  | 0.58  | 0.006 | 0.004 | 0.009 |
| Pput_1138 | 148546381 | hypothetical protein Pput_1138                                                 | 0.55  | 0    | 0.42  | 0.004 | 0.000 | 0.007 |
| Pput_1139 | 148546382 | cold-shock DNA-binding domain-containing protein                               | 5.1   | 0    | 0     | 0.039 | 0.000 | 0.000 |
| Pput_1140 | 148546383 | deoxycytidine triphosphate deaminase                                           | 3.11  | 0    | 1.14  | 0.024 | 0.000 | 0.018 |
| Pput_1141 | 148546384 | hypothetical protein Pput_1141                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1142 | 148546385 | ICC-like protein putative phosphoesterase                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1143 | 148546386 | DEAD/DEAH box helicase domain-containing protein                               | 0     | 0.04 | 0     | 0.000 | 0.002 | 0.000 |
| Pput_1144 | 148546387 | succinylglutamate desuccinylase/aspartoacylase                                 | 0     | 0.19 | 0.19  | 0.000 | 0.008 | 0.003 |
| Pput_1145 | 148546388 | ATP-dependent DNA ligase                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1146 | 148546389 | exonuclease of the beta-lactamase fold involved in RNA processing-like protein | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1147 | 148546390 | penicillin amidase                                                             | 0.25  | 0.04 | 0.37  | 0.002 | 0.002 | 0.006 |
| Pput_1148 | 148546391 | GntR family transcriptional regulator                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1149 | 148546392 | Serine O-acetyltransferase                                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1150 | 148546393 | synthetase, putative                                                           | 0.67  | 0.27 | 0     | 0.005 | 0.012 | 0.000 |
| Pput_1151 | 148546394 | major facilitator transporter                                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1152 | 148546395 | pyridoxal-5'-phosphate-dependent enzyme, beta subunit                          | 0.72  | 0.38 | 0.49  | 0.005 | 0.017 | 0.008 |
| Pput_1153 | 148546396 | SecC motif-containing protein                                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1154 | 148546397 | water stress/hypersensitive response protein                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1155 | 148546398 | hypothetical protein Pput_1155                                                 | 1.31  | 0    | 0     | 0.010 | 0.000 | 0.000 |
| Pput_1156 | 148546399 | hypothetical protein Pput_1156                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1157 | 148546400 | OmpA/MotB domain-containing protein                                            | 5.9   | 5.64 | 23.89 | 0.045 | 0.247 | 0.382 |
| Pput_1158 | 148546401 | OmpA/MotB domain-containing protein                                            | 0.3   | 0.15 | 0     | 0.002 | 0.007 | 0.000 |
| Pput_1159 | 148546402 | hypothetical protein Pput_1159                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1160 | 148546403 | hypothetical protein Pput_1160                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1161 | 148546404 | ATP-dependent DNA helicase DinG                                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1162 | 148546405 | Beta-agarase                                                                   | 0     | 0    | 0.23  | 0.000 | 0.000 | 0.004 |
| Pput_1163 | 148546406 | beta-lactamase                                                                 | 0     | 0    | 0.25  | 0.000 | 0.000 | 0.004 |
| Pput_1164 | 148546407 | OmpA/MotB domain-containing protein                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1165 | 148546408 | pyridoxamine 5'-phosphate oxidase                                              | 1.05  | 0.33 | 1.08  | 0.008 | 0.014 | 0.017 |
| Pput_1166 | 148546409 | hypothetical protein Pput_1166                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |

|           |           |                                                                      |       |      |       |       |       |       |
|-----------|-----------|----------------------------------------------------------------------|-------|------|-------|-------|-------|-------|
| Pput_1167 | 148546410 | 17 kDa surface antigen                                               | 9.51  | 4.85 | 14.39 | 0.072 | 0.212 | 0.230 |
| Pput_1168 | 148546411 | Na <sup>+</sup> /H <sup>+</sup> antiporter NhaA                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1169 | 148546412 | FAD dependent oxidoreductase                                         | 0.13  | 0    | 0     | 0.001 | 0.000 | 0.000 |
| Pput_1170 | 148546413 | membrane protein-like protein                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1171 | 148546414 | ABC transporter related                                              | 0.89  | 1    | 4.19  | 0.007 | 0.044 | 0.067 |
| Pput_1172 | 148546415 | leucine/isoleucine/valine transporter ATP-binding subunit            | 0.65  | 0.65 | 5.12  | 0.005 | 0.028 | 0.082 |
| Pput_1173 | 148546416 | leucine/isoleucine/valine transporter permease subunit               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1174 | 148546417 | inner-membrane translocator                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1175 | 148546418 | extracellular ligand-binding receptor                                | 6.36  | 0.09 | 6.99  | 0.048 | 0.004 | 0.112 |
| Pput_1176 | 148546419 | hypothetical protein Pput_1176                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1177 | 148546420 | 3-hydroxyisobutyrate dehydrogenase                                   | 0.77  | 0.12 | 0.77  | 0.006 | 0.005 | 0.012 |
| Pput_1178 | 148546421 | diguanylate cyclase/phosphodiesterase                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1179 | 148546422 | ATP-dependent helicase HepA                                          | 0.39  | 0.31 | 0.98  | 0.003 | 0.014 | 0.016 |
| Pput_1180 | 148546423 | hypothetical protein Pput_1180                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1181 | 148546424 | hypothetical protein Pput_1181                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1182 | 148546425 | hypothetical protein Pput_1182                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1183 | 148546426 | hypothetical protein Pput_1183                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1184 | 148546427 | fusaric acid resistance protein region                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1185 | 148546428 | hypothetical protein Pput_1185                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1186 | 148546429 | secretion protein HlyD family protein                                | 0.24  | 0    | 0     | 0.002 | 0.000 | 0.000 |
| Pput_1187 | 148546430 | hypothetical protein Pput_1187                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1188 | 148546431 | diguanylate cyclase/phosphodiesterase with PAS/PAC and GAF sensor(s) | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1189 | 148546432 | diguanylate cyclase                                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1190 | 148546433 | formate/nitrate transporter                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1191 | 148546434 | acetolactate synthase                                                | 1.99  | 0.35 | 1.69  | 0.015 | 0.015 | 0.027 |
| Pput_1192 | 148546435 | Nitrilase/cyanide hydratase and apolipoprotein N-acyltransferase     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1193 | 148546436 | hypothetical protein Pput_1193                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1194 | 148546437 | asparaginase/glutaminase                                             | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1195 | 148546438 | yecA family protein                                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1196 | 148546439 | glutathione S-transferase domain-containing protein                  | 0.54  | 0.37 | 1.64  | 0.004 | 0.016 | 0.026 |
| Pput_1197 | 148546440 | pyridoxamine 5'-phosphate oxidase-related, FMN-binding               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1198 | 148546441 | LysR family transcriptional regulator                                | 0.39  | 0    | 1.1   | 0.003 | 0.000 | 0.018 |
| Pput_1199 | 148546442 | aldose 1-epimerase                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1200 | 148546443 | hypothetical protein Pput_1200                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1201 | 148546444 | TRAP dicarboxylate transporter, DctM subunit                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1202 | 148546445 | tripartite ATP-independent periplasmic transporter DctQ              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1203 | 148546446 | TRAP dicarboxylate transporter, DctP subunit                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1204 | 148546447 | SMP-30/gluconolactonase/LRE domain-containing protein                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1205 | 148546448 | NAD-dependent epimerase/dehydratase                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1206 | 148546449 | outer membrane porin                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1207 | 148546450 | bifunctional antitoxin/transcriptional repressor RelB                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1208 | 148546451 | plasmid stabilization system protein                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1209 | 148546452 | ribonucleotide-diphosphate reductase subunit beta                    | 0.58  | 0.16 | 0.52  | 0.004 | 0.007 | 0.008 |
| Pput_1210 | 148546453 | ribonucleotide-diphosphate reductase subunit alpha                   | 1.13  | 0.11 | 0.4   | 0.009 | 0.005 | 0.006 |
| Pput_1211 | 148546454 | two component transcriptional regulator                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1212 | 148546455 | integral membrane sensor signal transduction histidine kinase        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1213 | 148546456 | 4'-phosphopantetheinyl transferase                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1214 | 148546457 | dienelactone hydrolase                                               | 0.77  | 0    | 0.45  | 0.006 | 0.000 | 0.007 |
| Pput_1215 | 148546458 | outer membrane protein H1                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1216 | 148546459 | two component transcriptional regulator                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1217 | 148546460 | integral membrane sensor signal transduction histidine kinase        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1218 | 148546461 | C4-dicarboxylate transporter DctA                                    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1219 | 148546462 | hypothetical protein Pput_1219                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1220 | 148546463 | hypothetical protein Pput_1220                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1221 | 148546464 | hypothetical protein Pput_1221                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1222 | 148546465 | RNA-binding S4 domain-containing protein                             | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1223 | 148546466 | GCN5-related N-acetyltransferase                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1224 | 148546467 | hypothetical protein Pput_1224                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1225 | 148546468 | hypothetical protein Pput_1225                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1226 | 148546469 | hypothetical protein Pput_1226                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1227 | 148546470 | hypothetical protein Pput_1227                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1228 | 148546471 | MiaB-like tRNA modifying enzyme YliG                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1229 | 148546472 | K <sup>+</sup> potassium transporter                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1230 | 148546473 | virulence factor family protein                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1231 | 148546474 | hypothetical protein Pput_1231                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1232 | 148546475 | DNA polymerase IV                                                    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1233 | 148546476 | hypothetical protein Pput_1233                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1234 | 148546477 | prolyl-tRNA synthetase                                               | 1.39  | 0.33 | 1.12  | 0.011 | 0.014 | 0.018 |
| Pput_1235 | 148546478 | outer membrane porin                                                 | 1.6   | 5.02 | 24.65 | 0.012 | 0.220 | 0.394 |
| Pput_1236 | 148546479 | histidine triad (HIT) protein                                        | 1.42  | 0    | 0     | 0.011 | 0.000 | 0.000 |
| Pput_1237 | 148546480 | hypothetical protein Pput_1237                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1238 | 148546481 | cold-shock DNA-binding domain-containing protein                     | 0.39  | 0.39 | 0.82  | 0.003 | 0.017 | 0.013 |
| Pput_1239 | 148546482 | Ferritin, Dps family protein                                         | 13.3  | 1.2  | 6.51  | 0.101 | 0.053 | 0.104 |
| Pput_1240 | 148546483 | hypothetical protein Pput_1240                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1241 | 148546484 | FmdB family regulatory protein                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1242 | 148546485 | aspartyl-tRNA synthetase                                             | 5.56  | 0.63 | 4.82  | 0.042 | 0.028 | 0.077 |
| Pput_1243 | 148546486 | hypothetical protein Pput_1243                                       | 0.63  | 0    | 0     | 0.005 | 0.000 | 0.000 |
| Pput_1244 | 148546487 | Holliday junction resolvase                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1245 | 148546488 | Holliday junction DNA helicase RuvA                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1246 | 148546489 | Holliday junction DNA helicase RuvB                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1247 | 148546490 | Pol-Pal system-associated acyl-CoA thioesterase                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1248 | 148546491 | Tol-Pal system, TolQ                                                 | 3.84  | 1.67 | 5.25  | 0.029 | 0.073 | 0.084 |
| Pput_1249 | 148546492 | biopolymer transport, TolR                                           | 0.78  | 0    | 0     | 0.006 | 0.000 | 0.000 |
| Pput_1250 | 148546493 | Tol-Pal system, TolA                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1251 | 148546494 | translocation protein TolB                                           | 1.65  | 0.17 | 2.05  | 0.012 | 0.007 | 0.033 |
| Pput_1252 | 148546495 | peptidoglycan-associated lipoprotein                                 | 31.65 | 3.79 | 27.43 | 0.240 | 0.166 | 0.438 |
| Pput_1253 | 148546496 | Tol-Pal system, YbgF                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1254 | 148546497 | radical SAM domain-containing protein                                | 0     | 0    | 0.34  | 0.000 | 0.000 | 0.005 |
| Pput_1255 | 148546498 | exsB protein                                                         | 0.34  | 0.79 | 2.69  | 0.003 | 0.035 | 0.043 |

|           |           |                                                                         |       |      |      |       |       |       |
|-----------|-----------|-------------------------------------------------------------------------|-------|------|------|-------|-------|-------|
| Pput_1256 | 148546499 | cation efflux protein                                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1257 | 148546500 | methyl-accepting chemotaxis sensory transducer                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1258 | 148546501 | amino acid permease-associated region                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1259 | 148546502 | hypothetical protein Pput_1259                                          | 0.21  | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_1260 | 148546503 | quinolinate synthetase                                                  | 0.2   | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_1261 | 148546504 | transposase, IS111A/IS1328/IS1533                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1262 | 148546505 | peptidase M48, Ste24p                                                   | 0.21  | 0    | 0.28 | 0.002 | 0.000 | 0.004 |
| Pput_1263 | 148546506 | SirA family protein                                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1264 | 148546507 | hypothetical protein Pput_1264                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1265 | 148546508 | alkyl hydroperoxide reductase/ Thiol specific antioxidant/ Mal allergen | 2.61  | 0    | 0    | 0.020 | 0.000 | 0.000 |
| Pput_1266 | 148546509 | glycine cleavage system regulatory protein-like protein                 | 1.08  | 0    | 0    | 0.008 | 0.000 | 0.000 |
| Pput_1267 | 148546510 | dihydrodipicolinate synthase                                            | 3.03  | 0    | 1.52 | 0.023 | 0.000 | 0.024 |
| Pput_1268 | 148546511 | hypothetical protein Pput_1268                                          | 3.85  | 1.02 | 4.18 | 0.029 | 0.045 | 0.067 |
| Pput_1269 | 148546512 | beta-lactamase domain-containing protein                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1270 | 148546513 | phosphoribosylaminoimidazole-succinocarboxamide synthase                | 9.9   | 0.93 | 5.22 | 0.075 | 0.041 | 0.083 |
| Pput_1271 | 148546514 | putative transcriptional regulator                                      | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1272 | 148546515 | hypothetical protein Pput_1272                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1273 | 148546516 | hypothetical protein Pput_1273                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1274 | 148546517 | SH3 type 3 domain-containing protein                                    | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1275 | 148546518 | hypothetical protein Pput_1275                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1276 | 148546519 | hypothetical protein Pput_1276                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1277 | 148546520 | lysine exporter protein LysE/YggA                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1278 | 148546521 | hypothetical protein Pput_1278                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1279 | 148546522 | malate:quinone oxidoreductase                                           | 0.19  | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_1280 | 148546523 | ArsR family transcriptional regulator                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1281 | 148546524 | NADH:flavin oxidoreductase/NADH oxidase                                 | 0     | 0.87 | 0    | 0.000 | 0.038 | 0.000 |
| Pput_1282 | 148546525 | FAD dependent oxidoreductase                                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1283 | 148546526 | aldehyde dehydrogenase                                                  | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1284 | 148546527 | dihydrodipicolinate synthetase                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1285 | 148546528 | proline racemase                                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1286 | 148546529 | amino acid permease-associated region                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1287 | 148546530 | AraC family transcriptional regulator                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1288 | 148546531 | LysR family transcriptional regulator                                   | 0     | 0    | 0.46 | 0.000 | 0.000 | 0.007 |
| Pput_1289 | 148546532 | molybdenum cofactor biosynthesis protein B                              | 2.3   | 0    | 0    | 0.017 | 0.000 | 0.000 |
| Pput_1290 | 148546533 | hypothetical protein Pput_1290                                          | 0.22  | 0    | 0.56 | 0.002 | 0.000 | 0.009 |
| Pput_1291 | 148546534 | molybdenum cofactor biosynthesis protein A                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1292 | 148546535 | oxidoreductase alpha (molybdopterin) subunit                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1293 | 148546536 | AsnC family transcriptional regulator                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1294 | 148546537 | cystathionine gamma-lyase                                               | 0.18  | 0.29 | 0.27 | 0.001 | 0.013 | 0.004 |
| Pput_1295 | 148546538 | hypothetical protein Pput_1295                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1296 | 148546539 | hypothetical protein Pput_1296                                          | 0     | 0    | 0.18 | 0.000 | 0.000 | 0.003 |
| Pput_1297 | 148546540 | ribonuclease D                                                          | 1.04  | 1.17 | 1.76 | 0.008 | 0.051 | 0.028 |
| Pput_1298 | 148546541 | hypothetical protein Pput_1298                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1299 | 148546542 | D-isomer specific 2-hydroxyacid dehydrogenase, NAD-binding              | 0     | 0    | 0.37 | 0.000 | 0.000 | 0.006 |
| Pput_1300 | 148546543 | nitroreductase                                                          | 0.79  | 1.23 | 0.34 | 0.006 | 0.054 | 0.005 |
| Pput_1301 | 148546544 | hypothetical protein Pput_1301                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1302 | 148546545 | hypothetical protein Pput_1302                                          | 0     | 0    | 0.17 | 0.000 | 0.000 | 0.003 |
| Pput_1304 | 148546546 | tRNA/rRNA methyltransferase (SpoU)                                      | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1305 | 148546547 | hypothetical protein Pput_1305                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1306 | 148546548 | oligopeptidase B                                                        | 0.2   | 0    | 0.35 | 0.002 | 0.000 | 0.006 |
| Pput_1307 | 148546549 | hypothetical protein Pput_1307                                          | 0     | 0    | 0.46 | 0.000 | 0.000 | 0.007 |
| Pput_1308 | 148546550 | glutamine amidotransferase, class-II                                    | 0.28  | 0    | 0.93 | 0.002 | 0.000 | 0.015 |
| Pput_1309 | 148546551 | hypothetical protein Pput_1309                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1310 | 148546552 | LysR family transcriptional regulator                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1311 | 148546553 | major facilitator transporter                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1312 | 148546554 | LamB/YcsF family protein                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1313 | 148546555 | allophanate hydrolase subunit 1                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1314 | 148546556 | urea amidolyase related protein                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1315 | 148546557 | hypothetical protein Pput_1315                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1316 | 148546558 | ATPase                                                                  | 3.2   | 0.95 | 2.37 | 0.024 | 0.042 | 0.038 |
| Pput_1317 | 148546559 | hypothetical protein Pput_1317                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1318 | 148546560 | cysteine synthase A                                                     | 14.55 | 1.06 | 7.63 | 0.110 | 0.046 | 0.122 |
| Pput_1319 | 148546561 | aspartyl/asparaginyl beta-hydroxylase                                   | 0.32  | 0.22 | 0.32 | 0.002 | 0.010 | 0.005 |
| Pput_1320 | 148546562 | hypothetical protein Pput_1320                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1321 | 148546563 | hypothetical protein Pput_1321                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1322 | 148546564 | hypothetical protein Pput_1322                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1323 | 148546565 | hypothetical protein Pput_1323                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1324 | 148546566 | bifunctional isocitrate dehydrogenase kinase/phosphatase protein        | 0.12  | 0.12 | 0.3  | 0.001 | 0.005 | 0.005 |
| Pput_1325 | 148546567 | hypothetical protein Pput_1325                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1326 | 148546568 | RNA-binding S1 domain-containing protein                                | 0.26  | 0.12 | 0.48 | 0.002 | 0.005 | 0.008 |
| Pput_1327 | 148546569 | hypothetical protein Pput_1327                                          | 0.62  | 0    | 0    | 0.005 | 0.000 | 0.000 |
| Pput_1328 | 148546570 | CsbD family protein                                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1329 | 148546571 | putative ribonuclease BN                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1330 | 148546572 | peptide deformylase                                                     | 0     | 0.42 | 0    | 0.000 | 0.018 | 0.000 |
| Pput_1331 | 148546573 | GCN5-related N-acetyltransferase                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1332 | 148546574 | hypothetical protein Pput_1332                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1333 | 148546575 | hypothetical protein Pput_1333                                          | 4.05  | 0    | 0    | 0.031 | 0.000 | 0.000 |
| Pput_1334 | 148546576 | DGPFAETKE family protein                                                | 1.46  | 0    | 0    | 0.011 | 0.000 | 0.000 |
| Pput_1335 | 148546577 | activator of Hsp90 ATPase 1 family protein                              | 2.1   | 0    | 0.76 | 0.016 | 0.000 | 0.012 |
| Pput_1336 | 148546578 | RNA polymerase ECF-subfamily sigma factor                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1337 | 148546579 | dehydratase                                                             | 1.75  | 0    | 0    | 0.013 | 0.000 | 0.000 |
| Pput_1338 | 148546580 | alpha/beta hydrolase fold                                               | 0     | 0    | 0.45 | 0.000 | 0.000 | 0.007 |
| Pput_1339 | 148546581 | acyl-CoA synthetase                                                     | 0.12  | 0    | 0.31 | 0.001 | 0.000 | 0.005 |
| Pput_1340 | 148546582 | acyl-CoA synthetase                                                     | 0.62  | 0.19 | 0.8  | 0.005 | 0.008 | 0.013 |
| Pput_1341 | 148546583 | FAD dependent oxidoreductase                                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1342 | 148546584 | glutamate--putrescine ligase                                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1343 | 148546585 | hypothetical protein Pput_1343                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1344 | 148546586 | ATP-dependent helicase HrpA                                             | 0.14  | 0.02 | 0.3  | 0.001 | 0.001 | 0.005 |
| Pput_1345 | 148546587 | 3-oxoacyl-(acyl carrier protein) synthase III                           | 1.31  | 0.29 | 1.53 | 0.010 | 0.013 | 0.024 |



|           |           |                                                                                               |       |      |      |       |       |       |
|-----------|-----------|-----------------------------------------------------------------------------------------------|-------|------|------|-------|-------|-------|
| Pput_1346 | 148546588 | hypothetical protein Pput_1346                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1347 | 148546589 | hypothetical protein Pput_1347                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1348 | 148546590 | ABC transporter related                                                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1349 | 148546591 | peptidyl-prolyl cis-trans isomerase, cyclophilin type                                         | 0.42  | 0    | 0    | 0.003 | 0.000 | 0.000 |
| Pput_1350 | 148546592 | alpha/beta hydrolase fold                                                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1351 | 148546593 | LysR family transcriptional regulator                                                         | 0.92  | 0.69 | 1.57 | 0.007 | 0.030 | 0.025 |
| Pput_1352 | 148546594 | hypothetical protein Pput_1352                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1353 | 148546595 | NAD(P)H dehydrogenase (quinone)                                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1354 | 148546596 | carboxylate/amino acid/amine transporter                                                      | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1356 | 148546597 | transposase, IS4 family protein                                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1358 | 148546598 | cupin 2 domain-containing protein                                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1359 | 148546599 | 6-phosphogluconate dehydrogenase, NAD-binding                                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1360 | 148546600 | hypothetical protein Pput_1360                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1361 | 148546601 | hypothetical protein Pput_1361                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1362 | 148546602 | LmbE family protein                                                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1363 | 148546603 | outer membrane porin                                                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1364 | 148546604 | sodium:dicarboxylate symporter                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1365 | 148546605 | amidohydrolase 2                                                                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1366 | 148546606 | LysR family transcriptional regulator                                                         | 0     | 0    | 0.51 | 0.000 | 0.000 | 0.008 |
| Pput_1367 | 148546607 | hypothetical protein Pput_1367                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1368 | 148546608 | D-isomer specific 2-hydroxyacid dehydrogenase, NAD-binding                                    | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1369 | 148546609 | major facilitator transporter                                                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1370 | 148546610 | transcriptional regulator IclR-like protein                                                   | 0.14  | 0    | 0.14 | 0.001 | 0.000 | 0.002 |
| Pput_1371 | 148546611 | hypothetical protein Pput_1371                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1372 | 148546612 | hypothetical protein Pput_1372                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1373 | 148546613 | transposase IS3/IS911 family protein                                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1374 | 148546614 | transposase, mutator type                                                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1375 | 148546615 | hypothetical protein Pput_1375                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1376 | 148546616 | hypothetical protein Pput_1376                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1377 | 148546617 | MscS mechanosensitive ion channel                                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1378 | 148546618 | DEAD/DEAH box helicase domain-containing protein                                              | 1.04  | 0.24 | 1.7  | 0.008 | 0.011 | 0.027 |
| Pput_1379 | 148546619 | hypothetical protein Pput_1379                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1380 | 148546620 | hypothetical protein Pput_1380                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1381 | 148546621 | hypothetical protein Pput_1381                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1382 | 148546622 | hypothetical protein Pput_1382                                                                | 1.82  | 0    | 0    | 0.014 | 0.000 | 0.000 |
| Pput_1383 | 148546623 | hypothetical protein Pput_1383                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1384 | 148546624 | hypothetical protein Pput_1384                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1385 | 148546625 | LysR family transcriptional regulator                                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1386 | 148546626 | hypothetical protein Pput_1386                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1387 | 148546627 | Na <sup>+</sup> /solute symporter                                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1388 | 148546628 | putative agmatinase                                                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1389 | 148546629 | LysR family transcriptional regulator                                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1390 | 148546630 | methyl-accepting chemotaxis sensory transducer                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1391 | 148546631 | DTW domain-containing protein                                                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1392 | 148546632 | TolC family type I secretion outer membrane protein                                           | 0.24  | 0.24 | 0.75 | 0.002 | 0.011 | 0.012 |
| Pput_1393 | 148546633 | hypothetical protein Pput_1393                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1394 | 148546634 | yecA family protein                                                                           | 0.55  | 0    | 0    | 0.004 | 0.000 | 0.000 |
| Pput_1395 | 148546635 | ATP-dependent DNA helicase RecQ                                                               | 0     | 0    | 0.14 | 0.000 | 0.000 | 0.002 |
| Pput_1396 | 148546636 | MarR family transcriptional regulator                                                         | 5.25  | 0.52 | 2.2  | 0.040 | 0.023 | 0.035 |
| Pput_1397 | 148546637 | patatin                                                                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1398 | 148546638 | hypothetical protein Pput_1398                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1399 | 148546639 | hypothetical protein Pput_1399                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1400 | 148546640 | helix-turn-helix domain-containing protein                                                    | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1401 | 148546641 | metallophosphoesterase                                                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1402 | 148546642 | hypothetical protein Pput_1402                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1403 | 148546643 | helix-turn-helix domain-containing protein                                                    | 0.2   | 0.2  | 0.4  | 0.002 | 0.009 | 0.006 |
| Pput_1404 | 148546644 | TrkH family potassium uptake protein                                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1405 | 148546645 | nitroreductase                                                                                | 10.54 | 2.43 | 3.85 | 0.080 | 0.106 | 0.062 |
| Pput_1406 | 148546646 | integral membrane sensor signal transduction histidine kinase                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1407 | 148546647 | protein of unknown function, Spy-related                                                      | 1.42  | 4.85 | 0    | 0.011 | 0.212 | 0.000 |
| Pput_1408 | 148546648 | two component transcriptional regulator                                                       | 0.33  | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_1409 | 148546649 | hypothetical protein Pput_1409                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1410 | 148546650 | YciI-like protein                                                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1411 | 148546651 | intracellular septation protein A                                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1412 | 148546652 | phosphotransferase domain-containing protein                                                  | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1413 | 148546653 | Sua5/YciO/YrdC/YwIC family protein                                                            | 0.33  | 0    | 0.3  | 0.002 | 0.000 | 0.005 |
| Pput_1414 | 148546654 | chromosome segregation and condensation protein ScpA                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1415 | 148546655 | putative transcriptional regulator                                                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1416 | 148546656 | RNA-binding S4 domain-containing protein                                                      | 0     | 0    | 0.38 | 0.000 | 0.000 | 0.006 |
| Pput_1417 | 148546657 | amino acid permease-associated region                                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1418 | 148546658 | LysR family transcriptional regulator                                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1419 | 148546659 | FAD linked oxidase domain-containing protein                                                  | 0.13  | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_1420 | 148546660 | major facilitator superfamily transporter                                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1421 | 148546661 | hypothetical protein Pput_1421                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1422 | 148546662 | hypothetical protein Pput_1422                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1423 | 148546663 | pterin-4-alpha-carbinolamine dehydratase                                                      | 10.23 | 0    | 0.66 | 0.077 | 0.000 | 0.011 |
| Pput_1424 | 148546664 | phenylalanine 4-monooxygenase                                                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1425 | 148546665 | transcriptional regulator, TyrR                                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1426 | 148546666 | transposase, IS111A/IS1328/IS1533                                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1427 | 148546667 | hypothetical protein Pput_1427                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1428 | 229328219 | acetyl-CoA synthetase                                                                         | 3.63  | 0.65 | 1.76 | 0.027 | 0.028 | 0.028 |
| Pput_1429 | 148546669 | cationic amino acid ABC transporter, periplasmic binding protein                              | 2.74  | 0    | 1.44 | 0.021 | 0.000 | 0.023 |
| Pput_1430 | 148546670 | polar amino acid ABC transporter, inner membrane subunit                                      | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1431 | 148546671 | polar amino acid ABC transporter, inner membrane subunit                                      | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1432 | 148546672 | ABC transporter related                                                                       | 0.59  | 0    | 1.12 | 0.004 | 0.000 | 0.018 |
| Pput_1433 | 148546673 | helix-turn-helix domain-containing protein                                                    | 0.2   | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_1434 | 148546674 | bifunctional N-succinylidiaminopimelate-aminotransferase/acetylornithine transaminase protein | 0.57  | 0    | 0.67 | 0.004 | 0.000 | 0.011 |
| Pput_1435 | 148546675 | arginine N-succinyltransferase                                                                | 0.2   | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_1436 | 148546676 | arginine N-succinyltransferase                                                                | 1.13  | 0.33 | 0.91 | 0.009 | 0.014 | 0.015 |

|           |           |                                                                         |      |      |      |       |       |       |
|-----------|-----------|-------------------------------------------------------------------------|------|------|------|-------|-------|-------|
| Pput_1437 | 148546677 | succinylglutamic semialdehyde dehydrogenase                             | 0.3  | 0    | 0.38 | 0.002 | 0.000 | 0.006 |
| Pput_1438 | 148546678 | succinylarginine dihydrolase                                            | 0.89 | 0.25 | 0.58 | 0.007 | 0.011 | 0.009 |
| Pput_1439 | 148546679 | hypothetical protein Pput_1439                                          | 1.93 | 0    | 0    | 0.015 | 0.000 | 0.000 |
| Pput_1440 | 148546680 | succinylglutamate desuccinylase                                         | 2.59 | 0.33 | 1.42 | 0.020 | 0.014 | 0.023 |
| Pput_1441 | 148546681 | alanyl-tRNA synthetase                                                  | 2.24 | 0.3  | 1.19 | 0.017 | 0.013 | 0.019 |
| Pput_1442 | 148546682 | aspartate kinase                                                        | 9.35 | 0.75 | 4.25 | 0.071 | 0.033 | 0.068 |
| Pput_1443 | 148546683 | carbon storage regulator                                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1444 | 148546684 | magnesium transporter                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1445 | 148546685 | Arc domain-containing protein                                           | 0    | 0.77 | 1.1  | 0.000 | 0.034 | 0.018 |
| Pput_1446 | 148546686 | phosphonate metabolism protein/1,5-bisphosphokinase (PRPP-forming) PhnN | 0.39 | 0    | 0.57 | 0.003 | 0.000 | 0.009 |
| Pput_1447 | 148546687 | amino acid permease-associated region                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1448 | 148546688 | hypothetical protein Pput_1448                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1449 | 148546689 | diguanylate cyclase with PAS/PAC sensor                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1450 | 148546690 | dihydrolipoamide dehydrogenase                                          | 0.16 | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_1451 | 148546691 | branched-chain alpha-keto acid dehydrogenase subunit E2                 | 0.77 | 0.17 | 1.09 | 0.006 | 0.007 | 0.017 |
| Pput_1452 | 148546692 | transketolase, central region                                           | 0.4  | 0    | 0.6  | 0.003 | 0.000 | 0.010 |
| Pput_1453 | 148546693 | 3-methyl-2-oxobutanoate dehydrogenase (2-methylpropanoyl-transferring)  | 0.52 | 0    | 0    | 0.004 | 0.000 | 0.000 |
| Pput_1454 | 148546694 | AsnC family transcriptional regulator                                   | 0.88 | 0    | 0.63 | 0.007 | 0.000 | 0.010 |
| Pput_1455 | 148546695 | glutamate--putrescine ligase                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1456 | 148546696 | major facilitator transporter                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1457 | 148546697 | type IV pilus assembly PilZ                                             | 1.09 | 0.45 | 0.77 | 0.008 | 0.020 | 0.012 |
| Pput_1458 | 148546698 | FlgN family protein                                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1459 | 148546699 | anti-sigma-28 factor, FlgM                                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1460 | 148546700 | flagellar basal body P-ring biosynthesis protein FlgA                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1461 | 148546701 | putative CheW protein                                                   | 0.36 | 0.11 | 1.15 | 0.003 | 0.005 | 0.018 |
| Pput_1462 | 148546702 | protein-glutamate O-methyltransferase                                   | 0    | 0    | 0.24 | 0.000 | 0.000 | 0.004 |
| Pput_1464 | 148546703 | flagellar basal body rod protein FlgB                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1465 | 148546704 | flagellar basal body rod protein FlgC                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1466 | 148546705 | flagellar basal body rod modification protein                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1467 | 148546706 | flagellar basal body FlaE domain-containing protein                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1468 | 148546707 | hypothetical protein Pput_1468                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1469 | 148546708 | flagellar basal body rod protein FlgF                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1470 | 148546709 | flagellar basal body rod protein FlgG                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1471 | 148546710 | flagellar basal body L-ring protein                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1472 | 148546711 | flagellar basal body P-ring protein                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1473 | 148546712 | flagellar rod assembly protein/muramidase FlgJ                          | 0.18 | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_1474 | 148546713 | flagellar hook-associated protein FlgK                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1475 | 148546714 | flagellar hook-associated protein FlgL                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1476 | 148546715 | glycosyl transferase family protein                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1477 | 148546716 | hypothetical protein Pput_1477                                          | 0.2  | 0    | 0.08 | 0.002 | 0.000 | 0.001 |
| Pput_1478 | 148546717 | hypothetical protein Pput_1478                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1479 | 148546718 | glucose-1-phosphate cytidyltransferase                                  | 0.26 | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_1480 | 148546719 | CDP-glucose 4,6-dehydratase                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1481 | 148546720 | DegT/DnrJ/EryC1/StrS aminotransferase                                   | 0.16 | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_1482 | 148546721 | glycosyl transferase family protein                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1483 | 148546722 | N-acetylneuraminic acid synthase domain-containing protein              | 0.18 | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_1484 | 148546723 | thiamine pyrophosphate binding domain-containing protein                | 0.18 | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_1485 | 148546724 | FkbM family methyltransferase                                           | 0    | 0.29 | 0    | 0.000 | 0.013 | 0.000 |
| Pput_1486 | 148546725 | NAD-dependent epimerase/dehydratase                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1487 | 148546726 | hypothetical protein Pput_1487                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1488 | 148546727 | Beta-ketoacyl-acyl-carrier-protein synthase I                           | 0.24 | 0.38 | 0.35 | 0.002 | 0.017 | 0.006 |
| Pput_1489 | 148546728 | flagellin                                                               | 2    | 0    | 0    | 0.015 | 0.000 | 0.000 |
| Pput_1490 | 148546729 | flagellar protein FlaG protein                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1491 | 148546730 | flagellar hook-associated 2 domain-containing protein                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1492 | 148546731 | flagellar protein FlhS                                                  | 0.56 | 0    | 0    | 0.004 | 0.000 | 0.000 |
| Pput_1493 | 148546732 | hypothetical protein Pput_1493                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1494 | 148546733 | sigma-54 dependent transcriptional regulator                            | 0.85 | 0.47 | 1.4  | 0.006 | 0.021 | 0.022 |
| Pput_1495 | 148546734 | PAS/PAC sensor signal transduction histidine kinase                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1496 | 148546735 | two component, sigma54 specific, Fis family transcriptional regulator   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1497 | 148546736 | flagellar hook-basal body protein FlhE                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1498 | 148546737 | flagellar MS-ring protein                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1499 | 148546738 | flagellar motor switch protein G                                        | 0.4  | 0    | 0    | 0.003 | 0.000 | 0.000 |
| Pput_1500 | 148546739 | flagellar assembly protein H                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1501 | 148546740 | flagellum-specific ATP synthase                                         | 0.16 | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_1502 | 148546741 | flagellar biosynthesis chaperone                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1503 | 148546742 | anti-sigma-factor antagonist                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1504 | 148546743 | response regulator receiver protein                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1505 | 148546744 | Hpt protein                                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1506 | 148546745 | flagellar hook-length control protein                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1507 | 148546746 | flagellar basal body-associated protein FlhL                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1508 | 148546747 | flagellar motor switch protein FlhM                                     | 0.2  | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_1509 | 148546748 | flagellar motor switch protein                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1510 | 148546749 | flagellar biosynthesis protein, FlhO                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1511 | 148546750 | flagellar biosynthesis protein FlhP                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1512 | 148546751 | flagellar biosynthesis protein FlhQ                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1513 | 148546752 | flagellar biosynthesis protein FlhR                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1514 | 148546753 | flagellar biosynthesis protein FlhB                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1515 | 148546754 | flagellar biosynthesis pathway component FlhA-like protein              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1516 | 148546755 | D-alanine--D-alanine ligase                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1517 | 148546756 | aminotransferase, class V                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1518 | 148546757 | hypothetical protein Pput_1518                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1519 | 148546758 | Cys/Met metabolism pyridoxal-phosphate-dependent enzyme                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1520 | 148546759 | hypothetical protein Pput_1520                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1521 | 148546760 | D-alanine--D-alanine ligase                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1522 | 148546761 | GntR family transcriptional regulator                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1523 | 148546762 | flagellar biosynthesis protein FlhA                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1524 | 148546763 | flagellar biosynthesis regulator FlhF                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1525 | 148546764 | cobyrinic acid a,c-diamide synthase                                     | 0.56 | 0.61 | 2.48 | 0.004 | 0.027 | 0.040 |
| Pput_1526 | 148546765 | flagellar biosynthesis sigma factor                                     | 0.28 | 0    | 0.42 | 0.002 | 0.000 | 0.007 |

|           |           |                                                              |      |      |      |       |       |       |
|-----------|-----------|--------------------------------------------------------------|------|------|------|-------|-------|-------|
| Pput_1527 | 148546766 | response regulator receiver protein                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1528 | 148546767 | chemotaxis phosphatase, CheZ                                 | 0.62 | 0    | 0    | 0.005 | 0.000 | 0.000 |
| Pput_1529 | 148546768 | CheA signal transduction histidine kinase                    | 0.1  | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_1530 | 148546769 | chemotaxis-specific methylesterase                           | 0.2  | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_1531 | 148546770 | flagellar motor protein                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1532 | 148546771 | flagellar motor protein MotD                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1533 | 148546772 | cobyrinic acid a,c-diamide synthase                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1534 | 148546773 | putative CheW protein                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1535 | 148546774 | putative CheW protein                                        | 3.51 | 0.48 | 2.4  | 0.027 | 0.021 | 0.038 |
| Pput_1536 | 148546775 | hypothetical protein Pput_1536                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1537 | 148546776 | hypothetical protein Pput_1537                               | 0.08 | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_1538 | 148546777 | flagellar protein FliB-like protein                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1539 | 148546778 | hypothetical protein Pput_1539                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1540 | 148546779 | cytochrome c biogenesis protein CcmA                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1541 | 148546780 | heme exporter protein CcmB                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1542 | 148546781 | heme exporter protein CcmC                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1543 | 148546782 | Heme exporter protein D (CcmD)                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1544 | 148546783 | cytochrome c-type biogenesis protein CcmE                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1545 | 148546784 | cytochrome c-type biogenesis protein CcmF                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1546 | 148546785 | periplasmic protein thiol--disulphide oxidoreductase DsbE    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1547 | 148546786 | cytochrome C biogenesis protein                              | 0.47 | 0    | 0    | 0.004 | 0.000 | 0.000 |
| Pput_1548 | 148546787 | TPR repeat-containing protein                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1549 | 148546788 | hypothetical protein Pput_1549                               | 0.52 | 0.58 | 0    | 0.004 | 0.025 | 0.000 |
| Pput_1550 | 148546789 | hypothetical protein Pput_1550                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1551 | 148546790 | D-isomer specific 2-hydroxyacid dehydrogenase, NAD-binding   | 0.83 | 0    | 0    | 0.006 | 0.000 | 0.000 |
| Pput_1552 | 148546791 | PhzF family phenazine biosynthesis protein                   | 1.39 | 0    | 0    | 0.011 | 0.000 | 0.000 |
| Pput_1553 | 148546792 | glutathione-dependent formaldehyde-activating, GFA           | 0    | 0    | 0.81 | 0.000 | 0.000 | 0.013 |
| Pput_1554 | 148546793 | peptidylprolyl isomerase, FKBP-type                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1555 | 148546794 | hypothetical protein Pput_1555                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1556 | 148546795 | D-amino-acid dehydrogenase                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1557 | 148546796 | Asp/Glu racemase                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1558 | 148546797 | permease for cytosine/purine, uracil, thiamine, allantoin    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1559 | 148546798 | AsnC family transcriptional regulator                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1560 | 148546799 | hypothetical protein Pput_1560                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1561 | 148546800 | hypothetical protein Pput_1561                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1563 | 148546801 | major facilitator transporter                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1564 | 148546802 | hypothetical protein Pput_1564                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1565 | 148546803 | sulfate ABC transporter, periplasmic sulfate-binding protein | 0.22 | 0    | 0.44 | 0.002 | 0.000 | 0.007 |
| Pput_1566 | 148546804 | Ion transport protein                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1567 | 148546805 | Urea transporter                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1568 | 148546806 | pyruvate kinase                                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1569 | 148546807 | hydroxypyruvate reductase                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1570 | 148546808 | 2-hydroxy-3-oxopropionate reductase                          | 0.7  | 0    | 0    | 0.005 | 0.000 | 0.000 |
| Pput_1571 | 148546809 | hydroxypyruvate isomerase                                    | 0    | 0    | 0.41 | 0.000 | 0.000 | 0.007 |
| Pput_1572 | 148546810 | glyoxylate carboligase                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1573 | 148546811 | hypothetical protein Pput_1573                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1574 | 148546812 | TetR family transcriptional regulator                        | 1.87 | 0.36 | 0.93 | 0.014 | 0.016 | 0.015 |
| Pput_1575 | 148546813 | hypothetical protein Pput_1575                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1576 | 148546814 | nucleoside-binding outer membrane protein-like protein       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1577 | 148546815 | nucleoside-binding outer membrane protein-like protein       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1578 | 148546816 | uracil-xanthine permease                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1579 | 148546817 | hypothetical protein Pput_1579                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1580 | 148546818 | ureidoglycolate hydrolase                                    | 0.75 | 0    | 0    | 0.006 | 0.000 | 0.000 |
| Pput_1581 | 148546819 | hypothetical protein Pput_1581                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1582 | 148546820 | chitin deacetylase                                           | 0.22 | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_1583 | 148546821 | hydroxyisourate hydrolase                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1584 | 148546822 | xanthine/uracil/vitamin C permease                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1585 | 148546823 | GntR family transcriptional regulator                        | 0.62 | 0.27 | 1.06 | 0.005 | 0.012 | 0.017 |
| Pput_1586 | 148546824 | aquaporin Z                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1587 | 148546825 | guanine deaminase                                            | 0    | 0    | 0.33 | 0.000 | 0.000 | 0.005 |
| Pput_1588 | 148546826 | xanthine dehydrogenase accessory protein XdhC                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1589 | 148546827 | xanthine dehydrogenase, molybdopterin binding subunit        | 0    | 0    | 0.13 | 0.000 | 0.000 | 0.002 |
| Pput_1590 | 148546828 | xanthine dehydrogenase, small subunit                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1591 | 148546829 | GntR family transcriptional regulator                        | 1.33 | 1.33 | 3.17 | 0.010 | 0.058 | 0.051 |
| Pput_1592 | 148546830 | chromosome segregation protein SMC                           | 0.06 | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1593 | 148546831 | cell division protein ZipA                                   | 1.25 | 1.64 | 2.4  | 0.009 | 0.072 | 0.038 |
| Pput_1594 | 148546832 | NAD-dependent DNA ligase LigA                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1595 | 148546833 | MerR family transcriptional regulator                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1596 | 148546834 | hypothetical protein Pput_1596                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1597 | 148546835 | hypothetical protein Pput_1597                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1598 | 148546836 | extracellular solute-binding protein                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1599 | 148546837 | DNA polymerase III subunits gamma and tau                    | 0    | 0.1  | 0    | 0.000 | 0.004 | 0.000 |
| Pput_1600 | 148546838 | hypothetical protein Pput_1600                               | 0.99 | 0    | 0    | 0.007 | 0.000 | 0.000 |
| Pput_1601 | 148546839 | recombination protein RecR                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1602 | 148546840 | adenine phosphoribosyltransferase                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1603 | 148546841 | CRP/FNR family transcriptional regulator                     | 0    | 0    | 0.61 | 0.000 | 0.000 | 0.010 |
| Pput_1604 | 148546842 | coproporphyrinogen III oxidase                               | 0.21 | 0.5  | 0.79 | 0.002 | 0.022 | 0.013 |
| Pput_1605 | 148546843 | hypothetical protein Pput_1605                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1606 | 148546844 | cytochrome oxidase maturation protein, cbb3-type             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1607 | 148546845 | heavy metal translocating P-type ATPase                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1608 | 148546846 | hypothetical protein Pput_1608                               | 1.14 | 0    | 0    | 0.009 | 0.000 | 0.000 |
| Pput_1609 | 148546847 | cytochrome c oxidase cbb3 type, accessory protein FixG       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1610 | 148546848 | cytochrome c oxidase, cbb3-type, subunit III                 | 0.52 | 0    | 0.22 | 0.004 | 0.000 | 0.004 |
| Pput_1611 | 148546849 | Cbb3-type cytochrome oxidase component                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1612 | 148546850 | cytochrome c oxidase, cbb3-type, subunit II                  | 2.4  | 0.59 | 3.6  | 0.018 | 0.026 | 0.058 |
| Pput_1613 | 148546851 | cytochrome c oxidase, cbb3-type, subunit I                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1614 | 148546852 | hypothetical protein Pput_1614                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1615 | 148546853 | cytochrome c oxidase, cbb3-type, subunit III                 | 0.23 | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_1616 | 148546854 | cytochrome c oxidase, cbb3-type, CcoQ subunit                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |

|           |           |                                                                    |       |      |       |       |       |       |
|-----------|-----------|--------------------------------------------------------------------|-------|------|-------|-------|-------|-------|
| Pput_1617 | 148546855 | cytochrome c oxidase, cbb3-type, subunit II                        | 1.81  | 0.59 | 2.39  | 0.014 | 0.026 | 0.038 |
| Pput_1618 | 148546856 | cytochrome c oxidase, cbb3-type, subunit I                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1619 | 148546857 | hypothetical protein Pput_1619                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1620 | 148546858 | hypothetical protein Pput_1620                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1621 | 148546859 | exonuclease, RNase T and DNA polymerase III                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1622 | 148546860 | extracellular solute-binding protein                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1623 | 148546861 | extracytoplasmic-function sigma-70 factor                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1624 | 148546862 | peptide synthase                                                   | 0     | 0    | 0.03  | 0.000 | 0.000 | 0.000 |
| Pput_1625 | 148546863 | ABC-type multidrug transport system ATPase component-like protein  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1626 | 148546864 | hypothetical protein Pput_1626                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1627 | 148546865 | disulfide isomerase/thiol-disulfide oxidase                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1628 | 148546866 | redoxin domain-containing protein                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1629 | 148546867 | protein-disulfide reductase                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1630 | 148546868 | aldehyde oxidase and xanthine dehydrogenase, molybdopterin binding | 0.19  | 0    | 0     | 0.001 | 0.000 | 0.000 |
| Pput_1631 | 148546869 | 2Fe-2S iron-sulfur cluster binding domain-containing protein       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1632 | 148546870 | gluconate 2-dehydrogenase acceptor subunit                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1633 | 148546871 | hypothetical protein Pput_1633                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1634 | 148546872 | MobA-like protein                                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1635 | 148546873 | GAD-like protein                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1636 | 148546874 | GAD-like protein                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1637 | 148546875 | hypothetical protein Pput_1637                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1638 | 148546876 | two component transcriptional regulator                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1639 | 148546877 | integral membrane sensor signal transduction histidine kinase      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1640 | 148546878 | diaminobutyrate--2-oxoglutarate aminotransferase                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1641 | 148546879 | transcription factor jumonji                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1642 | 148546880 | aminotransferase, class V                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1643 | 148546881 | peptidase M19, renal dipeptidase                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1644 | 148546882 | hypothetical protein Pput_1644                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1645 | 148546883 | RNA polymerase sigma factor                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1646 | 148546884 | hypothetical protein Pput_1646                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1647 | 148546885 | major facilitator transporter                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1648 | 148546886 | hypothetical protein Pput_1648                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1649 | 148546887 | helix-turn-helix domain-containing protein                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1650 | 148546888 | electron-transferring-flavoprotein dehydrogenase                   | 0.6   | 0.19 | 1.39  | 0.005 | 0.008 | 0.022 |
| Pput_1651 | 148546889 | electron transfer flavoprotein, alpha/beta-subunit-like protein    | 20.27 | 1.93 | 8.47  | 0.154 | 0.085 | 0.135 |
| Pput_1652 | 148546890 | electron transfer flavoprotein, alpha subunit-like protein         | 3.68  | 0.41 | 2.76  | 0.028 | 0.018 | 0.044 |
| Pput_1653 | 148546891 | amino acid ABC transporter periplasmic protein                     | 0.43  | 0    | 0.4   | 0.003 | 0.000 | 0.006 |
| Pput_1654 | 148546892 | hypothetical protein Pput_1654                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1655 | 148546893 | OmpA/MotB domain-containing protein                                | 0.26  | 0    | 0.43  | 0.002 | 0.000 | 0.007 |
| Pput_1656 | 148546894 | GntR family transcriptional regulator                              | 0.14  | 0    | 0.26  | 0.001 | 0.000 | 0.004 |
| Pput_1657 | 148546895 | hypothetical protein Pput_1657                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1658 | 148546896 | hypothetical protein Pput_1658                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1659 | 148546897 | lipid-binding START domain-containing protein                      | 2     | 0    | 0     | 0.015 | 0.000 | 0.000 |
| Pput_1660 | 148546898 | type II citrate synthase                                           | 4.5   | 0.69 | 6.86  | 0.034 | 0.030 | 0.110 |
| Pput_1661 | 148546899 | succinate dehydrogenase, cytochrome b556 subunit                   | 1.21  | 0    | 0     | 0.009 | 0.000 | 0.000 |
| Pput_1662 | 148546900 | succinate dehydrogenase, hydrophobic membrane anchor protein       | 2.69  | 7.96 | 14.57 | 0.020 | 0.349 | 0.233 |
| Pput_1663 | 148546901 | succinate dehydrogenase flavoprotein subunit                       | 9.89  | 1.93 | 8.63  | 0.075 | 0.085 | 0.138 |
| Pput_1664 | 148546902 | succinate dehydrogenase iron-sulfur subunit                        | 9.23  | 5.46 | 20    | 0.070 | 0.239 | 0.320 |
| Pput_1665 | 148546903 | 2-oxoglutarate dehydrogenase E1 component                          | 14.94 | 1.11 | 6.48  | 0.113 | 0.049 | 0.104 |
| Pput_1666 | 148546904 | dihydrolipoamide succinyltransferase                               | 21.37 | 2.35 | 6.74  | 0.162 | 0.103 | 0.108 |
| Pput_1667 | 148546905 | dihydrolipoamide dehydrogenase                                     | 60.14 | 3.85 | 13.57 | 0.456 | 0.169 | 0.217 |
| Pput_1668 | 148546906 | succinyl-CoA synthetase subunit beta                               | 56.4  | 3.74 | 19.33 | 0.427 | 0.164 | 0.309 |
| Pput_1669 | 148546907 | succinyl-CoA synthetase subunit alpha                              | 80.53 | 4.13 | 13.76 | 0.610 | 0.181 | 0.220 |
| Pput_1670 | 148546908 | branched-chain amino acid transport system II carrier protein      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1671 | 148546909 | hypothetical protein Pput_1671                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1672 | 148546910 | hypothetical protein Pput_1672                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1673 | 148546911 | peptidase                                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1674 | 148546912 | amino acid adenylation domain-containing protein                   | 0     | 0.01 | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1675 | 148546913 | amino acid adenylation domain-containing protein                   | 0     | 0.06 | 0     | 0.000 | 0.003 | 0.000 |
| Pput_1676 | 148546914 | amino acid adenylation domain-containing protein                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1677 | 148546915 | amino acid adenylation domain-containing protein                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1678 | 148546916 | TonB-dependent siderophore receptor                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1679 | 148546917 | hypothetical protein Pput_1679                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1680 | 148546918 | amino acid adenylation domain-containing protein                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1681 | 148546919 | cyclic peptide transporter                                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1682 | 148546920 | hypothetical protein Pput_1682                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1683 | 148546921 | RND efflux system outer membrane lipoprotein                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1684 | 148546922 | ABC transporter related                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1685 | 148546923 | RND family efflux transporter MFP subunit                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1686 | 148546924 | hypothetical protein Pput_1686                                     | 32.24 | 5.09 | 1.29  | 0.244 | 0.223 | 0.021 |
| Pput_1687 | 148546925 | thioesterase superfamily protein                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1688 | 148546926 | thioesterase superfamily protein                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1689 | 148546927 | heat shock protein 90                                              | 6.81  | 0.84 | 2.41  | 0.052 | 0.037 | 0.039 |
| Pput_1690 | 148546928 | dienelactone hydrolase                                             | 10.12 | 0.31 | 3.47  | 0.077 | 0.014 | 0.055 |
| Pput_1691 | 148546929 | pirin domain-containing protein                                    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1692 | 148546930 | amidohydrolase 2                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1693 | 148546931 | 3-oxoacyl-(acyl carrier protein) synthase I                        | 3.32  | 0.64 | 2.53  | 0.025 | 0.028 | 0.040 |
| Pput_1694 | 148546932 | 3-hydroxydecanoyl-(acyl carrier protein) dehydratase               | 12.74 | 1.09 | 4.66  | 0.097 | 0.048 | 0.074 |
| Pput_1695 | 148546933 | integral membrane sensor hybrid histidine kinase                   | 0.25  | 0    | 0     | 0.002 | 0.000 | 0.000 |
| Pput_1696 | 148546934 | hypothetical protein Pput_1696                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1697 | 148546935 | TonB-dependent receptor, plug                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1698 | 148546936 | NAD(P)H-dependent glycerol-3-phosphate dehydrogenase               | 1     | 0.22 | 1.08  | 0.008 | 0.010 | 0.017 |
| Pput_1699 | 148546937 | hypothetical protein Pput_1699                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1700 | 148546938 | phosphohistidine phosphatase, SixA                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1701 | 148546939 | hypothetical protein Pput_1701                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1702 | 148546940 | hypothetical protein Pput_1702                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_1703 | 148546941 | alpha/beta hydrolase fold                                          | 0     | 0.42 | 1.87  | 0.000 | 0.018 | 0.030 |
| Pput_1704 | 148546942 | hypothetical protein Pput_1704                                     | 0.41  | 0    | 0.39  | 0.003 | 0.000 | 0.006 |
| Pput_1705 | 148546943 | hypothetical protein Pput_1705                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |

|           |           |                                                                      |       |      |      |       |       |       |
|-----------|-----------|----------------------------------------------------------------------|-------|------|------|-------|-------|-------|
| Pput_1706 | 148546944 | K+-transporting ATPase, F subunit                                    | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1707 | 148546945 | potassium-transporting ATPase subunit A                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1708 | 148546946 | potassium-transporting ATPase subunit B                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1709 | 148546947 | potassium-transporting ATPase subunit C                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1710 | 148546948 | osmosensitive K+ channel signal transduction histidine kinase        | 0     | 0.08 | 0.08 | 0.000 | 0.004 | 0.001 |
| Pput_1711 | 148546949 | two component transcriptional regulator                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1712 | 148546950 | LysR family transcriptional regulator                                | 0     | 0.24 | 1.46 | 0.000 | 0.011 | 0.023 |
| Pput_1713 | 148546951 | hypothetical protein Pput_1713                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1714 | 148546952 | TonB-dependent siderophore receptor                                  | 0.2   | 0.32 | 0    | 0.002 | 0.014 | 0.000 |
| Pput_1715 | 148546953 | ABC transporter related                                              | 0     | 0    | 0.36 | 0.000 | 0.000 | 0.006 |
| Pput_1716 | 148546954 | binding-protein-dependent transport systems inner membrane component | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1717 | 148546955 | binding-protein-dependent transport systems inner membrane component | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1718 | 148546956 | extracellular solute-binding protein                                 | 0.11  | 0    | 0.35 | 0.001 | 0.000 | 0.006 |
| Pput_1719 | 148546957 | extracellular solute-binding protein                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1720 | 148546958 | MitD domain-containing protein                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1721 | 148546959 | hydroxyacylglutathione hydrolase                                     | 0     | 0    | 1.05 | 0.000 | 0.000 | 0.017 |
| Pput_1722 | 148546960 | hypothetical protein Pput_1722                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1723 | 148546961 | ribonuclease H                                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1724 | 148546962 | DNA polymerase III subunit epsilon                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1725 | 148546963 | lysine decarboxylase                                                 | 0.14  | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_1726 | 148546964 | hypothetical protein Pput_1726                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1727 | 148546965 | NADPH-dependent FMN reductase                                        | 4.31  | 0.41 | 5.03 | 0.033 | 0.018 | 0.080 |
| Pput_1728 | 148546966 | TonB-dependent receptor                                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1729 | 148546967 | LuxR family transcriptional regulator                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1730 | 148546968 | hypothetical protein Pput_1730                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1731 | 148546969 | hypothetical protein Pput_1731                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1732 | 148546970 | bacteriophage CI repressor                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1733 | 148546971 | phage transcriptional activator, Ogr/delta                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1734 | 148546972 | NADH dehydrogenase subunit N                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1735 | 148546973 | NADH dehydrogenase subunit M                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1736 | 148546974 | NADH dehydrogenase subunit L                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1737 | 148546975 | NADH dehydrogenase subunit K                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1738 | 148546976 | NADH dehydrogenase subunit J                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1739 | 148546977 | NADH dehydrogenase subunit I                                         | 16.97 | 1.74 | 6.34 | 0.129 | 0.076 | 0.101 |
| Pput_1740 | 148546978 | NADH dehydrogenase subunit H                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1741 | 148546979 | NADH dehydrogenase subunit G                                         | 1.1   | 0.34 | 1.43 | 0.008 | 0.015 | 0.023 |
| Pput_1742 | 148546980 | NADH dehydrogenase I subunit F                                       | 1.38  | 0.34 | 1.71 | 0.010 | 0.015 | 0.027 |
| Pput_1743 | 148546981 | NADH dehydrogenase subunit E                                         | 0.47  | 0    | 0    | 0.004 | 0.000 | 0.000 |
| Pput_1744 | 148546982 | bifunctional NADH:ubiquinone oxidoreductase subunit C/D              | 3.9   | 0.9  | 2.46 | 0.030 | 0.039 | 0.039 |
| Pput_1745 | 148546983 | NADH dehydrogenase subunit B                                         | 1.44  | 1.62 | 3.56 | 0.011 | 0.071 | 0.057 |
| Pput_1746 | 148546984 | NADH dehydrogenase subunit A                                         | 1.57  | 0    | 1.1  | 0.012 | 0.000 | 0.018 |
| Pput_1747 | 148546985 | YhhN family protein                                                  | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1748 | 148546986 | isocitrate lyase                                                     | 6.73  | 0.44 | 4.16 | 0.051 | 0.019 | 0.066 |
| Pput_1749 | 148546987 | NoIW domain-containing protein                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1750 | 148546988 | hypothetical protein Pput_1750                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1751 | 148546989 | peptidase S8 and S53, subtilisin, kexin, sedolisin                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1752 | 148546990 | sulphate transporter                                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1753 | 148546991 | elongation factor G                                                  | 2.53  | 0.26 | 3.37 | 0.019 | 0.011 | 0.054 |
| Pput_1754 | 148546992 | hypothetical protein Pput_1754                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1755 | 148546993 | hypothetical protein Pput_1755                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1756 | 148546994 | aminotransferase class-III                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1757 | 148546995 | LysR family transcriptional regulator                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1758 | 148546996 | amino acid permease-associated region                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1759 | 148546997 | hypothetical protein Pput_1759                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1760 | 148546998 | glutathione S-transferase domain-containing protein                  | 0.96  | 0    | 0    | 0.007 | 0.000 | 0.000 |
| Pput_1761 | 148546999 | phosphate transporter                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1762 | 148547000 | hypothetical protein Pput_1762                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1763 | 148547001 | GCN5-related N-acetyltransferase                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1764 | 148547002 | helix-turn-helix domain-containing protein                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1765 | 148547003 | two component LuxR family transcriptional regulator                  | 0     | 0    | 0.48 | 0.000 | 0.000 | 0.008 |
| Pput_1766 | 148547004 | excinuclease ABC subunit C                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1767 | 148547005 | CDP-diacylglycerol--glycerol-3-phosphate 3-phosphatidyltransferase   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1768 | 148547006 | protein-disulfide isomerase-like protein                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1770 | 148547007 | sigma-70, region 4 type 2                                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1771 | 148547008 | hypothetical protein Pput_1771                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1772 | 148547009 | putative prophage repressor                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1773 | 148547010 | putative prophage repressor                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1774 | 148547011 | carbamoyl-phosphate synthase L chain, ATP-binding                    | 0.17  | 0.23 | 0.44 | 0.001 | 0.010 | 0.007 |
| Pput_1775 | 148547012 | gamma-carboxygeranoyl-CoA hydratase                                  | 0     | 0.27 | 0.66 | 0.000 | 0.012 | 0.011 |
| Pput_1776 | 148547013 | propionyl-CoA carboxylase                                            | 0.37  | 0.37 | 0.4  | 0.003 | 0.016 | 0.006 |
| Pput_1777 | 148547014 | acyl-CoA dehydrogenase domain-containing protein                     | 0.49  | 0.66 | 1.52 | 0.004 | 0.029 | 0.024 |
| Pput_1778 | 148547015 | AMP-binding domain protein                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1780 | 148547016 | hypothetical protein Pput_1780                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1782 | 148547017 | hypothetical protein Pput_1782                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1783 | 148547018 | alpha amylase, catalytic region                                      | 0     | 0    | 0.31 | 0.000 | 0.000 | 0.005 |
| Pput_1784 | 148547019 | trehalose synthase                                                   | 0     | 0    | 0.19 | 0.000 | 0.000 | 0.003 |
| Pput_1785 | 148547020 | glycogen branching enzyme                                            | 0.14  | 0    | 0.34 | 0.001 | 0.000 | 0.005 |
| Pput_1786 | 148547021 | outer membrane autotransporter                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1787 | 148547022 | endonuclease/exonuclease/phosphatase                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1788 | 148547023 | glycogen debranching enzyme GlgX                                     | 0.14  | 0.09 | 1.21 | 0.001 | 0.004 | 0.019 |
| Pput_1789 | 148547024 | hypothetical protein Pput_1789                                       | 2.91  | 0    | 0    | 0.022 | 0.000 | 0.000 |
| Pput_1790 | 148547025 | malto-oligosyltrehalose synthase                                     | 0     | 0    | 0.51 | 0.000 | 0.000 | 0.008 |
| Pput_1791 | 148547026 | 4-alpha-glucanotransferase                                           | 0     | 0    | 0.48 | 0.000 | 0.000 | 0.008 |
| Pput_1792 | 148547027 | malto-oligosyltrehalose trehalohydrolase                             | 0     | 0    | 0.12 | 0.000 | 0.000 | 0.002 |
| Pput_1793 | 148547028 | glycogen synthase                                                    | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1794 | 148547029 | hypothetical protein Pput_1794                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1795 | 148547030 | 6-phosphogluconate dehydrogenase-like protein                        | 1.12  | 0.35 | 1.33 | 0.008 | 0.015 | 0.021 |
| Pput_1796 | 148547031 | glucose-6-phosphate 1-dehydrogenase                                  | 0.14  | 0.14 | 0.21 | 0.001 | 0.006 | 0.003 |
| Pput_1797 | 148547032 | glycoside hydrolase 15-related                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |

|           |           |                                                                      |      |      |      |       |       |       |
|-----------|-----------|----------------------------------------------------------------------|------|------|------|-------|-------|-------|
| Pput_1798 | 148547033 | glyoxalase/bleomycin resistance protein/dioxygenase                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1799 | 148547034 | TetR family transcriptional regulator                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1800 | 148547035 | dihydropyrimidine dehydrogenase                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1801 | 148547036 | putative oxidoreductase                                              | 0    | 0    | 0.43 | 0.000 | 0.000 | 0.007 |
| Pput_1802 | 148547037 | phenylhydantoinase                                                   | 0.29 | 0.22 | 0.97 | 0.002 | 0.010 | 0.016 |
| Pput_1803 | 148547038 | permease for cytosine/purine, uracil, thiamine, allantoin            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1804 | 148547039 | allantoate amidohydrolase                                            | 0    | 0    | 0.44 | 0.000 | 0.000 | 0.007 |
| Pput_1805 | 148547040 | ribonuclease Z                                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1806 | 148547041 | Lipocalin family protein                                             | 7.18 | 0.94 | 5.39 | 0.054 | 0.041 | 0.086 |
| Pput_1807 | 148547042 | sodium/proton antiporter                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1808 | 148547043 | enoyl-CoA hydratase                                                  | 0.26 | 0.59 | 0.64 | 0.002 | 0.026 | 0.010 |
| Pput_1809 | 148547044 | NADH pyrophosphatase                                                 | 0.25 | 0    | 0.25 | 0.002 | 0.000 | 0.004 |
| Pput_1810 | 148547045 | hypothetical protein Pput_1810                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1811 | 148547046 | hypothetical protein Pput_1811                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1812 | 148547047 | alpha/beta hydrolase fold                                            | 2.65 | 0    | 1.92 | 0.020 | 0.000 | 0.031 |
| Pput_1813 | 148547048 | FAD dependent oxidoreductase                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1814 | 148547049 | DNA topoisomerase III                                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1815 | 148547050 | GCN5-related N-acetyltransferase                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1816 | 148547051 | cupin 4 family protein                                               | 0.18 | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_1817 | 148547052 | adenylosuccinate lyase                                               | 2.2  | 0.32 | 1.73 | 0.017 | 0.014 | 0.028 |
| Pput_1818 | 148547053 | hypothetical protein Pput_1818                                       | 0.67 | 0.16 | 2.31 | 0.005 | 0.007 | 0.037 |
| Pput_1819 | 148547054 | tRNA-specific 2-thiouridylase MnmA                                   | 0    | 0.09 | 0    | 0.000 | 0.004 | 0.000 |
| Pput_1820 | 148547055 | NUDIX hydrolase                                                      | 0.74 | 0    | 0    | 0.006 | 0.000 | 0.000 |
| Pput_1821 | 148547056 | isocitrate dehydrogenase, NADP-dependent                             | 6.16 | 0.3  | 0.92 | 0.047 | 0.013 | 0.015 |
| Pput_1822 | 148547057 | isocitrate dehydrogenase, NADP-dependent                             | 3.89 | 0.37 | 5.86 | 0.029 | 0.016 | 0.094 |
| Pput_1823 | 148547058 | cold-shock DNA-binding domain-containing protein                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1824 | 148547059 | ATP-dependent Clp protease adaptor protein ClpS                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1825 | 148547060 | ATP-dependent Clp protease, ATP-binding subunit clpA                 | 0.19 | 0.24 | 0.28 | 0.001 | 0.011 | 0.004 |
| Pput_1826 | 148547061 | translation initiation factor IF-1                                   | 2.46 | 0    | 0    | 0.019 | 0.000 | 0.000 |
| Pput_1827 | 148547062 | arginyl-tRNA-protein transferase                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1828 | 148547063 | leucyl/phenylalanyl-tRNA--protein transferase                        | 0    | 0.32 | 0.67 | 0.000 | 0.014 | 0.011 |
| Pput_1829 | 148547064 | cell divisionFtsK/SpoIIIE                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1830 | 148547065 | outer-membrane lipoprotein carrier protein                           | 0.36 | 0    | 0    | 0.003 | 0.000 | 0.000 |
| Pput_1831 | 148547066 | recombination factor protein RarA                                    | 0.24 | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_1832 | 148547067 | CrcB protein                                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1833 | 148547068 | seryl-tRNA synthetase                                                | 1.7  | 0.26 | 1.32 | 0.013 | 0.011 | 0.021 |
| Pput_1834 | 148547069 | uroporphyrin-III C-methyltransferase                                 | 0.54 | 0.44 | 0.32 | 0.004 | 0.019 | 0.005 |
| Pput_1835 | 148547070 | glutathione S-transferase-like protein                               | 0.31 | 0    | 0.42 | 0.002 | 0.000 | 0.007 |
| Pput_1836 | 148547071 | hypothetical protein Pput_1836                                       | 0.2  | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_1837 | 148547072 | DsrC family protein                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1838 | 148547073 | DsrH family protein                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1839 | 148547074 | sulfur relay protein TusC                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1840 | 148547075 | sulfur transfer complex subunit TusD                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1841 | 148547076 | uracil-xanthine permease                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1842 | 148547077 | hypothetical protein Pput_1842                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1844 | 148547078 | short-chain dehydrogenase/reductase SDR                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1845 | 148547079 | LysR family transcriptional regulator                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1846 | 148547080 | ribulose-bisphosphate carboxylase                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1847 | 148547081 | type III effector Hrp-dependent outer                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1848 | 148547082 | major facilitator transporter                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1849 | 148547083 | pyruvate kinase                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1850 | 148547084 | phosphopyruvate hydratase                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1852 | 148547085 | LysR family transcriptional regulator                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1853 | 148547086 | short chain dehydrogenase                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1854 | 148547087 | glutathione S-transferase domain-containing protein                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1855 | 148547088 | hypothetical protein Pput_1855                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1857 | 148547089 | helix-turn-helix domain-containing protein                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1858 | 148547090 | isochorismatase hydrolase                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1859 | 148547091 | endoribonuclease L--PSP                                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1860 | 148547092 | LysR family transcriptional regulator                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1861 | 148547093 | peptidase                                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1862 | 148547094 | hypothetical protein Pput_1862                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1863 | 148547095 | hypothetical protein Pput_1863                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1865 | 148547096 | major facilitator transporter                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1866 | 148547097 | TetR family transcriptional regulator                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1867 | 148547098 | chloride channel, core                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1868 | 148547099 | Na <sup>+</sup> /H <sup>+</sup> antiporter NhaA                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1869 | 148547100 | cation transporter                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1870 | 148547101 | 3-oxoacid CoA-transferase, B subunit                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1871 | 148547102 | 3-oxoacid CoA-transferase, A subunit                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1872 | 148547103 | methyl-accepting chemotaxis sensory transducer                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1874 | 148547104 | SMP-30/gluconolactonase/LRE domain-containing protein                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1875 | 148547105 | NAD-dependent epimerase/dehydratase                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1876 | 148547106 | oligogalacturonate-specific porin                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1877 | 148547107 | mandelate racemase/muconate lactonizing protein                      | 0    | 0    | 0.18 | 0.000 | 0.000 | 0.003 |
| Pput_1878 | 148547108 | extracellular solute-binding protein                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1879 | 148547109 | binding-protein-dependent transport systems inner membrane component | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1880 | 148547110 | extracellular solute-binding protein                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1881 | 148547111 | binding-protein-dependent transport systems inner membrane component | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1882 | 148547112 | ABC transporter related                                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1883 | 148547113 | ABC transporter related                                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1884 | 148547114 | glycoside hydrolase family protein                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1885 | 148547115 | GntR domain-containing protein                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1886 | 148547116 | GntR domain-containing protein                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1887 | 148547117 | xanthine and Co dehydrogenase maturation factor                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1888 | 148547118 | TetR family transcriptional regulator                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1889 | 148547119 | aldehyde oxidase and xanthine dehydrogenase, molybdopterin binding   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1890 | 148547120 | 2Fe-2S iron-sulfur cluster binding domain-containing protein         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1891 | 148547121 | MarR family transcriptional regulator                                | 0.49 | 0    | 0.49 | 0.004 | 0.000 | 0.008 |

|           |           |                                                                                               |       |      |      |       |       |       |
|-----------|-----------|-----------------------------------------------------------------------------------------------|-------|------|------|-------|-------|-------|
| Pput_1892 | 148547122 | hypothetical protein Pput_1892                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1893 | 148547123 | monooxygenase, FAD-binding                                                                    | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1894 | 148547124 | alpha/beta hydrolase fold                                                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1895 | 148547125 | Asp/Glu racemase                                                                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1896 | 148547126 | isochorismatase hydrolase                                                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1897 | 148547127 | major facilitator transporter                                                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1898 | 148547128 | outer membrane porin                                                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1900 | 148547130 | LysR family transcriptional regulator                                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1901 | 148547131 | hypothetical protein Pput_1901                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1902 | 148547132 | diguanylate cyclase                                                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1903 | 148547133 | citrate transporter                                                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1904 | 148547134 | 17 kDa surface antigen                                                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1905 | 148547135 | hypothetical protein Pput_1905                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1906 | 148547136 | hypothetical protein Pput_1906                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1907 | 148547137 | hypothetical protein Pput_1907                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1908 | 148547138 | methyltransferase type 12                                                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1909 | 148547139 | short chain dehydrogenase                                                                     | 0     | 0    | 0.44 | 0.000 | 0.000 | 0.007 |
| Pput_1910 | 148547140 | aminoglycoside phosphotransferase                                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1911 | 148547141 | sterol-binding domain-containing protein                                                      | 1.45  | 0    | 0    | 0.011 | 0.000 | 0.000 |
| Pput_1912 | 148547142 | phosphoglycerate mutase                                                                       | 0     | 0    | 0.25 | 0.000 | 0.000 | 0.004 |
| Pput_1913 | 148547143 | putative periplasmic protease                                                                 | 0.82  | 0    | 0    | 0.006 | 0.000 | 0.000 |
| Pput_1917 | 148547144 | hypothetical protein Pput_1917                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1918 | 148547145 | hypothetical protein Pput_1918                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1919 | 148547146 | hypothetical protein Pput_1919                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1920 | 148547147 | hypothetical protein Pput_1920                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1921 | 148547148 | hypothetical protein Pput_1921                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1922 | 148547149 | hypothetical protein Pput_1922                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1923 | 148547150 | ERF family protein                                                                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1926 | 148547151 | hypothetical protein Pput_1926                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1927 | 148547152 | isochorismatase hydrolase                                                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1928 | 148547153 | hypothetical protein Pput_1928                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1929 | 148547154 | hypothetical protein Pput_1929                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1930 | 148547155 | MerR family transcriptional regulator                                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1931 | 148547156 | hypothetical protein Pput_1931                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1932 | 148547157 | alcohol dehydrogenase                                                                         | 8.13  | 0.64 | 3.92 | 0.062 | 0.028 | 0.063 |
| Pput_1933 | 148547158 | hypothetical protein Pput_1933                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1934 | 148547159 | DoxX family protein                                                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1935 | 148547160 | PAS/PAC sensor signal transduction histidine kinase                                           | 0     | 0.18 | 0.18 | 0.000 | 0.008 | 0.003 |
| Pput_1936 | 148547161 | non-specific serine/threonine protein kinase                                                  | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1937 | 148547162 | response regulator receiver protein                                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1938 | 148547163 | carbon storage regulator                                                                      | 15.88 | 0    | 0    | 0.120 | 0.000 | 0.000 |
| Pput_1939 | 148547164 | DNA topoisomerase                                                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1940 | 148547165 | molybdate ABC transporter, ATPase subunit                                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1941 | 148547166 | molybdate ABC transporter, inner membrane subunit                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1942 | 148547167 | molybdenum ABC transporter, periplasmic molybdate-binding protein                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1943 | 148547168 | 2-nitropropane dioxygenase, NPD                                                               | 0     | 0    | 0.2  | 0.000 | 0.000 | 0.003 |
| Pput_1944 | 148547169 | hypothetical protein Pput_1944                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1945 | 148547170 | hypothetical protein Pput_1945                                                                | 1.73  | 0    | 0    | 0.013 | 0.000 | 0.000 |
| Pput_1946 | 148547171 | hypothetical protein Pput_1946                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1947 | 148547172 | cytochrome c, class I                                                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1948 | 148547173 | cytochrome c, class I                                                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1949 | 148547174 | UTP-glucose-1-phosphate uridylyltransferase                                                   | 3.93  | 0.41 | 1.99 | 0.030 | 0.018 | 0.032 |
| Pput_1950 | 148547175 | glutathione reductase                                                                         | 0.34  | 0    | 0.75 | 0.003 | 0.000 | 0.012 |
| Pput_1951 | 148547176 | OmpA/MotB domain-containing protein                                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1952 | 148547177 | ABC transporter related                                                                       | 0     | 0.09 | 0    | 0.000 | 0.004 | 0.000 |
| Pput_1953 | 148547178 | binding-protein-dependent transport systems inner membrane component                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1954 | 148547179 | binding-protein-dependent transport systems inner membrane component                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1955 | 148547180 | extracellular solute-binding protein                                                          | 1.72  | 0    | 0.51 | 0.013 | 0.000 | 0.008 |
| Pput_1956 | 148547181 | bifunctional 3,4-dihydroxy-2-butanone 4-phosphate synthase/GTP cyclohydrolase II-like protein | 0     | 0.09 | 0    | 0.000 | 0.004 | 0.000 |
| Pput_1957 | 148547182 | hypothetical protein Pput_1957                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1958 | 148547183 | alpha/beta hydrolase domain-containing protein                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1959 | 148547184 | LysR family transcriptional regulator                                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1960 | 148547185 | hypothetical protein Pput_1960                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1961 | 148547186 | MbtH domain-containing protein                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1962 | 148547187 | thioesterase                                                                                  | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1963 | 148547188 | isochorismatase hydrolase                                                                     | 2.57  | 0.43 | 1.43 | 0.019 | 0.019 | 0.023 |
| Pput_1964 | 148547189 | hypothetical protein Pput_1964                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1965 | 148547190 | hypothetical protein Pput_1965                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1966 | 148547191 | ABC-3 protein                                                                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1967 | 148547192 | ABC transporter related                                                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1968 | 148547193 | periplasmic solute binding protein                                                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1969 | 148547194 | hypothetical protein Pput_1969                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1970 | 148547195 | hypothetical protein Pput_1970                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1971 | 148547196 | hypothetical protein Pput_1971                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1972 | 148547197 | peptidase                                                                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1973 | 148547198 | lysine/ornithine N-monooxygenase-like protein                                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1974 | 148547199 | hypothetical protein Pput_1974                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1976 | 148547200 | D-alanyl-D-alanine endopeptidase                                                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1978 | 148547201 | phage integrase family protein                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1979 | 148547202 | LysR family transcriptional regulator                                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1980 | 148547203 | glutathione-dependent formaldehyde-activating, GFA                                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1981 | 148547204 | luciferase family protein                                                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1983 | 148547205 | hypothetical protein Pput_1983                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1984 | 148547206 | low temperature requirement A                                                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1985 | 148547207 | DSBA oxidoreductase                                                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1986 | 148547208 | alkyl hydroperoxide reductase/ Thiol specific antioxidant/ Mal allergen                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1987 | 148547209 | GntR family transcriptional regulator                                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1988 | 148547210 | MarR family transcriptional regulator                                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1989 | 148547211 | alginate lyase 2                                                                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |

|           |           |                                                                         |       |      |      |       |       |       |
|-----------|-----------|-------------------------------------------------------------------------|-------|------|------|-------|-------|-------|
| Pput_1990 | 148547212 | hypothetical protein Pput_1990                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1991 | 148547213 | putative phage repressor                                                | 0     | 0.24 | 0.67 | 0.000 | 0.011 | 0.011 |
| Pput_1992 | 148547214 | hypothetical protein Pput_1992                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1993 | 148547215 | hypothetical protein Pput_1993                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1994 | 148547216 | hypothetical protein Pput_1994                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_1995 | 148547217 | shikimate 5-dehydrogenase                                               | 0.26  | 0    | 0.26 | 0.002 | 0.000 | 0.004 |
| Pput_1996 | 148547218 | hypothetical protein Pput_1996                                          | 1.11  | 0    | 0    | 0.008 | 0.000 | 0.000 |
| Pput_1997 | 148547219 | lactoylglutathione lyase                                                | 0.61  | 0    | 0    | 0.005 | 0.000 | 0.000 |
| Pput_1998 | 148547220 | hypothetical protein Pput_1998                                          | 24.66 | 2.11 | 5.01 | 0.187 | 0.092 | 0.080 |
| Pput_1999 | 148547221 | outer membrane porin                                                    | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2000 | 148547222 | precorrin 6A synthase                                                   | 0     | 0.14 | 0.29 | 0.000 | 0.006 | 0.005 |
| Pput_2001 | 148547223 | response regulator receiver protein                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2002 | 148547224 | multi-sensor hybrid histidine kinase                                    | 0     | 0    | 0.3  | 0.000 | 0.000 | 0.005 |
| Pput_2003 | 148547225 | MCP methyltransferase, CheR-type                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2004 | 148547226 | CheB methylsterase                                                      | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2005 | 148547227 | response regulator receiver sensor signal transduction histidine kinase | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2006 | 148547228 | response regulator receiver protein                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2007 | 148547229 | TetR family transcriptional regulator                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2008 | 148547230 | 3-hydroxybutyryl-CoA dehydrogenase                                      | 0     | 0.27 | 0.42 | 0.000 | 0.012 | 0.007 |
| Pput_2009 | 148547231 | beta-ketothiolase                                                       | 0.42  | 0.42 | 0.84 | 0.003 | 0.018 | 0.013 |
| Pput_2010 | 148547232 | helix-turn-helix domain-containing protein                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2011 | 148547233 | alkylhydroperoxidase                                                    | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2012 | 148547234 | major facilitator transporter                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2013 | 148547235 | GntR family transcriptional regulator                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2014 | 148547236 | hypothetical protein Pput_2014                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2015 | 148547237 | hypothetical protein Pput_2015                                          | 2.02  | 0    | 0.94 | 0.015 | 0.000 | 0.015 |
| Pput_2016 | 148547238 | glycolate oxidase iron-sulfur subunit                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2017 | 148547239 | glycolate oxidase FAD binding subunit                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2018 | 148547240 | glycolate oxidase subunit GlcD                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2019 | 148547241 | DNA-binding transcriptional regulator GlcC                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2020 | 148547242 | hypothetical protein Pput_2020                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2021 | 148547243 | glutathione S-transferase domain-containing protein                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2022 | 148547244 | peptidoglycan glycosyltransferase                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2023 | 148547245 | major facilitator transporter                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2024 | 148547246 | outer membrane porin                                                    | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2025 | 148547247 | GntR family transcriptional regulator                                   | 0     | 0.3  | 0.6  | 0.000 | 0.013 | 0.010 |
| Pput_2026 | 148547248 | ferredoxin                                                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2027 | 148547249 | Rieske (2Fe-2S) domain-containing protein                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2028 | 148547250 | ABC transporter related                                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2029 | 148547251 | hypothetical protein Pput_2029                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2030 | 148547252 | secreted hydrolase-like protein                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2031 | 148547253 | enoyl-CoA hydratase/isomerase                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2032 | 148547254 | TetR family transcriptional regulator                                   | 0     | 0    | 0.7  | 0.000 | 0.000 | 0.011 |
| Pput_2033 | 148547255 | two component transcriptional regulator                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2034 | 148547256 | extracellular solute-binding protein                                    | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2035 | 148547257 | multi-sensor hybrid histidine kinase                                    | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2036 | 148547258 | amino acid permease-associated region                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2037 | 148547259 | enoyl-CoA hydratase/isomerase                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2038 | 148547260 | acyl-CoA dehydrogenase domain-containing protein                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2039 | 148547261 | CoA-binding domain-containing protein                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2040 | 148547262 | hypothetical protein Pput_2040                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2041 | 148547263 | alanine racemase                                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2042 | 148547264 | aminotransferase, class I and II                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2043 | 148547265 | aldehyde dehydrogenase                                                  | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2044 | 148547266 | ribosyldihyronicotinamide dehydrogenase (quinone)                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2045 | 148547267 | extracellular solute-binding protein                                    | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2046 | 148547268 | hypothetical protein Pput_2046                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2047 | 148547269 | LuxR family transcriptional regulator                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2048 | 148547270 | ethanolamine utilisation protein, EutH                                  | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2049 | 148547271 | response regulator receiver protein                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2050 | 148547272 | FAD-linked oxidoreductase                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2051 | 148547273 | short-chain dehydrogenase/reductase SDR                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2052 | 148547274 | LysR family transcriptional regulator                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2053 | 148547275 | muconate and chloromuconate cycloisomerase                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2054 | 148547276 | muconolactone Delta-isomerase                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2055 | 148547277 | catechol 1,2-dioxygenase                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2056 | 148547278 | hypothetical protein Pput_2056                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2057 | 148547279 | diguanylate cyclase/phosphodiesterase with PAS/PAC and GAF sensor(s)    | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2058 | 148547280 | aldo/keto reductase                                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2059 | 148547281 | hypothetical protein Pput_2059                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2060 | 148547282 | LysR family transcriptional regulator                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2061 | 148547283 | catalase/peroxidase HPI                                                 | 9.75  | 0.94 | 7.81 | 0.074 | 0.041 | 0.125 |
| Pput_2062 | 148547284 | creatinase                                                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2063 | 148547285 | major facilitator transporter                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2064 | 148547286 | AraC family transcriptional regulator                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2065 | 148547287 | phosphatidylserine synthase                                             | 0     | 0    | 0.68 | 0.000 | 0.000 | 0.011 |
| Pput_2066 | 148547288 | diguanylate cyclase                                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2067 | 148547289 | hypothetical protein Pput_2067                                          | 0.91  | 0.15 | 0.31 | 0.007 | 0.007 | 0.005 |
| Pput_2068 | 148547290 | hypothetical protein Pput_2068                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2069 | 148547291 | LysR family transcriptional regulator                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2070 | 148547292 | dehydratase                                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2071 | 148547293 | helix-turn-helix domain-containing protein                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2072 | 148547294 | major facilitator transporter                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2073 | 148547295 | nitroreductase                                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2074 | 148547296 | outer membrane porin                                                    | 0     | 0.17 | 0    | 0.000 | 0.007 | 0.000 |
| Pput_2075 | 148547297 | permease for cytosine/purine, uracil, thiamine, allantoin               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2076 | 148547298 | AsnC family transcriptional regulator                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2077 | 148547299 | lysine exporter protein LysE/YggA                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2078 | 148547300 | lysine exporter protein LysE/YggA                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |



|           |           |                                                                                              |      |      |      |       |       |       |
|-----------|-----------|----------------------------------------------------------------------------------------------|------|------|------|-------|-------|-------|
| Pput_2079 | 148547301 | GAF sensor hybrid histidine kinase                                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2080 | 148547302 | NUDIX hydrolase                                                                              | 0    | 0    | 0.36 | 0.000 | 0.000 | 0.006 |
| Pput_2081 | 148547303 | GntR family transcriptional regulator                                                        | 0.87 | 0.87 | 1.78 | 0.007 | 0.038 | 0.028 |
| Pput_2082 | 148547304 | carboxymuconolactone decarboxylase                                                           | 0    | 0    | 0.59 | 0.000 | 0.000 | 0.009 |
| Pput_2083 | 148547305 | flavin reductase domain-containing protein                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2084 | 148547306 | aldehyde dehydrogenase                                                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2085 | 148547307 | alpha/beta hydrolase fold                                                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2086 | 148547308 | hypothetical protein Pput_2086                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2087 | 148547309 | luciferase family protein                                                                    | 0.2  | 0    | 0.2  | 0.002 | 0.000 | 0.003 |
| Pput_2088 | 148547310 | flavin reductase domain-containing protein                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2090 | 148547311 | permease for cytosine/purine, uracil, thiamine, allantoin                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2091 | 148547312 | methyl-accepting chemotaxis sensory transducer                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2092 | 148547313 | FAD-dependent pyridine nucleotide-disulphide oxidoreductase                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2093 | 148547314 | helix-turn-helix domain-containing protein                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2094 | 148547315 | alkylhydroperoxidase                                                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2095 | 148547316 | Acyl-CoA dehydrogenase-like protein                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2096 | 148547317 | ABC transporter related                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2097 | 148547318 | ABC-type nitrate/sulfonate/bicarbonate transport systems periplasmic components-like protein | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2098 | 148547319 | binding-protein-dependent transport systems inner membrane component                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2099 | 148547320 | GCN5-related N-acetyltransferase                                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2100 | 148547321 | N-acetyl-gamma-glutamyl-phosphate reductase                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2101 | 148547322 | LysR family transcriptional regulator                                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2102 | 148547323 | SH3 type 3 domain-containing protein                                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2103 | 148547324 | outer membrane porin                                                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2104 | 148547325 | 3-demethylubiquinone-9 3-methyltransferase                                                   | 2.8  | 0    | 1.2  | 0.021 | 0.000 | 0.019 |
| Pput_2105 | 148547326 | choline/carnitine/betaine transporter                                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2106 | 148547327 | hypothetical protein Pput_2106                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2107 | 148547328 | hypothetical protein Pput_2107                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2108 | 148547329 | lysine exporter protein LysE/YggA                                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2109 | 148547330 | extracellular solute-binding protein                                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2110 | 148547331 | gluconate 2-dehydrogenase acceptor subunit                                                   | 0    | 0.16 | 1.04 | 0.000 | 0.007 | 0.017 |
| Pput_2111 | 148547332 | aldehyde oxidase and xanthine dehydrogenase, molybdopterin binding                           | 0.85 | 0.31 | 1.61 | 0.006 | 0.014 | 0.026 |
| Pput_2112 | 148547333 | 2Fe-2S iron-sulfur cluster binding domain-containing protein                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2113 | 148547334 | hypothetical protein Pput_2113                                                               | 0.09 | 0    | 0.14 | 0.001 | 0.000 | 0.002 |
| Pput_2114 | 148547335 | hypothetical protein Pput_2114                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2115 | 148547336 | hypothetical protein Pput_2115                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2116 | 148547337 | hypothetical protein Pput_2116                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2117 | 148547338 | Rhs element Vgr protein                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2118 | 148547339 | hypothetical protein Pput_2118                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2119 | 148547340 | hypothetical protein Pput_2119                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2120 | 148547341 | hypothetical protein Pput_2120                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2121 | 148547342 | hypothetical protein Pput_2121                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2122 | 148547343 | FHA domain-containing protein                                                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2123 | 148547344 | hypothetical protein Pput_2123                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2124 | 148547345 | hypothetical protein Pput_2124                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2125 | 148547346 | GPW/gp25 family protein                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2126 | 148547347 | hypothetical protein Pput_2126                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2127 | 148547348 | hypothetical protein Pput_2127                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2128 | 148547349 | hypothetical protein Pput_2128                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2129 | 148547350 | ImpA domain-containing protein                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2130 | 148547351 | ImcF domain-containing protein                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2131 | 148547352 | ABC transporter related                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2132 | 148547353 | hypothetical protein Pput_2132                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2133 | 148547354 | hypothetical protein Pput_2133                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2134 | 148547355 | hypothetical protein Pput_2134                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2135 | 148547356 | cellulose synthase, putative                                                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2136 | 148547357 | cellulose synthase catalytic subunit                                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2137 | 148547358 | cellulose synthase regulator protein                                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2138 | 148547359 | endo-1,4-D-glucanase                                                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2139 | 148547360 | cellulose synthase subunit BcsC                                                              | 0.06 | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2140 | 148547361 | dihydrodipicolinate synthase                                                                 | 0    | 0.58 | 0    | 0.000 | 0.025 | 0.000 |
| Pput_2141 | 148547362 | acylamide amidohydrolase                                                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2142 | 148547363 | ATPase                                                                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2143 | 148547364 | ABC-type branched-chain amino acid transport systems periplasmic component-like protein      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2144 | 148547365 | response regulator receiver/ANTAR domain-containing protein                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2145 | 148547366 | AmiS/UreI transporter                                                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2146 | 148547367 | GCN5-related N-acetyltransferase                                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2147 | 148547368 | oxidoreductase FAD-binding subunit                                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2148 | 148547369 | GntR family transcriptional regulator                                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2149 | 148547370 | methyl-accepting chemotaxis sensory transducer                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2150 | 148547371 | magnesium-translocating P-type ATPase                                                        | 0    | 0    | 0.4  | 0.000 | 0.000 | 0.006 |
| Pput_2151 | 148547372 | hypothetical protein Pput_2151                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2152 | 148547373 | major facilitator transporter                                                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2153 | 148547374 | GCN5-related N-acetyltransferase                                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2154 | 148547375 | helix-turn-helix domain-containing protein                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2155 | 148547376 | UspA domain-containing protein                                                               | 1.69 | 0.4  | 1.37 | 0.013 | 0.018 | 0.022 |
| Pput_2156 | 148547377 | LysR family transcriptional regulator                                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2157 | 148547378 | iron-containing alcohol dehydrogenase                                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2158 | 148547379 | major facilitator transporter                                                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2159 | 148547380 | hydratase/decarboxylase                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2160 | 148547381 | XRE family transcriptional regulator                                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2161 | 148547382 | hypothetical protein Pput_2161                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2162 | 148547383 | membrane-associated protein in eicosanoid and glutathione metabolism (MAPEG)                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2163 | 148547384 | hypothetical protein Pput_2163                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2164 | 148547385 | phosphate ABC transporter, periplasmic phosphate-binding protein                             | 6.73 | 0.22 | 1.43 | 0.051 | 0.010 | 0.023 |
| Pput_2165 | 148547386 | phosphate ABC transporter, inner membrane subunit PstC                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2166 | 148547387 | phosphate ABC transporter, inner membrane subunit PstA                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2167 | 148547388 | phosphate ABC transporter, ATPase subunit                                                    | 0.28 | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_2168 | 148547389 | hypothetical protein Pput_2168                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |

|           |           |                                                                                         |      |      |      |       |       |       |
|-----------|-----------|-----------------------------------------------------------------------------------------|------|------|------|-------|-------|-------|
| Pput_2169 | 148547390 | hypothetical protein Pput_2169                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2170 | 148547391 | hypothetical protein Pput_2170                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2171 | 148547392 | hypothetical protein Pput_2171                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2172 | 148547393 | PAS/PAC sensor hybrid histidine kinase                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2173 | 148547394 | two component LuxR family transcriptional regulator                                     | 0    | 0.16 | 0.33 | 0.000 | 0.007 | 0.005 |
| Pput_2174 | 148547395 | rhodanese domain-containing protein                                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2175 | 148547396 | ABC transporter related                                                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2176 | 148547397 | FAD dependent oxidoreductase                                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2177 | 148547398 | polar amino acid ABC transporter, inner membrane subunit                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2178 | 148547399 | polar amino acid ABC transporter, inner membrane subunit                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2179 | 148547400 | extracellular solute-binding protein                                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2180 | 148547401 | RpiR family transcriptional regulator                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2181 | 148547402 | malate/L-lactate dehydrogenase                                                          | 0.42 | 0.35 | 0.4  | 0.003 | 0.015 | 0.006 |
| Pput_2182 | 148547403 | aromatic amino acid aminotransferase                                                    | 2.12 | 0.51 | 0.9  | 0.016 | 0.022 | 0.014 |
| Pput_2183 | 148547404 | aromatic amino acid permease                                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2184 | 148547405 | major facilitator transporter                                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2185 | 148547406 | redoxin domain-containing protein                                                       | 2.75 | 0.82 | 0    | 0.021 | 0.036 | 0.000 |
| Pput_2186 | 148547407 | RND family efflux transporter MFP subunit                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2187 | 148547408 | acriflavin resistance protein                                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2188 | 148547409 | acriflavin resistance protein                                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2189 | 148547410 | RND efflux system outer membrane lipoprotein                                            | 0    | 0.07 | 0    | 0.000 | 0.003 | 0.000 |
| Pput_2190 | 148547411 | diguanylate cyclase/phosphodiesterase                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2191 | 148547412 | hypothetical protein Pput_2191                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2192 | 148547413 | hypothetical protein Pput_2192                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2193 | 148547414 | phosphoglucumutase                                                                      | 0.33 | 0    | 0.57 | 0.002 | 0.000 | 0.009 |
| Pput_2194 | 148547415 | ECF subfamily RNA polymerase sigma-24 factor                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2195 | 148547416 | anti-FecI sigma factor, FecR                                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2196 | 148547417 | TonB-dependent siderophore receptor                                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2197 | 148547418 | LysR family transcriptional regulator                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2198 | 148547419 | amidohydrolase 2                                                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2199 | 148547420 | short-chain dehydrogenase/reductase SDR                                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2200 | 148547421 | endoribonuclease L-PSP                                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2201 | 148547422 | flavoprotein involved in K+ transport-like protein                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2202 | 148547423 | hypothetical protein Pput_2202                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2203 | 148547424 | acetylornithine deacetylase                                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2204 | 148547425 | carbohydrate-selective porin OprB                                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2205 | 148547426 | Pyrrolo-quinoline quinone                                                               | 0    | 0.18 | 3.96 | 0.000 | 0.008 | 0.063 |
| Pput_2206 | 148547427 | cupin 2 domain-containing protein                                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2207 | 148547428 | LysR family transcriptional regulator                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2208 | 148547429 | major facilitator transporter                                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2209 | 148547430 | lysine exporter protein LysE/YggA                                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2210 | 148547431 | AraC family transcriptional regulator                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2211 | 148547432 | SCP-like extracellular protein                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2212 | 148547433 | cell wall hydrolase, SleB                                                               | 0.97 | 0    | 0    | 0.007 | 0.000 | 0.000 |
| Pput_2213 | 148547434 | auxin efflux carrier                                                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2214 | 148547435 | LysR family transcriptional regulator                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2215 | 148547436 | binding-protein-dependent transport systems inner membrane component                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2216 | 148547437 | substrate-binding region of ABC-type glycine betaine transport system                   | 0.21 | 0    | 0.68 | 0.002 | 0.000 | 0.011 |
| Pput_2217 | 148547438 | methyl-accepting chemotaxis sensory transducer                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2218 | 148547439 | Na+/H+ antiporter NhaC                                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2219 | 148547440 | anti-FecI sigma factor, FecR                                                            | 0.2  | 0    | 0.2  | 0.002 | 0.000 | 0.003 |
| Pput_2220 | 148547441 | acyl-CoA dehydrogenase domain-containing protein                                        | 0    | 0    | 0.3  | 0.000 | 0.000 | 0.005 |
| Pput_2221 | 148547442 | acyl-CoA synthetase                                                                     | 0    | 0    | 0.47 | 0.000 | 0.000 | 0.008 |
| Pput_2222 | 148547443 | PAS/PAC sensor signal transduction histidine kinase                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2223 | 148547444 | response regulator receiver protein                                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2224 | 148547445 | MarR family transcriptional regulator                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2225 | 148547446 | secretion protein HlyD family protein                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2226 | 148547447 | EmrB/QacA family drug resistance transporter                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2227 | 148547448 | short-chain dehydrogenase/reductase SDR                                                 | 1.26 | 0.5  | 2.28 | 0.010 | 0.022 | 0.036 |
| Pput_2228 | 148547449 | PAS/PAC sensor hybrid histidine kinase                                                  | 0    | 0.1  | 0    | 0.000 | 0.004 | 0.000 |
| Pput_2229 | 148547450 | PAS/PAC sensor hybrid histidine kinase                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2230 | 148547451 | GntR family transcriptional regulator                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2231 | 148547452 | cytochrome c oxidase cbb3 type, accessory protein FixG                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2232 | 148547453 | hypothetical protein Pput_2232                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2233 | 148547454 | MgtC/SapB transporter                                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2234 | 148547455 | hydroxymethylglutaryl-CoA lyase                                                         | 0.97 | 0.25 | 0.81 | 0.007 | 0.011 | 0.013 |
| Pput_2235 | 148547456 | MerR family transcriptional regulator                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2236 | 148547457 | AraC family transcriptional regulator                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2237 | 148547458 | 4-hydroxybenzoate 3-monooxygenase                                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2238 | 148547459 | gamma-glutamyltransferase                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2239 | 148547460 | LysR family transcriptional regulator                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2240 | 148547461 | ornithine cyclodeaminase                                                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2241 | 148547462 | AsnC family transcriptional regulator                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2242 | 148547463 | lipid-binding START domain-containing protein                                           | 0    | 0.17 | 0    | 0.000 | 0.007 | 0.000 |
| Pput_2243 | 148547464 | hypothetical protein Pput_2243                                                          | 1.59 | 0.83 | 0.92 | 0.012 | 0.036 | 0.015 |
| Pput_2244 | 148547465 | coenzyme F420-dependent N5 N10-methylene tetrahydromethanopterin reductase-like protein | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2245 | 148547466 | aliphatic sulfonate ABC transporter periplasmic ligand-binding protein                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2246 | 148547467 | hypothetical protein Pput_2246                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2247 | 148547468 | TetR family transcriptional regulator                                                   | 0    | 0    | 0.81 | 0.000 | 0.000 | 0.013 |
| Pput_2248 | 148547469 | helix-turn-helix domain-containing protein                                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2249 | 148547470 | hypothetical protein Pput_2249                                                          | 0.5  | 0    | 0    | 0.004 | 0.000 | 0.000 |
| Pput_2250 | 148547471 | hypothetical protein Pput_2250                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2251 | 148547472 | hypothetical protein Pput_2251                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2252 | 148547473 | endoribonuclease L-PSP                                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2253 | 148547474 | hypothetical protein Pput_2253                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2254 | 148547475 | hypothetical protein Pput_2254                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2255 | 148547476 | hypothetical protein Pput_2255                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2256 | 148547477 | hypothetical protein Pput_2256                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2257 | 148547478 | hypothetical protein Pput_2257                                                          | 0    | 0    | 0.14 | 0.000 | 0.000 | 0.002 |

|           |           |                                                                                         |      |      |      |       |       |       |
|-----------|-----------|-----------------------------------------------------------------------------------------|------|------|------|-------|-------|-------|
| Pput_2258 | 148547479 | hypothetical protein Pput_2258                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2259 | 148547480 | helix-turn-helix domain-containing protein                                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2260 | 148547481 | 5-oxoprolinase (ATP-hydrolyzing)                                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2261 | 148547482 | hydantoinase B/oxoprolinase                                                             | 0    | 0.12 | 0    | 0.000 | 0.005 | 0.000 |
| Pput_2262 | 148547483 | LysR family transcriptional regulator                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2263 | 148547484 | transmembrane pair domain-containing protein                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2264 | 148547485 | branched-chain amino acid aminotransferase                                              | 8.33 | 0.79 | 5.75 | 0.063 | 0.035 | 0.092 |
| Pput_2265 | 148547486 | ABC transporter related                                                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2266 | 148547487 | hypothetical protein Pput_2266                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2267 | 148547488 | hypothetical protein Pput_2267                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2268 | 148547489 | cobalamin biosynthesis protein CobW                                                     | 0    | 0.1  | 0.4  | 0.000 | 0.004 | 0.006 |
| Pput_2269 | 148547490 | cobaltochelate subunit CobN                                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2270 | 148547491 | magnesium chelatase                                                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2271 | 148547492 | hypothetical protein Pput_2271                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2272 | 148547493 | hypothetical protein Pput_2272                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2273 | 148547494 | sigma-54 dependent transcriptional regulator                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2274 | 148547495 | peptidase U32                                                                           | 0.1  | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_2275 | 148547496 | endoribonuclease L-PSP                                                                  | 0.66 | 0    | 0    | 0.005 | 0.000 | 0.000 |
| Pput_2276 | 148547497 | hypothetical protein Pput_2276                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2277 | 148547498 | hypothetical protein Pput_2277                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2278 | 148547499 | LysR family transcriptional regulator                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2279 | 148547500 | acyl-CoA dehydrogenase domain-containing protein                                        | 0.91 | 0.19 | 1.16 | 0.007 | 0.008 | 0.019 |
| Pput_2280 | 148547501 | enoyl-CoA hydratase/isomerase                                                           | 0.2  | 0.31 | 0    | 0.002 | 0.014 | 0.000 |
| Pput_2281 | 148547502 | hypothetical protein Pput_2281                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2282 | 148547503 | YVTN beta-propeller repeat-containing protein                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2283 | 148547504 | electron transport protein SCO1/SenC                                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2284 | 148547505 | electron transport protein SCO1/SenC                                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2285 | 148547506 | ABC-type branched-chain amino acid transport systems periplasmic component-like protein | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2286 | 148547507 | SurA domain-containing protein                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2287 | 148547508 | response regulator receiver protein                                                     | 0    | 0.42 | 0    | 0.000 | 0.018 | 0.000 |
| Pput_2288 | 148547509 | type II secretion system protein E                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2289 | 148547510 | hypothetical protein Pput_2289                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2290 | 148547511 | hypothetical protein Pput_2290                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2291 | 148547512 | hypothetical protein Pput_2291                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2292 | 148547513 | hypothetical protein Pput_2292                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2293 | 148547514 | type II and III secretion system protein                                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2294 | 148547515 | Type II secretory pathway pseudopilin PulG-like protein                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2295 | 148547516 | type II secretion system protein G                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2296 | 148547517 | hypothetical protein Pput_2296                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2297 | 148547518 | curli assembly protein CsgE                                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2298 | 148547519 | hypothetical protein Pput_2298                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2299 | 148547520 | curli production assembly/transport component CsgG                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2300 | 148547521 | hypothetical protein Pput_2300                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2301 | 148547522 | Fis family GAF modulated sigma54 specific transcriptional regulator                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2302 | 148547523 | ABC transporter related                                                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2303 | 148547524 | hypothetical protein Pput_2303                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2304 | 148547525 | FAD dependent oxidoreductase                                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2305 | 148547526 | hypothetical protein Pput_2305                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2306 | 148547527 | aldehyde dehydrogenase                                                                  | 0.21 | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_2307 | 148547528 | hypothetical protein Pput_2307                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2308 | 148547529 | radical SAM domain-containing protein                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2309 | 148547530 | quinoxemoprotein amine dehydrogenase, gamma subunit                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2310 | 148547531 | hypothetical protein Pput_2310                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2311 | 148547532 | acyl-CoA synthetase                                                                     | 0    | 0    | 0.12 | 0.000 | 0.000 | 0.002 |
| Pput_2312 | 148547533 | molybdopterin-guanine dinucleotide biosynthesis protein A                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2313 | 148547534 | hydrophobe/amphiphile efflux-1 (HAE1) family protein                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2314 | 148547535 | RND family efflux transporter MFP subunit                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2315 | 148547536 | two component transcriptional regulator                                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2316 | 148547537 | integral membrane sensor signal transduction histidine kinase                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2317 | 148547538 | transmembrane pair domain-containing protein                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2318 | 148547539 | threonine dehydratase                                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2319 | 148547540 | hypothetical protein Pput_2319                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2320 | 148547541 | glyoxalase/bleomycin resistance protein/dioxygenase                                     | 3.49 | 0    | 0    | 0.026 | 0.000 | 0.000 |
| Pput_2321 | 148547542 | aldehyde dehydrogenase                                                                  | 2.11 | 0.06 | 0.64 | 0.016 | 0.003 | 0.010 |
| Pput_2322 | 148547543 | hypothetical protein Pput_2322                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2323 | 148547544 | hypothetical protein Pput_2323                                                          | 0    | 0    | 0.18 | 0.000 | 0.000 | 0.003 |
| Pput_2324 | 148547545 | AraC family transcriptional regulator                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2325 | 148547546 | lysine exporter protein LysE/YggA                                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2326 | 148547547 | integral membrane protein TerC                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2327 | 148547548 | transporter DMT superfamily protein                                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2328 | 148547549 | diguanylate phosphodiesterase                                                           | 0    | 0    | 0.13 | 0.000 | 0.000 | 0.002 |
| Pput_2329 | 148547550 | 4-hydroxyphenylpyruvate dioxygenase                                                     | 1.23 | 3.34 | 4.36 | 0.009 | 0.146 | 0.070 |
| Pput_2330 | 148547551 | hypothetical protein Pput_2330                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2331 | 148547552 | ThiI/PfpI domain-containing protein                                                     | 1.01 | 0.32 | 0.62 | 0.008 | 0.014 | 0.010 |
| Pput_2332 | 148547553 | PAS/PAC sensor hybrid histidine kinase                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2333 | 148547554 | histidine kinase                                                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2334 | 148547555 | TPR repeat-containing protein                                                           | 0    | 0    | 0.35 | 0.000 | 0.000 | 0.006 |
| Pput_2335 | 148547556 | RND efflux system outer membrane lipoprotein                                            | 0    | 0.96 | 0.47 | 0.000 | 0.042 | 0.008 |
| Pput_2336 | 148547557 | hydrophobe/amphiphile efflux-1 (HAE1) family protein                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2337 | 148547558 | RND family efflux transporter MFP subunit                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2338 | 148547559 | type II secretion system protein                                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2339 | 148547560 | general secretion pathway protein G                                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2340 | 148547561 | lytic transglycosylase, catalytic                                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2341 | 148547562 | integral membrane sensor signal transduction histidine kinase                           | 0    | 0.07 | 0.53 | 0.000 | 0.003 | 0.008 |
| Pput_2342 | 148547563 | integral membrane sensor signal transduction histidine kinase                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2343 | 148547564 | two component, sigma54 specific, Fis family transcriptional regulator                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2344 | 148547565 | hypothetical protein Pput_2344                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2345 | 148547566 | gluconate transporter                                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2346 | 148547567 | carbohydrate kinase                                                                     | 2.25 | 0    | 0    | 0.017 | 0.000 | 0.000 |

|           |           |                                                                    |      |      |      |       |       |       |
|-----------|-----------|--------------------------------------------------------------------|------|------|------|-------|-------|-------|
| Pput_2347 | 148547568 | Lacl family transcriptional regulator                              | 0.34 | 0    | 0.44 | 0.003 | 0.000 | 0.007 |
| Pput_2348 | 148547569 | methyl-accepting chemotaxis sensory transducer                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2349 | 148547570 | Hpt sensor hybrid histidine kinase                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2350 | 148547571 | two component LuxR family transcriptional regulator                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2351 | 148547572 | hypothetical protein Pput_2351                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2352 | 148547573 | precorrin-4 C11-methyltransferase                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2353 | 148547574 | hypothetical protein Pput_2353                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2354 | 148547575 | cobalt transporter, subunit CbtA                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2355 | 148547576 | cobalt transporter, subunit CbtB                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2356 | 148547577 | GCN5-related N-acetyltransferase                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2357 | 148547578 | lysine exporter protein LysE/YggA                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2358 | 148547579 | alpha/beta hydrolase fold                                          | 0.25 | 0    | 0.98 | 0.002 | 0.000 | 0.016 |
| Pput_2359 | 148547580 | pirin domain-containing protein                                    | 0    | 0    | 0.37 | 0.000 | 0.000 | 0.006 |
| Pput_2360 | 148547581 | hypothetical protein Pput_2360                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2361 | 148547582 | hypothetical protein Pput_2361                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2362 | 148547583 | hypothetical protein Pput_2362                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2363 | 148547584 | 2OG-Fe(II) oxygenase                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2364 | 148547585 | curlin-associated protein                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2365 | 148547586 | curlin-associated protein                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2366 | 148547587 | hypothetical protein Pput_2366                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2367 | 148547588 | hypothetical protein Pput_2367                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2368 | 148547589 | hypothetical protein Pput_2368                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2369 | 148547590 | hypothetical protein Pput_2369                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2370 | 148547591 | hypothetical protein Pput_2370                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2371 | 148547592 | Rhs element Vgr protein                                            | 0.08 | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_2372 | 148547593 | hypothetical protein Pput_2372                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2373 | 148547594 | PAP2 (acid phosphatase) superfamily protein-like protein           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2374 | 148547595 | putative phosphohistidine phosphatase, SixA                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2375 | 148547596 | gluconate 2-dehydrogenase acceptor subunit                         | 0.83 | 0    | 0    | 0.006 | 0.000 | 0.000 |
| Pput_2376 | 148547597 | gluconate 2-dehydrogenase acceptor subunit                         | 1.12 | 0    | 0    | 0.008 | 0.000 | 0.000 |
| Pput_2377 | 148547598 | gluconate 2-dehydrogenase acceptor subunit                         | 0.38 | 0    | 0    | 0.003 | 0.000 | 0.000 |
| Pput_2378 | 148547599 | regulatory protein, Lacl                                           | 1.44 | 0    | 0.31 | 0.011 | 0.000 | 0.005 |
| Pput_2379 | 148547600 | xylose isomerase domain-containing protein                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2380 | 148547601 | ribokinase-like domain-containing protein                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2381 | 148547602 | major facilitator transporter                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2382 | 148547603 | gluconate 2-dehydrogenase                                          | 3.43 | 0.23 | 0    | 0.026 | 0.010 | 0.000 |
| Pput_2383 | 148547604 | deoxyribonuclease I                                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2384 | 148547605 | hypothetical protein Pput_2384                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2385 | 148547606 | surface antigen (D15)                                              | 0.2  | 0.04 | 0.17 | 0.002 | 0.002 | 0.003 |
| Pput_2386 | 148547607 | two component transcriptional regulator                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2387 | 148547608 | integral membrane sensor signal transduction histidine kinase      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2388 | 148547609 | aldo/keto reductase                                                | 0.21 | 0.21 | 0.21 | 0.002 | 0.009 | 0.003 |
| Pput_2389 | 148547610 | LysR family transcriptional regulator                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2390 | 148547611 | major facilitator transporter                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2391 | 148547612 | alpha/beta fold family hydrolase-like protein                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2392 | 148547613 | LysR family transcriptional regulator                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2393 | 148547614 | acetolactate synthase                                              | 0    | 0    | 0.93 | 0.000 | 0.000 | 0.015 |
| Pput_2394 | 148547615 | putative GAF sensor protein                                        | 0.08 | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_2395 | 148547616 | hypothetical protein Pput_2395                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2396 | 148547617 | AsnC family transcriptional regulator                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2397 | 148547618 | hypothetical protein Pput_2397                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2398 | 148547619 | MscS mechanosensitive ion channel                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2399 | 148547620 | MarR family transcriptional regulator                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2400 | 148547621 | p-hydroxycinnamoyl CoA hydratase/lyase                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2401 | 148547622 | aldehyde dehydrogenase                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2402 | 148547623 | feruloyl-CoA synthase                                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2403 | 148547624 | acetyl-CoA acetyltransferase                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2404 | 148547625 | acyl-CoA dehydrogenase domain-containing protein                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2405 | 148547626 | hypothetical protein Pput_2405                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2406 | 148547627 | sulfatase                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2407 | 148547628 | hypothetical protein Pput_2407                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2408 | 148547629 | putative 3-hydroxyphenylpropionic transporter MhpT                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2409 | 148547630 | diguanylate cyclase                                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2410 | 148547631 | TonB-dependent receptor                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2411 | 148547632 | hypothetical protein Pput_2411                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2412 | 148547633 | TonB-dependent siderophore receptor                                | 0.51 | 0.15 | 0    | 0.004 | 0.007 | 0.000 |
| Pput_2413 | 148547634 | hypothetical protein Pput_2413                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2414 | 148547635 | LysR family transcriptional regulator                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2415 | 148547636 | glyoxalase/bleomycin resistance protein/dioxygenase                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2416 | 148547637 | sodium:dicarboxylate symporter                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2418 | 148547638 | hypothetical protein Pput_2418                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2419 | 148547639 | TonB-dependent siderophore receptor                                | 0.1  | 0.05 | 0    | 0.001 | 0.002 | 0.000 |
| Pput_2420 | 148547640 | putative GTP cyclohydrolase                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2421 | 148547641 | Bcr/CfiA subfamily drug resistance transporter                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2422 | 148547642 | 3-oxoacyl-(acyl carrier protein) synthase II                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2423 | 148547643 | acriflavin resistance protein                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2424 | 148547644 | RND family efflux transporter MFP subunit                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2425 | 148547645 | TetR family transcriptional regulator                              | 1.03 | 0    | 0.7  | 0.008 | 0.000 | 0.011 |
| Pput_2426 | 148547646 | RND efflux system outer membrane lipoprotein                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2427 | 148547647 | short chain dehydrogenase                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2428 | 148547648 | hypothetical protein Pput_2428                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2429 | 148547649 | alcohol dehydrogenase                                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2430 | 148547650 | hypothetical protein Pput_2430                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2431 | 148547651 | CinA domain-containing protein                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2432 | 148547652 | hypothetical protein Pput_2432                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2433 | 148547653 | aldehyde oxidase and xanthine dehydrogenase, molybdopterin binding | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2434 | 148547654 | molybdopterin dehydrogenase, FAD-binding                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2435 | 148547655 | 2Fe-2S iron-sulfur cluster binding domain-containing protein       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2436 | 148547656 | thiamine pyrophosphate protein                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |

|           |           |                                                         |       |      |       |       |       |       |
|-----------|-----------|---------------------------------------------------------|-------|------|-------|-------|-------|-------|
| Pput_2437 | 148547657 | double-stranded beta helix domain-containing protein    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2438 | 148547658 | hypothetical protein Pput_2438                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2439 | 148547659 | hypothetical protein Pput_2439                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2440 | 148547660 | integral membrane protein TerC                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2442 | 148547661 | peptidyl-tRNA hydrolase domain protein                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2443 | 148547662 | hypothetical protein Pput_2443                          | 21.09 | 3.51 | 2.02  | 0.160 | 0.154 | 0.032 |
| Pput_2444 | 148547663 | extracellular solute-binding protein                    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2445 | 148547664 | putrescine transporter                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2447 | 148547665 | protein of unknown function DUF395, YeeE/YedE           | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2448 | 148547666 | protein of unknown function DUF395, YeeE/YedE           | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2449 | 148547667 | sodium/hydrogen exchanger                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2450 | 148547668 | phosphoribosyltransferase                               | 0     | 0    | 1.14  | 0.000 | 0.000 | 0.018 |
| Pput_2451 | 148547669 | UspA domain-containing protein                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2453 | 148547670 | UspA domain-containing protein                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2454 | 148547671 | heavy metal translocating P-type ATPase                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2455 | 148547672 | hypothetical protein Pput_2455                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2456 | 148547673 | transport-associated                                    | 0.35  | 0    | 2.14  | 0.003 | 0.000 | 0.034 |
| Pput_2457 | 148547674 | ATP-dependent metalloprotease FtsH                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2458 | 148547675 | Ion transport 2 domain-containing protein               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2459 | 148547676 | putative phosphoketolase                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2460 | 148547677 | heat shock protein Hsp20                                | 15.91 | 5.11 | 15.81 | 0.121 | 0.224 | 0.253 |
| Pput_2461 | 148547678 | hypothetical protein Pput_2461                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2462 | 148547679 | CRP/FNR family transcriptional regulator                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2463 | 148547680 | GCN5-related N-acetyltransferase                        | 1.96  | 0.39 | 1.32  | 0.015 | 0.017 | 0.021 |
| Pput_2464 | 148547681 | erythromycin esterase                                   | 0     | 0    | 0.23  | 0.000 | 0.000 | 0.004 |
| Pput_2465 | 148547682 | phosphoribosyltransferase                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2466 | 148547683 | hypothetical protein Pput_2466                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2467 | 148547684 | beta-lactamase domain-containing protein                | 0.15  | 0    | 0.92  | 0.001 | 0.000 | 0.015 |
| Pput_2468 | 148547685 | UspA domain-containing protein                          | 0.37  | 0    | 1.6   | 0.003 | 0.000 | 0.026 |
| Pput_2469 | 148547686 | GCN5-related N-acetyltransferase                        | 0.58  | 0.18 | 1.54  | 0.004 | 0.008 | 0.025 |
| Pput_2470 | 148547687 | UspA domain-containing protein                          | 1.36  | 0.51 | 3.64  | 0.010 | 0.022 | 0.058 |
| Pput_2471 | 148547688 | CRP/FNR family transcriptional regulator                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2472 | 148547689 | membrane protein-like protein                           | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2473 | 148547690 | PaaX family transcriptional regulator                   | 0.21  | 0    | 0.92  | 0.002 | 0.000 | 0.015 |
| Pput_2474 | 148547691 | phenylacetic acid degradation protein PaaY              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2475 | 148547692 | enoyl-CoA hydratase-isomerase                           | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2476 | 148547693 | enoyl-CoA hydratase                                     | 0     | 0.26 | 0.54  | 0.000 | 0.011 | 0.009 |
| Pput_2477 | 148547694 | 3-hydroxy-acyl-CoA dehydrogenase                        | 0     | 0.07 | 0.14  | 0.000 | 0.003 | 0.002 |
| Pput_2478 | 148547695 | phenylacetic acid degradation protein PaaD              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2479 | 148547696 | beta-ketoadipyl CoA thiolase                            | 0     | 1.32 | 1.69  | 0.000 | 0.058 | 0.027 |
| Pput_2480 | 148547697 | phenylacetate-CoA ligase                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2481 | 148547698 | phenylacetate-CoA oxygenase subunit PaaA                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2482 | 148547699 | phenylacetate-CoA oxygenase subunit PaaB                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2483 | 148547700 | phenylacetate-CoA oxygenase, PaaI subunit               | 0     | 0.42 | 0     | 0.000 | 0.018 | 0.000 |
| Pput_2484 | 148547701 | phenylacetate-CoA oxygenase, PaaJ subunit               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2485 | 148547702 | phenylacetate-CoA oxygenase/reductase, PaaK subunit     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2486 | 148547703 | hypothetical protein Pput_2486                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2487 | 148547704 | acetate permease                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2488 | 148547705 | outer membrane porin                                    | 0     | 0.17 | 0.27  | 0.000 | 0.007 | 0.004 |
| Pput_2489 | 148547706 | bifunctional aldehyde dehydrogenase/enoyl-CoA hydratase | 0.28  | 1.1  | 1.32  | 0.002 | 0.048 | 0.021 |
| Pput_2490 | 148547707 | hypothetical protein Pput_2490                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2491 | 148547708 | hypothetical protein Pput_2491                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2492 | 148547709 | NUDIX hydrolase                                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2493 | 148547710 | peptidase S14, ClpP                                     | 0.6   | 0    | 0.79  | 0.005 | 0.000 | 0.013 |
| Pput_2494 | 148547711 | hypothetical protein Pput_2494                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2495 | 148547712 | endonuclease/exonuclease/phosphatase                    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2496 | 148547713 | cardiolipin synthase 2                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2497 | 148547714 | hypothetical protein Pput_2497                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2498 | 148547715 | hypothetical protein Pput_2498                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2499 | 148547716 | metallothionein family protein                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2500 | 148547717 | hypothetical protein Pput_2500                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2501 | 148547718 | ATP-dependent DNA ligase                                | 0.16  | 0    | 0     | 0.001 | 0.000 | 0.000 |
| Pput_2502 | 148547719 | hypothetical protein Pput_2502                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2503 | 148547720 | LmbE family protein                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2504 | 148547721 | methyltransferase type 12                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2505 | 148547722 | glycosyl transferase family protein                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2506 | 148547723 | Ku family containing protein                            | 0.71  | 0    | 0     | 0.005 | 0.000 | 0.000 |
| Pput_2507 | 148547724 | nucleoside phosphorylase-like protein                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2508 | 148547725 | carboxylate-amine ligase                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2509 | 148547726 | methyltransferase small                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2510 | 148547727 | hypothetical protein Pput_2510                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2511 | 148547728 | hypothetical protein Pput_2511                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2512 | 148547729 | major facilitator transporter                           | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2513 | 148547730 | aldo/keto reductase                                     | 0     | 0    | 0.63  | 0.000 | 0.000 | 0.010 |
| Pput_2514 | 148547731 | Dyp-type peroxidase family protein                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2515 | 148547732 | bile acid:sodium symporter                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2516 | 148547733 | carotene hydroxylase                                    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2517 | 148547734 | MgtC/SapB transporter                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2518 | 148547735 | GCN5-related N-acetyltransferase                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2519 | 148547736 | diguanylate cyclase                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2520 | 148547737 | outer membrane protein-like protein                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2521 | 148547738 | hypothetical protein Pput_2521                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2522 | 148547739 | hypothetical protein Pput_2522                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2523 | 148547740 | hypothetical protein Pput_2523                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2524 | 148547741 | YheO domain-containing protein                          | 0     | 0    | 0.36  | 0.000 | 0.000 | 0.006 |
| Pput_2525 | 148547742 | hypothetical protein Pput_2525                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2526 | 148547743 | ornithine cyclodeaminase                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2527 | 148547744 | N-isopropylammelide isopropylaminohydrolase             | 0.41  | 0.08 | 0.77  | 0.003 | 0.004 | 0.012 |
| Pput_2528 | 148547745 | PucR family transcriptional regulator                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |

|           |           |                                                              |      |      |      |       |       |       |
|-----------|-----------|--------------------------------------------------------------|------|------|------|-------|-------|-------|
| Pput_2529 | 148547746 | cytosine permease                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2530 | 148547747 | TenA family transcription regulator                          | 0    | 0    | 0.33 | 0.000 | 0.000 | 0.005 |
| Pput_2531 | 148547748 | TenA family transcription regulator                          | 0.44 | 0.14 | 0.92 | 0.003 | 0.006 | 0.015 |
| Pput_2532 | 148547749 | multicopper oxidase, type 2                                  | 0    | 0.03 | 0    | 0.000 | 0.001 | 0.000 |
| Pput_2533 | 148547750 | electron transport protein SCO1/SenC                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2534 | 148547751 | diguanylate cyclase/phosphodiesterase                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2535 | 148547752 | phage integrase family protein                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2536 | 148547753 | SMP-30/gluconolactonase/LRE domain-containing protein        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2537 | 148547754 | LysR family transcriptional regulator                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2538 | 148547755 | glycerate kinase                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2539 | 148547756 | transcriptional regulator, CdaR                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2540 | 148547757 | major facilitator transporter                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2541 | 148547758 | FAD-dependent pyridine nucleotide-disulphide oxidoreductase  | 0    | 0    | 0.44 | 0.000 | 0.000 | 0.007 |
| Pput_2542 | 148547759 | aldo/keto reductase                                          | 0.79 | 0.47 | 2.7  | 0.006 | 0.021 | 0.043 |
| Pput_2543 | 148547760 | N-ethylmaleimide reductase                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2544 | 148547761 | luciferase family protein                                    | 0    | 0.35 | 0    | 0.000 | 0.015 | 0.000 |
| Pput_2545 | 148547762 | LysR family transcriptional regulator                        | 0    | 0    | 0.22 | 0.000 | 0.000 | 0.004 |
| Pput_2546 | 148547763 | membrane-bound metal-dependent hydrolase                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2547 | 148547764 | outer membrane porin                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2548 | 148547765 | benzoate transporter                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2549 | 148547766 | catechol 1,2-dioxygenase                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2550 | 148547767 | major facilitator transporter                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2551 | 148547768 | 1,6-dihydroxycyclohexa-2,4-diene-1-carboxylate dehydrogenase | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2552 | 148547769 | oxidoreductase FAD/NAD(P)-binding subunit                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2553 | 148547770 | benzoate 1,2-dioxygenase                                     | 0.84 | 0    | 0    | 0.006 | 0.000 | 0.000 |
| Pput_2554 | 148547771 | Rieske (2Fe-2S) domain-containing protein                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2555 | 148547772 | AraC family transcriptional regulator                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2556 | 148547773 | hypothetical protein Pput_2556                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2557 | 148547774 | histidinol-phosphate phosphatase, putative                   | 0.29 | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_2558 | 148547775 | UspA domain-containing protein                               | 0.72 | 0.54 | 1.94 | 0.005 | 0.024 | 0.031 |
| Pput_2559 | 148547776 | TonB-dependent siderophore receptor                          | 0.1  | 0.1  | 0    | 0.001 | 0.004 | 0.000 |
| Pput_2560 | 148547777 | hypothetical protein Pput_2560                               | 0.67 | 0.77 | 1.34 | 0.005 | 0.034 | 0.021 |
| Pput_2561 | 148547778 | hypothetical protein Pput_2561                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2562 | 148547779 | LysR family transcriptional regulator                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2563 | 148547780 | aldehyde dehydrogenase                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2564 | 148547781 | hypothetical protein Pput_2564                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2565 | 148547782 | helix-turn-helix domain-containing protein                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2566 | 148547783 | glutamate--putrescine ligase                                 | 0    | 0.07 | 0    | 0.000 | 0.003 | 0.000 |
| Pput_2567 | 148547784 | extracellular solute-binding protein                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2568 | 148547785 | FAD dependent oxidoreductase                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2569 | 148547786 | hypothetical protein Pput_2569                               | 2.67 | 0.78 | 2.66 | 0.020 | 0.034 | 0.043 |
| Pput_2570 | 148547787 | L-serine dehydratase 1                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2571 | 148547788 | LysR family transcriptional regulator                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2572 | 148547789 | undecaprenyl-phosphate galactose phosphotransferase          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2573 | 148547790 | WecB/TagA/CpsF family glycosyl transferase                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2574 | 148547791 | glycosyl transferase family protein                          | 0.36 | 0.36 | 0.36 | 0.003 | 0.016 | 0.006 |
| Pput_2575 | 148547792 | glycosyl transferase, group 1                                | 0.75 | 0.26 | 0.6  | 0.006 | 0.011 | 0.010 |
| Pput_2576 | 148547793 | hypothetical protein Pput_2576                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2577 | 148547794 | glycosyl transferase family protein                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2578 | 148547795 | Serine acetyltransferase-like protein                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2579 | 148547796 | glycosyl transferase family protein                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2580 | 148547797 | hexapptide repeat-containing transferase                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2581 | 148547798 | GMC oxidoreductase                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2582 | 148547799 | hypothetical protein Pput_2582                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2583 | 148547800 | polysaccharide biosynthesis protein                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2584 | 148547801 | hypothetical protein Pput_2584                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2585 | 148547802 | hypothetical protein Pput_2585                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2586 | 148547803 | UDP-glucose 4-epimerase                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2587 | 148547804 | non-specific protein-tyrosine kinase                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2588 | 148547805 | lipopolysaccharide biosynthesis protein                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2589 | 148547806 | hypothetical protein Pput_2589                               | 0    | 0.85 | 1.3  | 0.000 | 0.037 | 0.021 |
| Pput_2590 | 148547807 | polysaccharide export protein                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2591 | 148547808 | XRE family transcriptional regulator                         | 0.42 | 0    | 0    | 0.003 | 0.000 | 0.000 |
| Pput_2592 | 148547809 | short chain fatty acid transporter                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2593 | 148547810 | 3-oxoacid CoA-transferase, B subunit                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2594 | 148547811 | 3-oxoacid CoA-transferase, A subunit                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2595 | 148547812 | LysR family transcriptional regulator                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2596 | 148547813 | aldo/keto reductase                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2597 | 148547814 | transposase, IS111A/IS1328/IS1533                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2598 | 148547815 | error-prone DNA polymerase                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2599 | 148547816 | hypothetical protein Pput_2599                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2600 | 148547817 | hypothetical protein Pput_2600                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2601 | 148547818 | LexA repressor                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2602 | 148547819 | HAD family hydrolase                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2603 | 148547820 | major facilitator transporter                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2604 | 148547821 | NIPSNAP family protein                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2605 | 148547822 | putative succinate dehydrogenase                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2606 | 148547823 | short-chain dehydrogenase/reductase SDR                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2607 | 148547824 | helix-turn-helix domain-containing protein                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2608 | 148547825 | regulatory protein, IclR                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2609 | 148547826 | amidase                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2610 | 148547827 | major facilitator transporter                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2611 | 148547828 | amidohydrolase                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2612 | 148547829 | YD repeat-containing protein                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2613 | 148547830 | YD repeat-containing protein                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2614 | 148547831 | hypothetical protein Pput_2614                               | 1.47 | 0.35 | 0.57 | 0.011 | 0.015 | 0.009 |
| Pput_2615 | 148547832 | YD repeat-containing protein                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2616 | 148547833 | hypothetical protein Pput_2616                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2617 | 148547834 | hypothetical protein Pput_2617                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |

|           |           |                                                                      |      |      |      |       |       |       |
|-----------|-----------|----------------------------------------------------------------------|------|------|------|-------|-------|-------|
| Pput_2618 | 148547835 | Rhs element Vgr protein                                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2620 | 148547836 | hypothetical protein Pput_2620                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2621 | 148547837 | hypothetical protein Pput_2621                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2622 | 148547838 | hypothetical protein Pput_2622                                       | 0.6  | 0    | 0    | 0.005 | 0.000 | 0.000 |
| Pput_2623 | 148547839 | hypothetical protein Pput_2623                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2624 | 148547840 | GPW/gp25 family protein                                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2625 | 148547841 | hypothetical protein Pput_2625                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2626 | 148547842 | hypothetical protein Pput_2626                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2627 | 148547843 | ATPase                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2628 | 148547844 | hypothetical protein Pput_2628                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2629 | 148547845 | hypothetical protein Pput_2629                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2630 | 148547846 | hypothetical protein Pput_2630                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2631 | 148547847 | ImcF domain-containing protein                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2632 | 148547848 | hypothetical protein Pput_2632                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2633 | 148547849 | OmpA/MotB domain-containing protein                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2634 | 148547850 | hypothetical protein Pput_2634                                       | 9.46 | 0.76 | 0    | 0.072 | 0.033 | 0.000 |
| Pput_2635 | 148547851 | ImpA domain-containing protein                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2636 | 148547852 | excinuclease ABC, A subunit                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2637 | 148547853 | major facilitator transporter                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2638 | 148547854 | secretion protein HlyD family protein                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2639 | 148547855 | hypothetical protein Pput_2639                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2640 | 148547856 | auxin efflux carrier                                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2641 | 148547857 | major facilitator transporter                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2642 | 148547858 | hypothetical protein Pput_2642                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2643 | 148547859 | PEBP family protein                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2644 | 148547860 | phospho-2-dehydro-3-deoxyheptonate aldolase                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2645 | 148547861 | PpiC-type peptidyl-prolyl cis-trans isomerase                        | 2.13 | 0    | 0    | 0.016 | 0.000 | 0.000 |
| Pput_2646 | 148547862 | extracellular solute-binding protein                                 | 0    | 0    | 0.15 | 0.000 | 0.000 | 0.002 |
| Pput_2647 | 148547863 | binding-protein-dependent transport systems inner membrane component | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2648 | 148547864 | binding-protein-dependent transport systems inner membrane component | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2649 | 148547865 | sigma-54 dependent transcriptional regulator                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2650 | 148547866 | citrate transporter                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2651 | 148547867 | 3-hydroxybutyrate dehydrogenase                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2652 | 148547868 | ecotin                                                               | 2.53 | 0    | 0    | 0.019 | 0.000 | 0.000 |
| Pput_2653 | 148547869 | acetoacetyl-CoA synthetase                                           | 0.1  | 0.1  | 0.2  | 0.001 | 0.004 | 0.003 |
| Pput_2654 | 148547870 | PpiC-type peptidyl-prolyl cis-trans isomerase                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2655 | 148547871 | outer membrane autotransporter                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2656 | 148547872 | lysine exporter protein LysE/YggA                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2657 | 148547873 | AraC family transcriptional regulator                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2658 | 148547874 | lysine exporter protein LysE/YggA                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2659 | 148547875 | metallophosphoesterase                                               | 0    | 0.3  | 0    | 0.000 | 0.013 | 0.000 |
| Pput_2660 | 148547876 | Nitrilase/cyanide hydratase and apolipoprotein N-acyltransferase     | 0    | 0    | 0.31 | 0.000 | 0.000 | 0.005 |
| Pput_2661 | 148547877 | hypothetical protein Pput_2661                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2662 | 148547878 | methylated-DNA--protein-cysteine methyltransferase                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2663 | 148547879 | hypothetical protein Pput_2663                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2664 | 148547880 | acyl-CoA synthetase                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2665 | 148547881 | acyl-CoA dehydrogenase domain-containing protein                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2666 | 148547882 | RND efflux transporter                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2667 | 148547883 | hypothetical protein Pput_2667                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2668 | 148547884 | hypothetical protein Pput_2668                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2669 | 148547885 | hypothetical protein Pput_2669                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2670 | 148547886 | hypothetical protein Pput_2670                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2671 | 148547887 | helix-turn-helix domain-containing protein                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2672 | 148547888 | Rieske (2Fe-2S) domain-containing protein                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2673 | 148547889 | DSBA oxidoreductase                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2674 | 148547890 | major facilitator transporter                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2675 | 148547891 | hypothetical protein Pput_2675                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2676 | 148547892 | taurine dioxygenase                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2677 | 148547893 | alcohol dehydrogenase                                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2678 | 148547894 | hypothetical protein Pput_2678                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2679 | 148547895 | hypothetical protein Pput_2679                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2680 | 148547896 | hypothetical protein Pput_2680                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2681 | 148547897 | hypothetical protein Pput_2681                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2682 | 148547898 | hypothetical protein Pput_2682                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2683 | 148547899 | hypothetical protein Pput_2683                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2684 | 148547900 | hypothetical protein Pput_2684                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2685 | 148547901 | hypothetical protein Pput_2685                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2686 | 148547902 | RNA polymerase sigma factor                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2687 | 148547903 | hypothetical protein Pput_2687                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2688 | 148547904 | hypothetical protein Pput_2688                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2689 | 148547905 | major facilitator transporter                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2690 | 148547906 | 3-dehydroquinate dehydratase                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2691 | 148547907 | shikimate 5-dehydrogenase                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2692 | 148547908 | L-carnitine dehydratase/bile acid-inducible protein F                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2693 | 148547909 | dehydratase                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2694 | 148547910 | hypothetical protein Pput_2694                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2695 | 148547911 | 2-dehydropanoate 2-reductase                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2696 | 148547912 | LysR family transcriptional regulator                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2697 | 148547913 | hypothetical protein Pput_2697                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2698 | 148547914 | short-chain dehydrogenase/reductase SDR                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2699 | 148547915 | NADH:flavin oxidoreductase/NADH oxidase                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2700 | 148547916 | ThiJ/PfpI domain-containing protein                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2701 | 148547917 | hypothetical protein Pput_2701                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2702 | 148547918 | MerR family transcriptional regulator                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2703 | 148547919 | short-chain dehydrogenase/reductase SDR                              | 0    | 0.29 | 1.41 | 0.000 | 0.013 | 0.023 |
| Pput_2704 | 148547920 | alcohol dehydrogenase                                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2705 | 148547921 | HxlR family transcriptional regulator                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2706 | 148547922 | LysR family transcriptional regulator                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2707 | 148547923 | NAD-dependent epimerase/dehydratase                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |

|           |           |                                                                         |       |      |      |       |       |       |
|-----------|-----------|-------------------------------------------------------------------------|-------|------|------|-------|-------|-------|
| Pput_2708 | 148547924 | hypothetical protein Pput_2708                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2709 | 148547925 | hypothetical protein Pput_2709                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2710 | 148547926 | alcohol dehydrogenase                                                   | 0     | 0.11 | 0.59 | 0.000 | 0.005 | 0.009 |
| Pput_2711 | 148547927 | LysR family transcriptional regulator                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2712 | 148547928 | helix-turn-helix domain-containing protein                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2713 | 148547929 | uncharacterized peroxidase-related enzyme                               | 0     | 0    | 0.96 | 0.000 | 0.000 | 0.015 |
| Pput_2714 | 148547930 | glutaredoxin 3                                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2715 | 148547931 | GCN5-related N-acetyltransferase                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2716 | 148547932 | RimK domain-containing protein ATP-grasp                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2717 | 148547933 | Mg2+ transporter protein, CorA family protein                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2718 | 148547934 | antibiotic biosynthesis monooxygenase                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2719 | 148547935 | zinc-binding alcohol dehydrogenase                                      | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2720 | 148547936 | LysR family transcriptional regulator                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2721 | 148547937 | TetR family transcriptional regulator                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2722 | 148547938 | hypothetical protein Pput_2722                                          | 0.44  | 0    | 0    | 0.003 | 0.000 | 0.000 |
| Pput_2723 | 148547939 | helix-turn-helix domain-containing protein                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2724 | 148547940 | phenylacetaldoxime dehydratase                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2725 | 148547941 | meta-pathway phenol degradation-like protein                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2726 | 148547942 | globin                                                                  | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2727 | 148547943 | amidase                                                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2728 | 148547944 | nitrile hydratase, alpha subunit                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2729 | 148547945 | nitrile hydratase                                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2730 | 148547946 | cobalamin synthesis protein, P47K                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2731 | 148547947 | methyl-accepting chemotaxis sensory transducer                          | 0     | 0.16 | 0    | 0.000 | 0.007 | 0.000 |
| Pput_2732 | 148547948 | hypothetical protein Pput_2732                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2733 | 148547949 | GntR family transcriptional regulator                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2734 | 148547950 | integral membrane sensor signal transduction histidine kinase           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2735 | 148547951 | two component transcriptional regulator                                 | 0     | 0.34 | 0    | 0.000 | 0.015 | 0.000 |
| Pput_2736 | 148547952 | hypothetical protein Pput_2736                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2737 | 148547953 | hypothetical protein Pput_2737                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2738 | 148547954 | oxidoreductase FAD/NAD(P)-binding subunit                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2739 | 148547955 | ApbE family lipoprotein                                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2740 | 148547956 | hypothetical protein Pput_2740                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2741 | 148547957 | GCN5-related N-acetyltransferase                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2742 | 148547958 | response regulator receiver sensor signal transduction histidine kinase | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2743 | 148547959 | integral membrane sensor signal transduction histidine kinase           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2744 | 148547960 | cytochrome-c peroxidase                                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2745 | 148547961 | response regulator receiver protein                                     | 0     | 0.07 | 0    | 0.000 | 0.003 | 0.000 |
| Pput_2746 | 148547962 | hypothetical protein Pput_2746                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2747 | 148547963 | hypothetical protein Pput_2747                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2748 | 148547964 | hypothetical protein Pput_2748                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2749 | 148547965 | helix-turn-helix, type 11 domain-containing protein                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2750 | 148547966 | hypothetical protein Pput_2750                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2751 | 148547967 | diaminopimelate epimerase                                               | 0     | 0    | 0.6  | 0.000 | 0.000 | 0.010 |
| Pput_2752 | 148547968 | hypothetical protein Pput_2752                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2753 | 148547969 | OsmC family protein                                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2755 | 148547970 | ABC transporter related                                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2756 | 148547971 | major facilitator superfamily transporter                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2757 | 148547972 | hypothetical protein Pput_2757                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2758 | 148547973 | putative glutathione S-transferase YghU                                 | 1.11  | 0.26 | 0.93 | 0.008 | 0.011 | 0.015 |
| Pput_2760 | 148547974 | amidase                                                                 | 0.33  | 0.13 | 0    | 0.002 | 0.006 | 0.000 |
| Pput_2761 | 148547975 | YheO domain-containing protein                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2762 | 148547976 | pyridoxal-5'-phosphate-dependent enzyme, beta subunit                   | 0.25  | 0    | 0.5  | 0.002 | 0.000 | 0.008 |
| Pput_2763 | 148547977 | carboxynorspermidine decarboxylase                                      | 0.18  | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_2764 | 148547978 | saccharopine dehydrogenase                                              | 2.26  | 0    | 0.17 | 0.017 | 0.000 | 0.003 |
| Pput_2765 | 148547979 | methyltransferase type 12                                               | 0.94  | 0.21 | 1.17 | 0.007 | 0.009 | 0.019 |
| Pput_2766 | 148547980 | UDP-glucose 6-dehydrogenase                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2767 | 148547981 | malate:quinone oxidoreductase                                           | 0.41  | 0    | 0.13 | 0.003 | 0.000 | 0.002 |
| Pput_2768 | 148547982 | radical SAM domain-containing protein                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2769 | 148547983 | hypothetical protein Pput_2769                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2770 | 148547984 | urea amidolyase related protein                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2771 | 148547985 | allophanate hydrolase subunit 1                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2772 | 148547986 | hypothetical protein Pput_2772                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2773 | 148547987 | LysR family transcriptional regulator                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2774 | 148547988 | trehalose synthase                                                      | 0.1   | 0.1  | 0.1  | 0.001 | 0.004 | 0.002 |
| Pput_2775 | 148547989 | riboflavin synthase subunit alpha                                       | 0.53  | 0    | 0.53 | 0.004 | 0.000 | 0.008 |
| Pput_2776 | 148547990 | hypothetical protein Pput_2776                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2777 | 148547991 | proline/glycine betaine transporter                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2778 | 148547992 | delta-aminolevulinic acid dehydratase                                   | 3.96  | 1.48 | 1.18 | 0.030 | 0.065 | 0.019 |
| Pput_2779 | 148547993 | protein of unknown function RIO1                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2780 | 148547994 | GABA permease                                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2781 | 148547995 | hydroxyglutarate oxidase                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2782 | 148547996 | hypothetical protein Pput_2782                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2783 | 148547997 | DNA-binding transcriptional regulator CsiR                              | 0.27  | 0    | 0.42 | 0.002 | 0.000 | 0.007 |
| Pput_2784 | 148547998 | two component transcriptional regulator                                 | 0.76  | 0.76 | 0    | 0.006 | 0.033 | 0.000 |
| Pput_2785 | 148547999 | integral membrane sensor signal transduction histidine kinase           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2786 | 148548000 | cysteinyl-tRNA synthetase                                               | 1.07  | 0.15 | 1.44 | 0.008 | 0.007 | 0.023 |
| Pput_2787 | 148548001 | glutaminyl-tRNA synthetase                                              | 1.26  | 0.47 | 0.86 | 0.010 | 0.021 | 0.014 |
| Pput_2788 | 148548002 | peptidyl-prolyl cis-trans isomerase, cyclophilin type                   | 16.34 | 1.25 | 0.54 | 0.124 | 0.055 | 0.009 |
| Pput_2789 | 148548003 | UDP-2,3-diacylglycosamine hydrolase                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2790 | 148548004 | peptidase S45, penicillin amidase                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2791 | 148548005 | hypothetical protein Pput_2791                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2792 | 148548006 | hypothetical protein Pput_2792                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2793 | 148548007 | hypothetical protein Pput_2793                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2794 | 148548008 | hypothetical protein Pput_2794                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2795 | 148548009 | hypothetical protein Pput_2795                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2796 | 148548010 | hypothetical protein Pput_2796                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2797 | 148548011 | hypothetical protein Pput_2797                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_2798 | 148548012 | surface antigen (D15)                                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |



|           |           |                                                                 |      |        |        |       |        |       |
|-----------|-----------|-----------------------------------------------------------------|------|--------|--------|-------|--------|-------|
| Pput_2799 | 148548013 | GCN5-related N-acetyltransferase                                | 0.48 | 0      | 0.33   | 0.004 | 0.000  | 0.005 |
| Pput_2800 | 148548014 | exonuclease III                                                 | 1.5  | 0.26   | 0.67   | 0.011 | 0.011  | 0.011 |
| Pput_2801 | 148548015 | putative transmembrane anti-sigma factor                        | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2802 | 148548016 | ECF subfamily RNA polymerase sigma-24 factor                    | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2803 | 148548017 | catalase domain-containing protein                              | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2804 | 148548018 | cytochrome B561                                                 | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2805 | 148548019 | major facilitator transporter                                   | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2806 | 148548020 | XRE family transcriptional regulator                            | 0    | 0.19   | 0      | 0.000 | 0.008  | 0.000 |
| Pput_2807 | 148548021 | hypothetical protein Pput_2807                                  | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2808 | 148548022 | DSBA oxidoreductase                                             | 0    | 0.17   | 0.61   | 0.000 | 0.007  | 0.010 |
| Pput_2809 | 148548023 | short-chain dehydrogenase/reductase SDR                         | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2810 | 148548024 | TetR family transcriptional regulator                           | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2811 | 148548025 | hypothetical protein Pput_2811                                  | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2812 | 148548026 | bile acid:sodium symporter                                      | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2813 | 148548027 | beta-lactamase                                                  | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2814 | 148548028 | hypothetical protein Pput_2814                                  | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2815 | 148548029 | hypothetical protein Pput_2815                                  | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2816 | 148548030 | hypothetical protein Pput_2816                                  | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2817 | 148548031 | hypothetical protein Pput_2817                                  | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2818 | 148548032 | aldolase II superfamily protein                                 | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2819 | 148548033 | spermidine/putrescine-binding periplasmic protein-like protein  | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2820 | 148548034 | NADH:flavin oxidoreductase/NADH oxidase                         | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2821 | 148548035 | XRE family transcriptional regulator                            | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2822 | 148548036 | FAD-dependent pyridine nucleotide-disulphide oxidoreductase     | 0    | 0.36   | 0      | 0.000 | 0.016  | 0.000 |
| Pput_2823 | 148548037 | azoreductase                                                    | 0    | 0.64   | 2.29   | 0.000 | 0.028  | 0.037 |
| Pput_2824 | 148548038 | LysR family transcriptional regulator                           | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2825 | 148548039 | hypothetical protein Pput_2825                                  | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2826 | 148548040 | hypothetical protein Pput_2826                                  | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2827 | 148548041 | undecaprenyl pyrophosphate phosphatase                          | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2828 | 148548042 | methyl-accepting chemotaxis sensory transducer                  | 0.25 | 0.13   | 0.12   | 0.002 | 0.006  | 0.002 |
| Pput_2829 | 148548043 | nicotinamide mononucleotide transporter PnuC                    | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2830 | 148548044 | hypothetical protein Pput_2830                                  | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2831 | 148548045 | hypothetical protein Pput_2831                                  | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2832 | 148548046 | hypothetical protein Pput_2832                                  | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2833 | 148548047 | hypothetical protein Pput_2833                                  | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2834 | 148548048 | peptidase C39, bacteriocin processing                           | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2835 | 148548049 | hypothetical protein Pput_2835                                  | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2836 | 148548050 | hypothetical protein Pput_2836                                  | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2837 | 148548051 | sulfatase                                                       | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2838 | 148548052 | protein of unknown function DUF899, thioredoxin family protein  | 3.34 | 0.46   | 1.87   | 0.025 | 0.020  | 0.030 |
| Pput_2839 | 148548053 | phosphatidylinositol-specific phospholipase C, X region         | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2840 | 148548054 | urease accessory protein UreG                                   | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2841 | 148548055 | urease accessory protein UreF                                   | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2842 | 148548056 | HupE/UreJ protein                                               | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2843 | 148548057 | urease accessory protein UreE                                   | 0    | 0      | 0.99   | 0.000 | 0.000  | 0.016 |
| Pput_2844 | 148548058 | urease subunit alpha                                            | 0.27 | 0      | 0.8    | 0.002 | 0.000  | 0.013 |
| Pput_2845 | 148548059 | urease subunit beta                                             | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2846 | 148548060 | urease subunit gamma                                            | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2847 | 148548061 | urease accessory protein UreD                                   | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2848 | 148548062 | phage integrase family protein                                  | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2849 | 148548063 | NnrS family protein                                             | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2850 | 148548064 | DEAD_2 domain-containing protein                                | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2851 | 148548065 | VRR-NUC domain-containing protein                               | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2852 | 148548066 | major facilitator transporter                                   | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2853 | 148548067 | fumarylacetoacetate (FAA) hydrolase family protein-like protein | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2854 | 148548068 | malate/L-lactate dehydrogenase                                  | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2855 | 148548069 | Altronate dehydratase                                           | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2856 | 148548070 | LysR family transcriptional regulator                           | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2857 | 148548071 | LysR family transcriptional regulator                           | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2858 | 148548072 | mandelate racemase/muconate lactonizing protein                 | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2859 | 148548073 | major facilitator transporter                                   | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2860 | 148548074 | GntR family transcriptional regulator                           | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2861 | 148548075 | hypothetical protein Pput_2861                                  | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2862 | 148548076 | alcohol dehydrogenase                                           | 0.65 | 0.42   | 1.12   | 0.005 | 0.018  | 0.018 |
| Pput_2863 | 148548077 | LysR family transcriptional regulator                           | 0.22 | 0.54   | 0.78   | 0.002 | 0.024  | 0.012 |
| Pput_2864 | 148548078 | phage integrase family protein                                  | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2866 | 148548079 | regulatory protein, IclR                                        | 0.28 | 0      | 0.42   | 0.002 | 0.000  | 0.007 |
| Pput_2867 | 148548080 | RND family efflux transporter MFP subunit                       | 0    | 0.18   | 2.01   | 0.000 | 0.008  | 0.032 |
| Pput_2868 | 148548081 | hydrophobe/amphiphile efflux-1 (HAE1) family protein            | 0    | 0      | 1.22   | 0.000 | 0.000  | 0.020 |
| Pput_2869 | 148548082 | RND efflux system outer membrane lipoprotein                    | 0    | 0.07   | 0.46   | 0.000 | 0.003  | 0.007 |
| Pput_2870 | 148548083 | hypothetical protein Pput_2870                                  | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2871 | 148548084 | response regulator receiver protein                             | 0    | 0      | 0.52   | 0.000 | 0.000  | 0.008 |
| Pput_2872 | 148548085 | multi-sensor signal transduction histidine kinase               | 0    | 0.07   | 0      | 0.000 | 0.003  | 0.000 |
| Pput_2873 | 148548086 | 4-hydroxy-2-ketovalerate aldolase                               | 0    | 3.02   | 23.08  | 0.000 | 0.132  | 0.369 |
| Pput_2874 | 148548087 | acetaldehyde dehydrogenase                                      | 0.22 | 11.74  | 39.01  | 0.002 | 0.514  | 0.624 |
| Pput_2875 | 148548088 | 4-oxalocrotonate decarboxylase                                  | 0    | 42.37  | 55.06  | 0.000 | 1.855  | 0.880 |
| Pput_2876 | 148548089 | glyoxalase/bleomycin resistance protein/dioxygenase             | 0    | 1.42   | 15.46  | 0.000 | 0.062  | 0.247 |
| Pput_2877 | 148548090 | 2,3-dihydroxy-2,3-dihydrophenylpropionate dehydrogenase         | 0    | 34.73  | 88.91  | 0.000 | 1.521  | 1.421 |
| Pput_2878 | 148548091 | FAD-dependent pyridine nucleotide-disulphide oxidoreductase     | 0    | 7.69   | 42.05  | 0.000 | 0.337  | 0.672 |
| Pput_2879 | 148548092 | Rieske (2Fe-2S) domain-containing protein                       | 0    | 1.32   | 1.5    | 0.000 | 0.058  | 0.024 |
| Pput_2880 | 148548093 | toluene dioxygenase                                             | 0    | 322.57 | 262.33 | 0.000 | 14.123 | 4.193 |
| Pput_2881 | 148548094 | ring hydroxylating dioxygenase, alpha subunit                   | 0    | 13.42  | 69.67  | 0.000 | 0.588  | 1.114 |
| Pput_2882 | 148548095 | alpha/beta hydrolase fold                                       | 0    | 19.4   | 44.82  | 0.000 | 0.849  | 0.716 |
| Pput_2883 | 148548096 | membrane protein involved in aromatic hydrocarbon degradation   | 0    | 0.16   | 0.41   | 0.000 | 0.007  | 0.007 |
| Pput_2884 | 148548097 | LysR family transcriptional regulator                           | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2885 | 148548098 | hypothetical protein Pput_2885                                  | 0    | 0      | 0      | 0.000 | 0.000  | 0.000 |
| Pput_2887 | 148548099 | enoyl-CoA hydratase/isomerase                                   | 0    | 0      | 0.2    | 0.000 | 0.000  | 0.003 |
| Pput_2888 | 148548100 | 4-hydroxy-2-ketovalerate aldolase                               | 0    | 1.8    | 16.35  | 0.000 | 0.079  | 0.261 |
| Pput_2889 | 148548101 | acetaldehyde dehydrogenase                                      | 0    | 6.73   | 26.66  | 0.000 | 0.295  | 0.426 |

|           |           |                                                               |      |      |       |       |       |       |
|-----------|-----------|---------------------------------------------------------------|------|------|-------|-------|-------|-------|
| Pput_2890 | 148548102 | 4-oxalocrotonate decarboxylase                                | 0    | 3.01 | 4.51  | 0.000 | 0.132 | 0.072 |
| Pput_2891 | 148548103 | alpha/beta hydrolase fold                                     | 0    | 7.98 | 20.51 | 0.000 | 0.349 | 0.328 |
| Pput_2892 | 148548104 | TetR family transcriptional regulator                         | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2893 | 148548105 | class II aldolase/adducin family protein                      | 0    | 3.36 | 6.58  | 0.000 | 0.147 | 0.105 |
| Pput_2894 | 148548106 | Rieske (2Fe-2S) domain-containing protein                     | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2895 | 148548107 | short-chain dehydrogenase/reductase SDR                       | 0    | 4.36 | 23.41 | 0.000 | 0.191 | 0.374 |
| Pput_2896 | 148548108 | glyoxalase/bleomycin resistance protein/dioxygenase           | 0    | 2.04 | 6.66  | 0.000 | 0.089 | 0.106 |
| Pput_2897 | 148548109 | aromatic-ring-hydroxylating dioxygenase, beta subunit         | 0    | 5.4  | 24.74 | 0.000 | 0.236 | 0.395 |
| Pput_2898 | 148548110 | ring hydroxylating dioxygenase, alpha subunit                 | 0    | 1.77 | 4.46  | 0.000 | 0.077 | 0.071 |
| Pput_2899 | 148548111 | FAD-dependent pyridine nucleotide-disulphide oxidoreductase   | 0    | 3.08 | 4.37  | 0.000 | 0.135 | 0.070 |
| Pput_2900 | 148548112 | propionyl-CoA synthetase                                      | 0    | 1.36 | 3.81  | 0.000 | 0.060 | 0.061 |
| Pput_2901 | 148548113 | membrane protein involved in aromatic hydrocarbon degradation | 0    | 0.94 | 2.38  | 0.000 | 0.041 | 0.038 |
| Pput_2902 | 148548114 | oxidoreductase FAD-binding subunit                            | 0    | 1.77 | 3.56  | 0.000 | 0.077 | 0.057 |
| Pput_2903 | 148548115 | fatty acid desaturase                                         | 0    | 0.65 | 3.15  | 0.000 | 0.028 | 0.050 |
| Pput_2904 | 148548116 | aldehyde dehydrogenase                                        | 0    | 5.6  | 14.03 | 0.000 | 0.245 | 0.224 |
| Pput_2905 | 148548117 | short-chain dehydrogenase/reductase SDR                       | 0    | 1.58 | 6.44  | 0.000 | 0.069 | 0.103 |
| Pput_2906 | 148548118 | dienelactone hydrolase                                        | 0    | 0.55 | 0.66  | 0.000 | 0.024 | 0.011 |
| Pput_2907 | 148548119 | hypothetical protein Pput_2907                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2908 | 148548120 | TetR family transcriptional regulator                         | 0.35 | 0.35 | 0.73  | 0.003 | 0.015 | 0.012 |
| Pput_2910 | 148548121 | hypothetical protein Pput_2910                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2911 | 148548122 | hypothetical protein Pput_2911                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2912 | 148548123 | hypothetical protein Pput_2912                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2913 | 148548124 | phage transcriptional regulator, AlpA                         | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2914 | 148548125 | cobyrinic acid a,c-diamide synthase                           | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2915 | 148548126 | hypothetical protein Pput_2915                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2916 | 148548127 | hypothetical protein Pput_2916                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2917 | 148548128 | hypothetical protein Pput_2917                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2918 | 148548129 | hypothetical protein Pput_2918                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2919 | 148548130 | hypothetical protein Pput_2919                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2920 | 148548131 | single-stranded DNA-binding protein                           | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2921 | 148548132 | hypothetical protein Pput_2921                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2922 | 148548133 | XRE family transcriptional regulator                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2923 | 148548134 | DNA topoisomerase III                                         | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2925 | 148548135 | hypothetical protein Pput_2925                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2926 | 148548136 | hypothetical protein Pput_2926                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2927 | 148548137 | DNA repair protein RadC                                       | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2928 | 148548138 | hypothetical protein Pput_2928                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2929 | 148548139 | hypothetical protein Pput_2929                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2930 | 148548140 | hypothetical protein Pput_2930                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2931 | 148548141 | hypothetical protein Pput_2931                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2932 | 148548142 | lytic transglycosylase, catalytic                             | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2933 | 148548143 | hypothetical protein Pput_2933                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2934 | 148548144 | hypothetical protein Pput_2934                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2935 | 148548145 | hypothetical protein Pput_2935                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2936 | 148548146 | glutathione-dependent formaldehyde-activating, GFA            | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2937 | 148548147 | LysR family transcriptional regulator                         | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2938 | 148548148 | hypothetical protein Pput_2938                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2939 | 148548149 | NUDIX hydrolase                                               | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2940 | 148548150 | hypothetical protein Pput_2940                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2941 | 148548151 | hypothetical protein Pput_2941                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2942 | 148548152 | hypothetical protein Pput_2942                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2943 | 148548153 | hypothetical protein Pput_2943                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2944 | 148548154 | hypothetical protein Pput_2944                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2945 | 148548155 | hypothetical protein Pput_2945                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2946 | 148548156 | hypothetical protein Pput_2946                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2947 | 148548157 | hypothetical protein Pput_2947                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2948 | 148548158 | Type IV secretory pathway VirB4 components-like protein       | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2949 | 148548159 | hypothetical protein Pput_2949                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2950 | 148548160 | DNA-directed DNA polymerase                                   | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2951 | 148548161 | putative prophage repressor                                   | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2952 | 148548162 | hypothetical protein Pput_2952                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2953 | 148548163 | hypothetical protein Pput_2953                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2954 | 148548164 | hypothetical protein Pput_2954                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2955 | 148548165 | hypothetical protein Pput_2955                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2956 | 148548166 | hypothetical protein Pput_2956                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2957 | 148548167 | hypothetical protein Pput_2957                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2958 | 148548168 | hypothetical protein Pput_2958                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2959 | 148548169 | hypothetical protein Pput_2959                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2960 | 148548170 | hypothetical protein Pput_2960                                | 2.08 | 0    | 0     | 0.016 | 0.000 | 0.000 |
| Pput_2961 | 148548171 | hypothetical protein Pput_2961                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2962 | 148548172 | relaxase                                                      | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2963 | 148548173 | ATPase involved in DNA repair-like protein                    | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2964 | 148548174 | hypothetical protein Pput_2964                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2965 | 148548175 | hypothetical protein Pput_2965                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2966 | 148548176 | NAD(P)H dehydrogenase (quinone)                               | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2967 | 148548177 | MerR family transcriptional regulator                         | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2968 | 148548178 | RND efflux transporter                                        | 0    | 0    | 0.08  | 0.000 | 0.000 | 0.001 |
| Pput_2969 | 148548179 | putative sigma E regulatory protein, MucB/RseB                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2970 | 148548180 | hypothetical protein Pput_2970                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2971 | 148548181 | short-chain dehydrogenase/reductase SDR                       | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2972 | 148548182 | short-chain dehydrogenase/reductase SDR                       | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2973 | 148548183 | aminotransferase class-III                                    | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2974 | 148548184 | Beta-ketoacyl synthase-like protein                           | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2975 | 148548185 | Beta-ketoacyl synthase-like protein                           | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2976 | 148548186 | hypothetical protein Pput_2976                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2977 | 148548187 | Beta-ketoacyl synthase-like protein                           | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2978 | 148548188 | hypothetical protein Pput_2978                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2979 | 148548189 | ABC transporter related                                       | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2980 | 148548190 | hypothetical protein Pput_2980                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |

|           |           |                                                                                         |      |      |       |       |       |       |
|-----------|-----------|-----------------------------------------------------------------------------------------|------|------|-------|-------|-------|-------|
| Pput_2981 | 148548191 | acyl-CoA dehydrogenase type 2                                                           | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2982 | 148548192 | sigma-54 dependent transcriptional regulator                                            | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2983 | 148548193 | hypothetical protein Pput_2983                                                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2984 | 148548194 | ABC-type branched-chain amino acid transport systems periplasmic component-like protein | 0.16 | 0    | 0     | 0.001 | 0.000 | 0.000 |
| Pput_2985 | 148548195 | inner-membrane translocator                                                             | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2986 | 148548196 | inner-membrane translocator                                                             | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2987 | 148548197 | ABC transporter related                                                                 | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2988 | 148548198 | long-chain acyl-CoA synthetase (AMP-forming)-like protein                               | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2989 | 148548199 | luciferase family protein                                                               | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2990 | 148548200 | FMN reductase                                                                           | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2991 | 148548201 | acyl-CoA dehydrogenase type 2                                                           | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2992 | 148548202 | inner-membrane translocator                                                             | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2993 | 148548203 | inner-membrane translocator                                                             | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2994 | 148548204 | ABC transporter related                                                                 | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2995 | 148548205 | ABC-type sugar transport system periplasmic component-like protein                      | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2996 | 148548206 | periplasmic binding protein/LacI transcriptional regulator                              | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2997 | 148548207 | hypothetical protein Pput_2997                                                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2998 | 148548208 | acyl-CoA dehydrogenase type 2                                                           | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_2999 | 148548209 | outer membrane porin                                                                    | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3000 | 148548210 | ABC transporter related                                                                 | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3001 | 148548211 | ABC-type branched-chain amino acid transport systems periplasmic component-like protein | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3002 | 148548212 | ABC-type branched-chain amino acid transport systems periplasmic component-like protein | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3003 | 148548213 | inner-membrane translocator                                                             | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3004 | 148548214 | inner-membrane translocator                                                             | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3005 | 148548215 | ABC transporter related                                                                 | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3006 | 148548216 | hypothetical protein Pput_3006                                                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3007 | 148548217 | hypothetical protein Pput_3007                                                          | 0.14 | 0    | 0.14  | 0.001 | 0.000 | 0.002 |
| Pput_3008 | 148548218 | UspA domain-containing protein                                                          | 0.24 | 0    | 0.7   | 0.002 | 0.000 | 0.011 |
| Pput_3009 | 148548219 | ribose-phosphate pyrophosphokinase                                                      | 0    | 0    | 0.33  | 0.000 | 0.000 | 0.005 |
| Pput_3010 | 148548220 | GCN5-related N-acetyltransferase                                                        | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3011 | 148548221 | protein of unknown function DUF861, cupin_3                                             | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3012 | 148548222 | MscS mechanosensitive ion channel                                                       | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3013 | 148548223 | MerR family transcriptional regulator                                                   | 0.25 | 0    | 0.5   | 0.002 | 0.000 | 0.008 |
| Pput_3014 | 148548224 | putative PAS/PAC sensor protein                                                         | 1.33 | 0    | 0.72  | 0.010 | 0.000 | 0.012 |
| Pput_3015 | 148548225 | hypothetical protein Pput_3015                                                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3016 | 148548226 | short-chain dehydrogenase/reductase SDR                                                 | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3017 | 148548227 | amine oxidase                                                                           | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3018 | 148548228 | hypothetical protein Pput_3018                                                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3019 | 148548229 | cyclopropane-fatty-acyl-phospholipid synthase                                           | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3020 | 148548230 | hypothetical protein Pput_3020                                                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3021 | 148548231 | hypothetical protein Pput_3021                                                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3022 | 148548232 | deoxyribodipyrimidine photolyase-related protein                                        | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3023 | 148548233 | hypothetical protein Pput_3023                                                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3024 | 148548234 | hypothetical protein Pput_3024                                                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3025 | 148548235 | hypothetical protein Pput_3025                                                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3026 | 148548236 | hypothetical protein Pput_3026                                                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3027 | 148548237 | short-chain dehydrogenase/reductase SDR                                                 | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3028 | 148548238 | membrane protein-like protein                                                           | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3029 | 148548239 | Pfpl family intracellular peptidase                                                     | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3030 | 148548240 | hypothetical protein Pput_3030                                                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3031 | 148548241 | short-chain dehydrogenase/reductase SDR                                                 | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3032 | 148548242 | hemerythrin HHE cation binding domain-containing protein                                | 0.71 | 0    | 0     | 0.005 | 0.000 | 0.000 |
| Pput_3033 | 148548243 | hypothetical protein Pput_3033                                                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3034 | 148548244 | regulatory protein, ArsR                                                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3035 | 148548245 | arsenical pump membrane protein                                                         | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3036 | 148548246 | protein tyrosine phosphatase                                                            | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3037 | 148548247 | arsenate resistance ArsH                                                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3038 | 148548248 | integral membrane sensor signal transduction histidine kinase                           | 0    | 0.15 | 0.37  | 0.000 | 0.007 | 0.006 |
| Pput_3039 | 148548249 | two component transcriptional regulator                                                 | 0    | 0.15 | 0.69  | 0.000 | 0.007 | 0.011 |
| Pput_3040 | 148548250 | hypothetical protein Pput_3040                                                          | 1.94 | 0    | 5.34  | 0.015 | 0.000 | 0.085 |
| Pput_3041 | 148548251 | short chain dehydrogenase                                                               | 3.44 | 2.81 | 10.87 | 0.026 | 0.123 | 0.174 |
| Pput_3042 | 148548252 | hypothetical protein Pput_3042                                                          | 5.71 | 1.01 | 4.67  | 0.043 | 0.044 | 0.075 |
| Pput_3043 | 148548253 | AMP-dependent synthetase and ligase                                                     | 0.3  | 0.61 | 1.11  | 0.002 | 0.027 | 0.018 |
| Pput_3044 | 148548254 | hypothetical protein Pput_3044                                                          | 0    | 0.54 | 0     | 0.000 | 0.024 | 0.000 |
| Pput_3045 | 148548255 | exodeoxyribonuclease III                                                                | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3046 | 148548256 | hypothetical protein Pput_3046                                                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3047 | 148548257 | hypothetical protein Pput_3047                                                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3048 | 148548258 | amidohydrolase                                                                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3049 | 148548259 | major facilitator transporter                                                           | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3050 | 148548260 | hypothetical protein Pput_3050                                                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3051 | 148548261 | LysR family transcriptional regulator                                                   | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3052 | 148548262 | redoxin domain-containing protein                                                       | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3053 | 148548263 | hypothetical protein Pput_3053                                                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3054 | 148548264 | 5-methyltetrahydropteroyltriglutamate--homocysteine methyltransferase                   | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3055 | 148548265 | flavin reductase domain-containing protein                                              | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3056 | 148548266 | LysR family transcriptional regulator                                                   | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3057 | 148548267 | LysR family transcriptional regulator                                                   | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3058 | 148548268 | aldehyde dehydrogenase                                                                  | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3059 | 148548269 | peptidase M19, renal dipeptidase                                                        | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3060 | 148548270 | BCCT transporter                                                                        | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3061 | 148548271 | hypothetical protein Pput_3061                                                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3062 | 148548272 | hypothetical protein Pput_3062                                                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3063 | 148548273 | endoribonuclease L-PSP                                                                  | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3064 | 148548274 | hypothetical protein Pput_3064                                                          | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3065 | 148548275 | hypothetical protein Pput_3065                                                          | 0    | 0    | 0.38  | 0.000 | 0.000 | 0.006 |
| Pput_3066 | 148548276 | hypothetical protein Pput_3066                                                          | 0    | 0    | 1.27  | 0.000 | 0.000 | 0.020 |
| Pput_3067 | 148548277 | transglutaminase domain-containing protein                                              | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3068 | 148548278 | proteasome-type protease-like protein                                                   | 0    | 0    | 2.77  | 0.000 | 0.000 | 0.044 |
| Pput_3069 | 148548279 | gluconate transporter                                                                   | 0    | 0    | 0     | 0.000 | 0.000 | 0.000 |

|           |           |                                                                                         |      |      |      |       |       |       |
|-----------|-----------|-----------------------------------------------------------------------------------------|------|------|------|-------|-------|-------|
| Pput_3070 | 148548280 | D-serine dehydratase                                                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3071 | 148548281 | DNA-binding transcriptional regulator DsdC                                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3072 | 148548282 | GntR family transcriptional regulator                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3073 | 148548283 | hydroxymethylglutaryl-CoA reductase, degradative                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3074 | 148548284 | pyruvate carboxyltransferase                                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3075 | 148548285 | hypothetical protein Pput_3075                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3076 | 148548286 | hypothetical protein Pput_3076                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3077 | 148548287 | outer membrane porin                                                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3078 | 148548288 | hypothetical protein Pput_3078                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3079 | 148548289 | PAS/PAC sensor hybrid histidine kinase                                                  | 0    | 0.12 | 0    | 0.000 | 0.005 | 0.000 |
| Pput_3080 | 148548290 | iron-containing alcohol dehydrogenase                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3081 | 148548291 | pyrroloquinoline quinone biosynthesis protein PqqD                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3082 | 148548292 | coenzyme PQQ biosynthesis protein A                                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3083 | 148548293 | aldehyde dehydrogenase                                                                  | 4.48 | 1.5  | 0.8  | 0.034 | 0.066 | 0.013 |
| Pput_3084 | 148548294 | Pyrrolo-quinoline quinone                                                               | 0.79 | 0    | 0.58 | 0.006 | 0.000 | 0.009 |
| Pput_3085 | 148548295 | beta-lactamase domain-containing protein                                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3086 | 148548296 | hypothetical protein Pput_3086                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3087 | 148548297 | extracellular solute-binding protein                                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3088 | 148548298 | cytochrome c, class I                                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3089 | 148548299 | Pyrrolo-quinoline quinone                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3090 | 148548300 | pentapeptide repeat-containing protein                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3091 | 148548301 | two component LuxR family transcriptional regulator                                     | 0    | 0.16 | 0    | 0.000 | 0.007 | 0.000 |
| Pput_3092 | 148548302 | integral membrane sensor signal transduction histidine kinase                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3093 | 148548303 | ABC-type branched-chain amino acid transport systems periplasmic component-like protein | 0.27 | 0    | 0.18 | 0.002 | 0.000 | 0.003 |
| Pput_3094 | 148548304 | YVTN beta-propeller repeat-containing protein                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3095 | 148548305 | ABC transporter related                                                                 | 0.3  | 1.18 | 0    | 0.002 | 0.052 | 0.000 |
| Pput_3096 | 148548306 | ABC-2 type transporter                                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3097 | 148548307 | peptidase C26                                                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3098 | 148548308 | 5-dehydro-4-deoxyglucarate dehydratase                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3099 | 148548309 | d-galactonate transporter                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3100 | 148548310 | galactarate dehydratase                                                                 | 0.14 | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_3101 | 148548311 | aldehyde dehydrogenase                                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3102 | 148548312 | GntR domain-containing protein                                                          | 0.29 | 2.64 | 2.1  | 0.002 | 0.116 | 0.034 |
| Pput_3103 | 148548313 | hypothetical protein Pput_3103                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3104 | 148548314 | hypothetical protein Pput_3104                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3105 | 148548315 | LysR family transcriptional regulator                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3106 | 148548316 | hypothetical protein Pput_3106                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3107 | 148548317 | hypothetical protein Pput_3107                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3108 | 148548318 | hypothetical protein Pput_3108                                                          | 0.8  | 0.18 | 1.24 | 0.006 | 0.008 | 0.020 |
| Pput_3109 | 148548319 | TonB-dependent siderophore receptor                                                     | 0.2  | 0.32 | 0    | 0.002 | 0.014 | 0.000 |
| Pput_3110 | 148548320 | L-sorbose dehydrogenase                                                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3111 | 148548321 | hypothetical protein Pput_3111                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3112 | 148548322 | hypothetical protein Pput_3112                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3113 | 148548323 | hypothetical protein Pput_3113                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3114 | 148548324 | hypothetical protein Pput_3114                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3115 | 148548325 | PAAR repeat-containing protein                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3116 | 148548326 | beta-ketoadipate pathway transcription regulator                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3117 | 148548327 | shikimate dehydrogenase substrate binding subunit                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3118 | 148548328 | fumarate reductase/succinate dehydrogenase flavoprotein domain-containing protein       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3119 | 148548329 | NIPSNAP family protein                                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3120 | 148548330 | fumarate reductase/succinate dehydrogenase flavoprotein domain-containing protein       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3121 | 148548331 | major facilitator transporter                                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3122 | 148548332 | xyllose isomerase domain-containing protein                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3123 | 148548333 | oxidoreductase domain-containing protein                                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3124 | 148548334 | IcIR family transcriptional regulator                                                   | 0    | 0    | 0.29 | 0.000 | 0.000 | 0.005 |
| Pput_3125 | 148548335 | putative FAD-binding dehydrogenase                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3126 | 148548336 | metal dependent phosphohydrolase                                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3127 | 148548337 | aldehyde dehydrogenase                                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3128 | 148548338 | putative aminotransferase                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3129 | 148548339 | LuxR family transcriptional regulator                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3130 | 148548340 | amino acid permease-associated region                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3131 | 148548341 | aldehyde dehydrogenase                                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3132 | 148548342 | hydroxydechloroatrazine ethylaminohydrolase                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3133 | 148548343 | GCN5-related N-acetyltransferase                                                        | 1.62 | 0    | 0    | 0.012 | 0.000 | 0.000 |
| Pput_3134 | 148548344 | heme oxygenase                                                                          | 0    | 0    | 0.56 | 0.000 | 0.000 | 0.009 |
| Pput_3135 | 148548345 | hypothetical protein Pput_3135                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3136 | 148548346 | hypothetical protein Pput_3136                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3137 | 148548347 | hypothetical protein Pput_3137                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3138 | 148548348 | hypothetical protein Pput_3138                                                          | 0.4  | 0    | 0.4  | 0.003 | 0.000 | 0.006 |
| Pput_3139 | 148548349 | hypothetical protein Pput_3139                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3140 | 148548350 | paraquat-inducible protein A                                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3141 | 148548351 | paraquat-inducible protein A                                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3142 | 148548352 | hypothetical protein Pput_3142                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3143 | 148548353 | LysR family transcriptional regulator                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3144 | 148548354 | glyoxalase/bleomycin resistance protein/dioxygenase                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3145 | 148548355 | hypothetical protein Pput_3145                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3146 | 148548356 | general substrate transporter                                                           | 0.13 | 0.27 | 0.5  | 0.001 | 0.012 | 0.008 |
| Pput_3147 | 148548357 | glyoxalase/bleomycin resistance protein/dioxygenase                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3148 | 148548358 | alpha/beta hydrolase fold                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3149 | 148548359 | leucine-rich repeat-containing protein                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3150 | 148548360 | UvrD/REP helicase                                                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3151 | 148548361 | pirin domain-containing protein                                                         | 0.74 | 0    | 0    | 0.006 | 0.000 | 0.000 |
| Pput_3152 | 148548362 | amino acid adenylation domain-containing protein                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3153 | 148548363 | hypothetical protein Pput_3153                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3154 | 148548364 | heme peroxidase                                                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3155 | 148548365 | type I secretion system ATPase                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3156 | 148548366 | HlyD family type I secretion membrane fusion protein                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3157 | 148548367 | TolC family type I secretion outer membrane protein                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3158 | 148548368 | diguanylate cyclase with PAS/PAC sensor                                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |

|           |           |                                                            |       |      |      |       |       |       |
|-----------|-----------|------------------------------------------------------------|-------|------|------|-------|-------|-------|
| Pput_3159 | 148548369 | chromate transporter                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3160 | 148548370 | methyltransferase type 12                                  | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3161 | 148548371 | 4-hydroxyphenylpyruvate dioxygenase                        | 0.36  | 0.11 | 0.39 | 0.003 | 0.005 | 0.006 |
| Pput_3162 | 148548372 | major facilitator transporter                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3163 | 148548373 | aromatic-L-amino-acid decarboxylase                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3164 | 148548374 | LysR family transcriptional regulator                      | 0     | 0    | 0.46 | 0.000 | 0.000 | 0.007 |
| Pput_3165 | 148548375 | hypothetical protein Pput_3165                             | 0.9   | 0.32 | 1.31 | 0.007 | 0.014 | 0.021 |
| Pput_3166 | 148548376 | FAD dependent oxidoreductase                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3167 | 148548377 | major facilitator transporter                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3168 | 148548378 | LysR family transcriptional regulator                      | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3169 | 148548379 | hypothetical protein Pput_3169                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3170 | 148548380 | trans-aconitate 2-methyltransferase                        | 0.28  | 0    | 0.54 | 0.002 | 0.000 | 0.009 |
| Pput_3171 | 148548381 | amino acid permease-associated region                      | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3172 | 148548382 | GntR family transcriptional regulator                      | 0     | 0    | 0.14 | 0.000 | 0.000 | 0.002 |
| Pput_3174 | 148548383 | hypothetical protein Pput_3174                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3176 | 148548384 | hypothetical protein Pput_3176                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3177 | 148548385 | short-chain dehydrogenase/reductase SDR                    | 1.33  | 0.3  | 0.83 | 0.010 | 0.013 | 0.013 |
| Pput_3178 | 148548386 | LysR family transcriptional regulator                      | 0     | 0    | 0.22 | 0.000 | 0.000 | 0.004 |
| Pput_3179 | 148548387 | hypothetical protein Pput_3179                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3180 | 148548388 | hypothetical protein Pput_3180                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3181 | 148548389 | glutathione S-transferase domain-containing protein        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3182 | 148548390 | major facilitator transporter                              | 0     | 0.09 | 0    | 0.000 | 0.004 | 0.000 |
| Pput_3183 | 148548391 | LysR family transcriptional regulator                      | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3184 | 148548392 | TetR family transcriptional regulator                      | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3185 | 148548393 | amidohydrolase 3                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3186 | 148548394 | major facilitator transporter                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3187 | 148548395 | D-isomer specific 2-hydroxyacid dehydrogenase, NAD-binding | 0.22  | 0.22 | 0.47 | 0.002 | 0.010 | 0.008 |
| Pput_3188 | 148548396 | hypothetical protein Pput_3188                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3189 | 148548397 | 5'-nucleotidase                                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3190 | 148548398 | hypothetical protein Pput_3190                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3191 | 148548399 | O-acetylhomoserine aminocarboxypropyltransferase           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3192 | 148548400 | hypothetical protein Pput_3192                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3193 | 148548401 | hypothetical protein Pput_3193                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3194 | 148548402 | ATPase-like protein                                        | 0     | 0.18 | 0    | 0.000 | 0.008 | 0.000 |
| Pput_3195 | 148548403 | metal dependent phosphohydrolase                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3196 | 148548404 | TonB-dependent siderophore receptor                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3197 | 148548405 | glutaminase                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3198 | 148548406 | hypothetical protein Pput_3198                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3199 | 148548407 | major facilitator transporter                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3200 | 148548408 | protocatechuate 4,5-dioxygenase                            | 0     | 0    | 0.24 | 0.000 | 0.000 | 0.004 |
| Pput_3201 | 148548409 | outer membrane porin                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3202 | 148548410 | LysR family transcriptional regulator                      | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3203 | 148548411 | LmbE family protein                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3204 | 148548412 | hypothetical protein Pput_3204                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3205 | 148548413 | hypothetical protein Pput_3205                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3206 | 148548414 | hypothetical protein Pput_3206                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3207 | 148548415 | GTP cyclohydrolase I                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3208 | 148548416 | putative thiol-disulphide oxidoreductase DCC               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3209 | 148548417 | hypothetical protein Pput_3209                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3210 | 148548418 | hypothetical protein Pput_3210                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3211 | 148548419 | hypothetical protein Pput_3211                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3212 | 148548420 | hypothetical protein Pput_3212                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3213 | 148548421 | GCN5-related N-acetyltransferase                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3214 | 148548422 | HNH endonuclease                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3215 | 148548423 | short-chain dehydrogenase/reductase SDR                    | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3216 | 148548424 | hypothetical protein Pput_3216                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3217 | 148548425 | diguanylate cyclase                                        | 0     | 0.2  | 0.74 | 0.000 | 0.009 | 0.012 |
| Pput_3218 | 148548426 | MerR family transcriptional regulator                      | 1.1   | 0    | 0.56 | 0.008 | 0.000 | 0.009 |
| Pput_3219 | 148548427 | integration host factor subunit alpha                      | 5.66  | 0.81 | 0    | 0.043 | 0.035 | 0.000 |
| Pput_3220 | 148548428 | phenylalanyl-tRNA synthetase subunit beta                  | 0.95  | 0.28 | 0.79 | 0.007 | 0.012 | 0.013 |
| Pput_3221 | 148548429 | phenylalanyl-tRNA synthetase subunit alpha                 | 2.34  | 0.45 | 1.24 | 0.018 | 0.020 | 0.020 |
| Pput_3222 | 148548430 | 50S ribosomal protein L20                                  | 29.51 | 1.82 | 8.65 | 0.224 | 0.080 | 0.138 |
| Pput_3223 | 148548431 | 50S ribosomal protein L35                                  | 3.42  | 1.46 | 3.42 | 0.026 | 0.064 | 0.055 |
| Pput_3224 | 148548432 | translation initiation factor IF-3                         | 14.9  | 1.75 | 3.79 | 0.113 | 0.077 | 0.061 |
| Pput_3225 | 148548433 | threonyl-tRNA synthetase                                   | 1.7   | 0.35 | 1.14 | 0.013 | 0.015 | 0.018 |
| Pput_3226 | 148548434 | hypothetical protein Pput_3226                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3227 | 148548435 | cold-shock DNA-binding domain-containing protein           | 20.07 | 0    | 0    | 0.152 | 0.000 | 0.000 |
| Pput_3228 | 148548436 | hypothetical protein Pput_3228                             | 5.5   | 3.02 | 0.72 | 0.042 | 0.132 | 0.012 |
| Pput_3229 | 148548437 | hypothetical protein Pput_3229                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3230 | 148548438 | inosine/uridine-preferring nucleoside hydrolase            | 0     | 0    | 0.33 | 0.000 | 0.000 | 0.005 |
| Pput_3231 | 148548439 | D-ribose pyranase                                          | 1.07  | 0    | 0.62 | 0.008 | 0.000 | 0.010 |
| Pput_3232 | 148548440 | ribokinase                                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3233 | 148548441 | alanine racemase                                           | 0.21  | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_3234 | 148548442 | monosaccharide-transporting ATPase                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3235 | 148548443 | ABC transporter related                                    | 0.28  | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_3236 | 148548444 | monosaccharide-transporting ATPase                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3237 | 148548445 | L-asparaginase, type II                                    | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3238 | 148548446 | putative PAS/PAC sensor protein                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3239 | 148548447 | cyanate hydratase                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3240 | 148548448 | formate/nitrite transporter                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3241 | 148548449 | hypothetical protein Pput_3241                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3242 | 148548450 | deoxyribonuclease I                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3243 | 148548451 | hypothetical protein Pput_3243                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3244 | 148548452 | sporulation domain-containing protein                      | 1.74  | 0    | 1.55 | 0.013 | 0.000 | 0.025 |
| Pput_3245 | 148548453 | FAD dependent oxidoreductase                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3246 | 148548454 | hypothetical protein Pput_3246                             | 0.98  | 0    | 0.58 | 0.007 | 0.000 | 0.009 |
| Pput_3247 | 148548455 | hypothetical protein Pput_3247                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3248 | 148548456 | integral membrane protein TerC                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3249 | 148548457 | hypothetical protein Pput_3249                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |

|           |           |                                                                         |      |      |      |       |       |       |
|-----------|-----------|-------------------------------------------------------------------------|------|------|------|-------|-------|-------|
| Pput_3250 | 148548458 | LysR family transcriptional regulator                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3251 | 148548459 | serine/threonine transporter SstT                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3252 | 148548460 | hypothetical protein Pput_3252                                          | 2.45 | 5.11 | 5.72 | 0.019 | 0.224 | 0.091 |
| Pput_3253 | 148548461 | hypothetical protein Pput_3253                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3254 | 148548462 | hypothetical protein Pput_3254                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3255 | 148548463 | alkyl hydroperoxide reductase subunit F                                 | 0    | 0    | 0.14 | 0.000 | 0.000 | 0.002 |
| Pput_3256 | 148548464 | alkyl hydroperoxide reductase/ Thiol specific antioxidant/ Mal allergen | 3.64 | 0.19 | 0    | 0.028 | 0.008 | 0.000 |
| Pput_3257 | 148548465 | integral membrane protein TerC                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3258 | 148548466 | acyl-CoA dehydrogenase domain-containing protein                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3259 | 148548467 | LysR family transcriptional regulator                                   | 1.26 | 0.36 | 1.31 | 0.010 | 0.016 | 0.021 |
| Pput_3260 | 148548468 | aminotransferase, class V                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3261 | 148548469 | RES domain-containing protein                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3262 | 148548470 | hypothetical protein Pput_3262                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3263 | 148548471 | dihydropteridine reductase                                              | 0    | 0.16 | 0.34 | 0.000 | 0.007 | 0.005 |
| Pput_3264 | 148548472 | LysR family transcriptional regulator                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3265 | 148548473 | AraC family transcriptional regulator                                   | 0    | 0    | 0.65 | 0.000 | 0.000 | 0.010 |
| Pput_3266 | 148548474 | lysine exporter protein LysE/YggA                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3267 | 148548475 | sugar efflux transporter                                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3268 | 148548476 | hypothetical protein Pput_3268                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3269 | 148548477 | alcohol dehydrogenase                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3270 | 148548478 | AraC-like transcriptional regulator                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3271 | 148548479 | 2'-5' RNA ligase                                                        | 1.09 | 0    | 1.01 | 0.008 | 0.000 | 0.016 |
| Pput_3272 | 148548480 | aspartyl/asparaginy beta-hydroxylase                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3273 | 148548481 | alkylhydroperoxidase                                                    | 1.39 | 0    | 0    | 0.011 | 0.000 | 0.000 |
| Pput_3274 | 148548482 | GCN5-related N-acetyltransferase                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3275 | 148548483 | TonB-dependent siderophore receptor                                     | 0    | 0.08 | 0    | 0.000 | 0.004 | 0.000 |
| Pput_3276 | 148548484 | hypothetical protein Pput_3276                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3277 | 148548485 | periplasmic binding protein                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3278 | 148548486 | transport system permease protein                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3279 | 148548487 | ABC transporter related                                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3280 | 148548488 | GCN5-related N-acetyltransferase                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3281 | 148548489 | hypothetical protein Pput_3281                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3282 | 148548490 | diguanylate cyclase                                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3283 | 148548491 | cobyrinic acid a,c-diamide synthase                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3284 | 148548492 | major facilitator transporter                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3285 | 148548493 | CzcA family heavy metal efflux protein                                  | 0.09 | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_3286 | 148548494 | RND family efflux transporter MFP subunit                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3287 | 148548495 | outer membrane efflux protein                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3288 | 148548496 | 3-dehydroquinate dehydratase                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3289 | 148548497 | shikimate 5-dehydrogenase                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3290 | 148548498 | redoxin domain-containing protein                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3291 | 148548499 | hypothetical protein Pput_3291                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3292 | 148548500 | two component transcriptional regulator                                 | 0    | 0    | 0.29 | 0.000 | 0.000 | 0.005 |
| Pput_3293 | 148548501 | integral membrane sensor signal transduction histidine kinase           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3294 | 148548502 | ferric reductase domain-containing protein                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3295 | 148548503 | DoxX family protein                                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3296 | 148548504 | hypothetical protein Pput_3296                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3297 | 148548505 | hypothetical protein Pput_3297                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3298 | 148548506 | hypothetical protein Pput_3298                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3299 | 148548507 | hypothetical protein Pput_3299                                          | 3.28 | 0    | 0    | 0.025 | 0.000 | 0.000 |
| Pput_3300 | 148548508 | leucine-rich repeat-containing protein                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3301 | 148548509 | leucine-rich repeat-containing protein                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3302 | 148548510 | DNA polymerase II                                                       | 0    | 0    | 0.08 | 0.000 | 0.000 | 0.001 |
| Pput_3303 | 148548511 | major facilitator transporter                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3304 | 148548512 | LysR family transcriptional regulator                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3305 | 148548513 | LysR family transcriptional regulator                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3306 | 148548514 | hypothetical protein Pput_3306                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3307 | 148548515 | lysine exporter protein LysE/YggA                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3308 | 148548516 | hypothetical protein Pput_3308                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3309 | 148548517 | hypothetical protein Pput_3309                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3310 | 148548518 | AzlC family protein                                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3311 | 148548519 | branched-chain amino acid transport                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3312 | 148548520 | AraC family transcriptional regulator                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3313 | 148548521 | major facilitator transporter                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3314 | 148548522 | hypothetical protein Pput_3314                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3315 | 148548523 | hypothetical protein Pput_3315                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3316 | 148548524 | electron transport protein SCO1/SenC                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3317 | 148548525 | HesB/YadR/YfhF-family protein                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3318 | 148548526 | acyltransferase 3                                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3319 | 148548527 | fatty acid cistrans isomerase                                           | 0.16 | 0    | 0.26 | 0.001 | 0.000 | 0.004 |
| Pput_3320 | 148548528 | B12-dependent methionine synthase                                       | 0    | 0.05 | 0.3  | 0.000 | 0.002 | 0.005 |
| Pput_3321 | 148548529 | hypothetical protein Pput_3321                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3322 | 148548530 | hypothetical protein Pput_3322                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3323 | 148548531 | periplasmic binding protein/LacI transcriptional regulator              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3324 | 148548532 | sulfite reductase (ferredoxin)                                          | 2.61 | 0.41 | 1.71 | 0.020 | 0.018 | 0.027 |
| Pput_3325 | 148548533 | hypothetical protein Pput_3325                                          | 1.28 | 0    | 0    | 0.010 | 0.000 | 0.000 |
| Pput_3326 | 148548534 | leucine-rich repeat-containing protein                                  | 0.08 | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_3327 | 148548535 | 2,5-diketo-D-gluconate reductase B                                      | 0.26 | 0.45 | 1.26 | 0.002 | 0.020 | 0.020 |
| Pput_3328 | 148548536 | major facilitator transporter                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3329 | 148548537 | major facilitator transporter                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3330 | 148548538 | AraC family transcriptional regulator                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3331 | 148548539 | peptidase M14, carboxypeptidase A                                       | 0    | 0.66 | 2.72 | 0.000 | 0.029 | 0.043 |
| Pput_3332 | 148548540 | spore coat U domain-containing protein                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3333 | 148548541 | fimbrial biogenesis outer membrane usher protein                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3334 | 148548542 | type 1 pili usher pathway chaperone CsuC                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3335 | 148548543 | spore coat U domain-containing protein                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3336 | 148548544 | spore coat U domain-containing protein                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3337 | 148548545 | spore coat U domain-containing protein                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3338 | 148548546 | spore coat U domain-containing protein                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |

|           |           |                                                               |      |      |      |       |       |       |
|-----------|-----------|---------------------------------------------------------------|------|------|------|-------|-------|-------|
| Pput_3339 | 148548547 | multi-sensor signal transduction histidine kinase             | 0    | 0.09 | 0    | 0.000 | 0.004 | 0.000 |
| Pput_3340 | 148548548 | response regulator receiver protein                           | 1.35 | 0    | 0    | 0.010 | 0.000 | 0.000 |
| Pput_3341 | 148548549 | multi-sensor hybrid histidine kinase                          | 0.13 | 0.04 | 0.18 | 0.001 | 0.002 | 0.003 |
| Pput_3342 | 148548550 | hypothetical protein Pput_3342                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3343 | 148548551 | AFG1 family ATPase                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3344 | 148548552 | hypothetical protein Pput_3344                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3345 | 148548553 | AMP-dependent synthetase and ligase                           | 0.23 | 0.11 | 0.56 | 0.002 | 0.005 | 0.009 |
| Pput_3346 | 148548554 | LysR family transcriptional regulator                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3347 | 148548555 | CBS domain-containing protein                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3348 | 148548556 | integral membrane sensor signal transduction histidine kinase | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3349 | 148548557 | two component transcriptional regulator                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3350 | 148548558 | peptidase                                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3351 | 148548559 | peptidase                                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3352 | 148548560 | hypothetical protein Pput_3352                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3353 | 148548561 | phage integrase family protein                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3354 | 148548562 | hypothetical protein Pput_3354                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3355 | 148548563 | hypothetical protein Pput_3355                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3356 | 148548564 | hypothetical protein Pput_3356                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3357 | 148548565 | hypothetical protein Pput_3357                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3358 | 148548566 | hypothetical protein Pput_3358                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3359 | 148548567 | hypothetical protein Pput_3359                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3360 | 148548568 | hypothetical protein Pput_3360                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3361 | 148548569 | hypothetical protein Pput_3361                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3362 | 148548570 | hypothetical protein Pput_3362                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3363 | 148548571 | hypothetical protein Pput_3363                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3364 | 148548572 | hypothetical protein Pput_3364                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3365 | 148548573 | hypothetical protein Pput_3365                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3366 | 148548574 | hypothetical protein Pput_3366                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3367 | 148548575 | prophage tail length tape measure                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3368 | 148548576 | hypothetical protein Pput_3368                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3369 | 148548577 | hypothetical protein Pput_3369                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3370 | 148548578 | Ig domain-containing protein                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3371 | 148548579 | hypothetical protein Pput_3371                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3372 | 148548580 | hypothetical protein Pput_3372                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3373 | 148548581 | hypothetical protein Pput_3373                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3374 | 148548582 | hypothetical protein Pput_3374                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3375 | 148548583 | hypothetical protein Pput_3375                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3376 | 148548584 | hypothetical protein Pput_3376                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3377 | 148548585 | hypothetical protein Pput_3377                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3378 | 148548586 | SPP1 family phage head morphogenesis protein                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3379 | 148548587 | hypothetical protein Pput_3379                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3380 | 148548588 | hypothetical protein Pput_3380                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3381 | 148548589 | hypothetical protein Pput_3381                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3382 | 148548590 | hypothetical protein Pput_3382                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3383 | 148548591 | hypothetical protein Pput_3383                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3384 | 148548592 | hypothetical protein Pput_3384                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3385 | 148548593 | hypothetical protein Pput_3385                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3386 | 148548594 | hypothetical protein Pput_3386                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3387 | 148548595 | hypothetical protein Pput_3387                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3388 | 148548596 | hypothetical protein Pput_3388                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3389 | 148548597 | bacteriophage lambda NinG family protein                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3390 | 148548598 | NinB family protein                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3391 | 148548599 | hypothetical protein Pput_3391                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3392 | 148548600 | hypothetical protein Pput_3392                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3393 | 148548601 | hypothetical protein Pput_3393                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3394 | 148548602 | hypothetical protein Pput_3394                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3395 | 148548603 | phage-encoded protein                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3396 | 148548604 | hypothetical protein Pput_3396                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3397 | 148548605 | hypothetical protein Pput_3397                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3398 | 148548606 | putative phage repressor                                      | 0.25 | 0.25 | 0    | 0.002 | 0.011 | 0.000 |
| Pput_3399 | 148548607 | hypothetical protein Pput_3399                                | 0.38 | 0    | 0    | 0.003 | 0.000 | 0.000 |
| Pput_3400 | 148548608 | hypothetical protein Pput_3400                                | 0.57 | 0    | 0    | 0.004 | 0.000 | 0.000 |
| Pput_3401 | 148548609 | hypothetical protein Pput_3401                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3402 | 148548610 | hypothetical protein Pput_3402                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3403 | 148548611 | hypothetical protein Pput_3403                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3404 | 148548612 | hypothetical protein Pput_3404                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3405 | 148548613 | hypothetical protein Pput_3405                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3406 | 148548614 | hypothetical protein Pput_3406                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3407 | 148548615 | hypothetical protein Pput_3407                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3408 | 148548616 | hypothetical protein Pput_3408                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3409 | 148548617 | hypothetical protein Pput_3409                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3410 | 148548618 | hypothetical protein Pput_3410                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3411 | 148548619 | siphovirus Gp157 family protein                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3412 | 148548620 | hypothetical protein Pput_3412                                | 0.4  | 0    | 0    | 0.003 | 0.000 | 0.000 |
| Pput_3413 | 148548621 | hypothetical protein Pput_3413                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3414 | 148548622 | hypothetical protein Pput_3414                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3415 | 148548623 | hypothetical protein Pput_3415                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3416 | 148548624 | hypothetical protein Pput_3416                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3417 | 148548625 | hypothetical protein Pput_3417                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3418 | 148548626 | hypothetical protein Pput_3418                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3419 | 148548627 | hypothetical protein Pput_3419                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3420 | 148548628 | hypothetical protein Pput_3420                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3421 | 148548629 | hypothetical protein Pput_3421                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3422 | 148548630 | hypothetical protein Pput_3422                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3423 | 148548631 | hypothetical protein Pput_3423                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3424 | 148548632 | hypothetical protein Pput_3424                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3425 | 148548633 | hypothetical protein Pput_3425                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3426 | 148548634 | hypothetical protein Pput_3426                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3427 | 148548635 | phage transcriptional regulator, AlpA                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |

|           |           |                                                                      |        |        |         |       |        |        |
|-----------|-----------|----------------------------------------------------------------------|--------|--------|---------|-------|--------|--------|
| Pput_3428 | 148548636 | putative 6-pyruvoyl tetrahydropterin synthase                        | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3429 | 148548637 | hypothetical protein Pput_3429                                       | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3430 | 148548638 | hypothetical protein Pput_3430                                       | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3431 | 161936356 | bifunctional aconitate hydratase 2/2-methylisocitrate dehydratase    | 9.37   | 0.53   | 6.38    | 0.071 | 0.023  | 0.102  |
| Pput_3432 | 148548640 | 2-methylcitrate dehydratase                                          | 0.42   | 0.3    | 0.9     | 0.003 | 0.013  | 0.014  |
| Pput_3433 | 148548641 | putative AcnD-accessory protein PrpF                                 | 0.41   | 3      | 4.36    | 0.003 | 0.131  | 0.070  |
| Pput_3434 | 148548642 | aconitate hydratase                                                  | 1.63   | 0.71   | 2.66    | 0.012 | 0.031  | 0.043  |
| Pput_3435 | 148548643 | methylcitrate synthase                                               | 5.41   | 2.28   | 9.34    | 0.041 | 0.100  | 0.149  |
| Pput_3436 | 148548644 | 2-methylisocitrate lyase                                             | 1.68   | 1.73   | 7.44    | 0.013 | 0.076  | 0.119  |
| Pput_3437 | 148548645 | GntR family transcriptional regulator                                | 0.28   | 0.69   | 1.81    | 0.002 | 0.030  | 0.029  |
| Pput_3438 | 148548646 | hypothetical protein Pput_3438                                       | 0.99   | 0      | 0       | 0.007 | 0.000  | 0.000  |
| Pput_3439 | 148548647 | hypothetical protein Pput_3439                                       | 0.34   | 0.07   | 0.41    | 0.003 | 0.003  | 0.007  |
| Pput_3440 | 148548648 | alpha-L-glutamate ligase-like protein                                | 0      | 0.22   | 0       | 0.000 | 0.010  | 0.000  |
| Pput_3441 | 148548649 | para-aminobenzoate synthase, subunit I                               | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3442 | 148548650 | phosphoadenosine phosphosulfate reductase                            | 0.42   | 0.66   | 1.47    | 0.003 | 0.029  | 0.023  |
| Pput_3443 | 148548651 | transcriptional regulator CysB                                       | 6.27   | 0.64   | 4.38    | 0.047 | 0.028  | 0.070  |
| Pput_3444 | 148548652 | UspA domain-containing protein                                       | 0.42   | 0      | 0       | 0.003 | 0.000  | 0.000  |
| Pput_3445 | 148548653 | 2-dehydropantoate 2-reductase                                        | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3446 | 148548654 | phospho-2-dehydro-3-deoxyheptonate aldolase                          | 1.09   | 0.44   | 1.17    | 0.008 | 0.019  | 0.019  |
| Pput_3447 | 148548655 | hypothetical protein Pput_3447                                       | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3448 | 148548656 | outer membrane lipoprotein OprI                                      | 723.82 | 417.95 | 1618.75 | 5.483 | 18.299 | 25.874 |
| Pput_3449 | 148548657 | ErkK/YbiS/YcfS/YnhG family protein                                   | 0      | 0      | 0.62    | 0.000 | 0.000  | 0.010  |
| Pput_3450 | 148548658 | hypothetical protein Pput_3450                                       | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3451 | 148548659 | arylesterase                                                         | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3452 | 148548660 | ABC transporter related                                              | 0      | 0.33   | 0.78    | 0.000 | 0.014  | 0.012  |
| Pput_3453 | 148548661 | hypothetical protein Pput_3453                                       | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3454 | 148548662 | transcription elongation factor GreB                                 | 0.45   | 0      | 0       | 0.003 | 0.000  | 0.000  |
| Pput_3455 | 148548663 | hypothetical protein Pput_3455                                       | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3456 | 148548664 | DoxX family protein                                                  | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3457 | 148548665 | lytic transglycosylase, catalytic                                    | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3458 | 148548666 | TatD-related deoxyribonuclease                                       | 0      | 0.25   | 0.67    | 0.000 | 0.011  | 0.011  |
| Pput_3459 | 148548667 | methyl-accepting chemotaxis sensory transducer                       | 0      | 0.23   | 0.3     | 0.000 | 0.010  | 0.005  |
| Pput_3460 | 148548668 | hypothetical protein Pput_3460                                       | 1.26   | 0      | 0.56    | 0.010 | 0.000  | 0.009  |
| Pput_3461 | 148548669 | Acyl-CoA thioesterase-like protein                                   | 0.64   | 0      | 0.77    | 0.005 | 0.000  | 0.012  |
| Pput_3462 | 148548670 | CHAD domain-containing protein                                       | 0.83   | 1.06   | 4.46    | 0.006 | 0.046  | 0.071  |
| Pput_3463 | 148548671 | hypothetical protein Pput_3463                                       | 2.88   | 0.94   | 3.44    | 0.022 | 0.041  | 0.055  |
| Pput_3464 | 148548672 | patatin                                                              | 0      | 0.32   | 0       | 0.000 | 0.014  | 0.000  |
| Pput_3465 | 148548673 | PpiC-type peptidyl-prolyl cis-trans isomerase                        | 0.64   | 0      | 0.16    | 0.005 | 0.000  | 0.003  |
| Pput_3466 | 148548674 | histone family protein DNA-binding protein                           | 65.07  | 1.99   | 22.72   | 0.493 | 0.087  | 0.363  |
| Pput_3467 | 148548675 | ATP-dependent protease La                                            | 1.59   | 0.23   | 1.34    | 0.012 | 0.010  | 0.021  |
| Pput_3468 | 148548676 | ATP-dependent protease ATP-binding subunit ClpX                      | 2.53   | 0.7    | 1.3     | 0.019 | 0.031  | 0.021  |
| Pput_3469 | 148548677 | ATP-dependent Clp protease proteolytic subunit                       | 6.12   | 2.75   | 4.8     | 0.046 | 0.120  | 0.077  |
| Pput_3470 | 148548678 | trigger factor                                                       | 10.94  | 1.27   | 2.39    | 0.083 | 0.056  | 0.038  |
| Pput_3471 | 148548679 | hypothetical protein Pput_3471                                       | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3472 | 148548680 | methylenetetrahydrofolate dehydrogenase (NADP(+))                    | 0.73   | 0      | 0       | 0.006 | 0.000  | 0.000  |
| Pput_3473 | 148548681 | extracellular solute-binding protein                                 | 1.68   | 0.06   | 1.18    | 0.013 | 0.003  | 0.019  |
| Pput_3474 | 148548682 | small integral membrane protein-like protein                         | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3475 | 148548683 | binding-protein-dependent transport systems inner membrane component | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3476 | 148548684 | binding-protein-dependent transport systems inner membrane component | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3477 | 148548685 | ABC transporter related                                              | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3478 | 148548686 | ABC transporter related                                              | 0      | 0.19   | 0.18    | 0.000 | 0.008  | 0.003  |
| Pput_3479 | 148548687 | Fis family GAF modulated sigma54 specific transcriptional regulator  | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3480 | 148548688 | diguanylate cyclase/phosphodiesterase with PAS/PAC and GAF sensor(s) | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3481 | 148548689 | methyl-accepting chemotaxis sensory transducer                       | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3482 | 148548690 | XRE family transcriptional regulator                                 | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3483 | 148548691 | C4-dicarboxylate transporter DctA                                    | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3484 | 148548692 | GntR domain-containing protein                                       | 0      | 0      | 0.33    | 0.000 | 0.000  | 0.005  |
| Pput_3485 | 148548693 | GntR family transcriptional regulator                                | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3486 | 148548694 | hypothetical protein Pput_3486                                       | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3487 | 148548695 | transmembrane pair domain-containing protein                         | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3488 | 148548696 | LysR family transcriptional regulator                                | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3489 | 148548697 | methyl-accepting chemotaxis sensory transducer                       | 0.18   | 0.11   | 0.18    | 0.001 | 0.005  | 0.003  |
| Pput_3490 | 148548698 | hypothetical protein Pput_3490                                       | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3491 | 148548699 | endoribonuclease L-PSP                                               | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3492 | 148548700 | FAD dependent oxidoreductase                                         | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3493 | 148548701 | XRE family transcriptional regulator                                 | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3494 | 148548702 | hypothetical protein Pput_3494                                       | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3495 | 148548703 | phosphoglycerate mutase                                              | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3496 | 148548704 | outer membrane receptor FepA                                         | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3497 | 148548705 | major facilitator transporter                                        | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3498 | 148548706 | ABC transporter                                                      | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3499 | 148548707 | hypothetical protein Pput_3499                                       | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3500 | 148548708 | hypothetical protein Pput_3500                                       | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3501 | 148548709 | hypothetical protein Pput_3501                                       | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3502 | 148548710 | peptidase M24                                                        | 0.24   | 0.12   | 0.39    | 0.002 | 0.005  | 0.006  |
| Pput_3503 | 148548711 | hypothetical protein Pput_3503                                       | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3504 | 148548712 | hypothetical protein Pput_3504                                       | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3505 | 148548713 | hypothetical protein Pput_3505                                       | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3506 | 148548714 | AraC family transcriptional regulator                                | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3507 | 148548715 | isochorismatase hydrolase                                            | 0      | 0      | 0.4     | 0.000 | 0.000  | 0.006  |
| Pput_3508 | 148548716 | XRE family transcriptional regulator                                 | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3509 | 148548717 | hypothetical protein Pput_3509                                       | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3510 | 148548718 | putative monovalent cation/H+ antiporter subunit A                   | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3511 | 148548719 | putative monovalent cation/H+ antiporter subunit C                   | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3512 | 148548720 | putative monovalent cation/H+ antiporter subunit D                   | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3513 | 148548721 | putative monovalent cation/H+ antiporter subunit E                   | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3514 | 148548722 | putative monovalent cation/H+ antiporter subunit F                   | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3515 | 148548723 | putative monovalent cation/H+ antiporter subunit G                   | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |
| Pput_3516 | 148548724 | hypothetical protein Pput_3516                                       | 0      | 0      | 0       | 0.000 | 0.000  | 0.000  |



|           |           |                                                                              |       |      |      |       |       |       |
|-----------|-----------|------------------------------------------------------------------------------|-------|------|------|-------|-------|-------|
| Pput_3517 | 148548725 | hypothetical protein Pput_3517                                               | 2.49  | 0    | 0    | 0.019 | 0.000 | 0.000 |
| Pput_3518 | 148548726 | hypothetical protein Pput_3518                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3519 | 148548727 | TraR/DksA family transcriptional regulator                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3520 | 148548728 | integrase catalytic subunit                                                  | 0.16  | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_3521 | 148548729 | enoyl-CoA hydratase/isomerase                                                | 2.29  | 2.15 | 2.11 | 0.017 | 0.094 | 0.034 |
| Pput_3522 | 148548730 | acyl-CoA dehydrogenase domain-containing protein                             | 0     | 0.19 | 1.44 | 0.000 | 0.008 | 0.023 |
| Pput_3523 | 148548731 | acetyl-CoA acetyltransferase                                                 | 0.27  | 0.54 | 2.75 | 0.002 | 0.024 | 0.044 |
| Pput_3524 | 148548732 | short-chain dehydrogenase/reductase SDR                                      | 1.26  | 0.5  | 2.19 | 0.010 | 0.022 | 0.035 |
| Pput_3525 | 148548733 | AMP-dependent synthetase and ligase                                          | 0     | 0.27 | 0.63 | 0.000 | 0.012 | 0.010 |
| Pput_3526 | 148548734 | leucine-rich repeat-containing protein                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3527 | 148548735 | helix-turn-helix domain-containing protein                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3528 | 148548736 | LysR family transcriptional regulator                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3529 | 148548737 | 2-aminoethylphosphonate--pyruvate transaminase                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3530 | 148548738 | phosphonoacetaldehyde hydrolase                                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3531 | 148548739 | hypothetical protein Pput_3531                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3532 | 148548740 | peptidase U32                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3534 | 148548741 | hypothetical protein Pput_3534                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3535 | 148548742 | hypothetical protein Pput_3535                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3536 | 148548743 | alpha/beta hydrolase fold                                                    | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3537 | 148548744 | DinB family protein                                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3538 | 148548745 | AFG1 family ATPase                                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3539 | 148548746 | glucose sorbosone dehydrogenase                                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3540 | 148548747 | hypothetical protein Pput_3540                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3541 | 148548748 | agmatinase                                                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3542 | 148548749 | extracellular solute-binding protein                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3543 | 148548750 | LysR family transcriptional regulator                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3544 | 148548751 | TonB-dependent siderophore receptor                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3545 | 148548752 | anti-FecI sigma factor, FecR                                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3546 | 148548753 | water stress/hypersensitive response protein                                 | 0.71  | 0    | 0.71 | 0.005 | 0.000 | 0.011 |
| Pput_3547 | 148548754 | hypothetical protein Pput_3547                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3548 | 148548755 | protein of unknown function DUF883, ElaB                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3549 | 148548756 | tRNA--hydroxylase                                                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3550 | 148548757 | UspA domain-containing protein                                               | 3.63  | 0    | 6.16 | 0.027 | 0.000 | 0.098 |
| Pput_3551 | 148548758 | hypothetical protein Pput_3551                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3552 | 148548759 | formate dehydrogenase, alpha subunit                                         | 0.51  | 0    | 0.16 | 0.004 | 0.000 | 0.003 |
| Pput_3553 | 148548760 | NADH dehydrogenase (quinone)                                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3554 | 148548761 | formate dehydrogenase subunit gamma                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3555 | 148548762 | ProQ activator of osmoprotectant transporter ProP                            | 1.19  | 0    | 0    | 0.009 | 0.000 | 0.000 |
| Pput_3556 | 148548763 | XRE family transcriptional regulator                                         | 0.41  | 0    | 0    | 0.003 | 0.000 | 0.000 |
| Pput_3557 | 148548764 | putative aminotransferase                                                    | 0.14  | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_3558 | 148548765 | peptidase C26                                                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3559 | 148548766 | glutamine synthetase, catalytic region                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3560 | 148548767 | XRE family transcriptional regulator                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3561 | 148548768 | LysR family transcriptional regulator                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3562 | 148548769 | short-chain dehydrogenase/reductase SDR                                      | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3563 | 148548770 | glutathione-dependent formaldehyde-activating, GFA                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3564 | 148548771 | AraC family transcriptional regulator                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3565 | 148548772 | hypothetical protein Pput_3565                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3566 | 148548773 | TetR family transcriptional regulator                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3567 | 148548774 | hypothetical protein Pput_3567                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3568 | 148548775 | hypothetical protein Pput_3568                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3569 | 148548776 | lysine exporter protein LysE/YggA                                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3570 | 148548777 | chorismate mutase                                                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3571 | 148548778 | PDZ/DHR/GLGF domain-containing protein                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3573 | 148548779 | tRNA-dihydrouridine synthase A                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3574 | 161936355 | transaldolase B                                                              | 4.97  | 0    | 2.93 | 0.038 | 0.000 | 0.047 |
| Pput_3575 | 148548781 | hypothetical protein Pput_3575                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3576 | 148548782 | anti-sigma-factor antagonist                                                 | 1.18  | 0    | 0    | 0.009 | 0.000 | 0.000 |
| Pput_3577 | 148548783 | response regulator receiver protein                                          | 0.18  | 0.28 | 0    | 0.001 | 0.012 | 0.000 |
| Pput_3578 | 148548784 | type IV pilus assembly PilZ                                                  | 1.89  | 0    | 0    | 0.014 | 0.000 | 0.000 |
| Pput_3579 | 148548785 | VacJ family lipoprotein                                                      | 3.9   | 1.58 | 4.24 | 0.030 | 0.069 | 0.068 |
| Pput_3580 | 148548786 | hypothetical protein Pput_3580                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3581 | 148548787 | hypothetical protein Pput_3581                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3582 | 148548788 | 7-cyano-7-deazaguanine reductase                                             | 0.41  | 0.38 | 0.64 | 0.003 | 0.017 | 0.010 |
| Pput_3583 | 148548789 | hypothetical protein Pput_3583                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3584 | 148548790 | two component heavy metal response transcriptional regulator                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3585 | 148548791 | heavy metal sensor signal transduction histidine kinase                      | 0.32  | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_3586 | 148548792 | LolC/E family lipoprotein releasing system, transmembrane protein            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3587 | 148548793 | lipoprotein releasing system, ATP-binding protein                            | 0.67  | 0.32 | 0.47 | 0.005 | 0.014 | 0.008 |
| Pput_3588 | 148548794 | LolC/E family lipoprotein releasing system, transmembrane protein            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3589 | 148548795 | type IV pilus assembly PilZ                                                  | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3590 | 148548796 | glycerophosphoryl diester phosphodiesterase                                  | 2.5   | 0.49 | 0.62 | 0.019 | 0.021 | 0.010 |
| Pput_3591 | 148548797 | soluble pyridine nucleotide transhydrogenase                                 | 2.64  | 0.53 | 2.23 | 0.020 | 0.023 | 0.036 |
| Pput_3592 | 148548798 | ApbE family lipoprotein                                                      | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3593 | 148548799 | glyceraldehyde-3-phosphate dehydrogenase                                     | 13.04 | 0.97 | 6.74 | 0.099 | 0.042 | 0.108 |
| Pput_3594 | 148548800 | transcription-repair coupling factor                                         | 0     | 0    | 0.46 | 0.000 | 0.000 | 0.007 |
| Pput_3595 | 148548801 | hypothetical protein Pput_3595                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3596 | 148548802 | non-specific serine/threonine protein kinase                                 | 0     | 0    | 0.24 | 0.000 | 0.000 | 0.004 |
| Pput_3597 | 148548803 | beta-hexosaminidase                                                          | 1.1   | 0.34 | 0.62 | 0.008 | 0.015 | 0.010 |
| Pput_3598 | 148548804 | TetR family transcriptional regulator                                        | 0.5   | 0.31 | 1.03 | 0.004 | 0.014 | 0.016 |
| Pput_3599 | 148548805 | LexA repressor                                                               | 0     | 0.61 | 0.54 | 0.000 | 0.027 | 0.009 |
| Pput_3600 | 148548806 | SOS-response cell division inhibitor blocks FtsZ ring formation-like protein | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3601 | 148548807 | hypothetical protein Pput_3601                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3602 | 148548808 | hypothetical protein Pput_3602                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3603 | 148548809 | DNA topoisomerase I                                                          | 1.18  | 0.12 | 0.66 | 0.009 | 0.005 | 0.011 |
| Pput_3604 | 148548810 | hypothetical protein Pput_3604                                               | 1.41  | 0    | 0    | 0.011 | 0.000 | 0.000 |
| Pput_3605 | 148548811 | 3-ketoacyl-CoA thiolase                                                      | 0.54  | 1.57 | 3.68 | 0.004 | 0.069 | 0.059 |
| Pput_3606 | 148548812 | multifunctional fatty acid oxidation complex subunit alpha                   | 1.65  | 0.21 | 0.84 | 0.012 | 0.009 | 0.013 |
| Pput_3607 | 148548813 | hypothetical protein Pput_3607                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |

|           |           |                                                                                              |       |      |       |       |       |       |
|-----------|-----------|----------------------------------------------------------------------------------------------|-------|------|-------|-------|-------|-------|
| Pput_3608 | 148548814 | UspA domain-containing protein                                                               | 7.57  | 0.53 | 2.12  | 0.057 | 0.023 | 0.034 |
| Pput_3609 | 148548815 | ABC transporter related                                                                      | 0.11  | 0.05 | 0.15  | 0.001 | 0.002 | 0.002 |
| Pput_3610 | 148548816 | lytic transglycosylase, catalytic                                                            | 0     | 0    | 0.1   | 0.000 | 0.000 | 0.002 |
| Pput_3611 | 148548817 | MOSC domain-containing protein                                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3612 | 148548818 | putative CheW protein                                                                        | 0.23  | 0    | 0     | 0.002 | 0.000 | 0.000 |
| Pput_3613 | 148548819 | putative CheA signal transduction histidine kinase                                           | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3614 | 148548820 | integral membrane sensor signal transduction histidine kinase                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3615 | 148548821 | two component LuxR family transcriptional regulator                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3616 | 148548822 | lipid kinase                                                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3617 | 148548823 | glycosyl transferase, group 1                                                                | 0     | 0    | 0.16  | 0.000 | 0.000 | 0.003 |
| Pput_3618 | 148548824 | molybdenum cofactor synthesis domain-containing protein                                      | 0     | 0    | 0.78  | 0.000 | 0.000 | 0.012 |
| Pput_3619 | 148548825 | molybdenum cofactor biosynthesis protein B                                                   | 3.23  | 0    | 2.9   | 0.024 | 0.000 | 0.046 |
| Pput_3620 | 148548826 | hypothetical protein Pput_3620                                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3621 | 148548827 | methyl-accepting chemotaxis sensory transducer                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3622 | 148548828 | lipid ABC transporter ATPase/inner membrane protein                                          | 0     | 0.06 | 0     | 0.000 | 0.003 | 0.000 |
| Pput_3623 | 148548829 | hypothetical protein Pput_3623                                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3624 | 148548830 | erythronate-4-phosphate dehydrogenase                                                        | 0.47  | 0.19 | 0.41  | 0.004 | 0.008 | 0.007 |
| Pput_3625 | 148548831 | sulfur transfer protein SirA                                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3626 | 148548832 | putative RNA 2'-O-ribose methyltransferase                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3627 | 148548833 | aconitate hydratase                                                                          | 1.49  | 0.08 | 0.89  | 0.011 | 0.004 | 0.014 |
| Pput_3628 | 148548834 | methyl-accepting chemotaxis sensory transducer                                               | 0.2   | 0.13 | 0.55  | 0.002 | 0.006 | 0.009 |
| Pput_3629 | 148548835 | pseudouridine synthase                                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3630 | 148548836 | hypothetical protein Pput_3630                                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3631 | 148548837 | peptidase M15A                                                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3632 | 148548838 | glutaredoxin 2                                                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3633 | 148548839 | Rh family protein/ammonium transporter                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3634 | 148548840 | protein of unknown function DUF883, ElaB                                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3635 | 148548841 | hypothetical protein Pput_3635                                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3636 | 148548842 | hypothetical protein Pput_3636                                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3637 | 148548843 | deoxyguanosinetriphosphate triphosphohydrolase-like protein                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3638 | 148548844 | two component LuxR family transcriptional regulator                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3639 | 148548845 | PAS/PAC sensor hybrid histidine kinase                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3640 | 148548846 | hypothetical protein Pput_3640                                                               | 0     | 0    | 1.2   | 0.000 | 0.000 | 0.019 |
| Pput_3641 | 148548847 | D-alanyl-D-alanine carboxypeptidase/D-alanyl-D-alanine-endopeptidase                         | 0     | 0    | 0.39  | 0.000 | 0.000 | 0.006 |
| Pput_3642 | 148548848 | diguanylate cyclase with PAS/PAC sensor                                                      | 0     | 0    | 0.27  | 0.000 | 0.000 | 0.004 |
| Pput_3643 | 229328218 | 23S rRNA m(2)G2445 methyltransferase                                                         | 0.73  | 0.19 | 1.15  | 0.006 | 0.008 | 0.018 |
| Pput_3644 | 148548850 | ribosome modulation factor                                                                   | 12.87 | 1.25 | 1     | 0.097 | 0.055 | 0.016 |
| Pput_3645 | 148548851 | dihydroorotate dehydrogenase 2                                                               | 0.2   | 0.44 | 0.93  | 0.002 | 0.019 | 0.015 |
| Pput_3646 | 148548852 | ABC-type nitrate/sulfonate/bicarbonate transport systems periplasmic components-like protein | 0     | 0    | 0.81  | 0.000 | 0.000 | 0.013 |
| Pput_3647 | 148548853 | response regulator receiver/ANTAR domain-containing protein                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3648 | 148548854 | nitrite transporter                                                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3649 | 148548855 | protein kinase                                                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3650 | 148548856 | uroporphyrin-III C-methyltransferase                                                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3651 | 148548857 | OmpF family protein                                                                          | 16.86 | 2.5  | 10.24 | 0.128 | 0.109 | 0.164 |
| Pput_3652 | 148548858 | RNA polymerase sigma factor SigX                                                             | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3653 | 148548859 | TM helix repeat-containing protein                                                           | 0.41  | 0    | 1.58  | 0.003 | 0.000 | 0.025 |
| Pput_3654 | 148548860 | hypothetical protein Pput_3654                                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3655 | 148548861 | Mg2+ transporter protein, CorA family protein                                                | 0     | 0    | 0.21  | 0.000 | 0.000 | 0.003 |
| Pput_3656 | 148548862 | ribonuclease activity regulator protein RraA                                                 | 11.43 | 1.2  | 2.1   | 0.087 | 0.053 | 0.034 |
| Pput_3657 | 148548863 | hypothetical protein Pput_3657                                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3658 | 148548864 | phosphoenolpyruvate synthase                                                                 | 2.91  | 0.46 | 1.72  | 0.022 | 0.020 | 0.027 |
| Pput_3659 | 148548865 | hypothetical protein Pput_3659                                                               | 0.41  | 0.26 | 0     | 0.003 | 0.011 | 0.000 |
| Pput_3660 | 148548866 | NAD-glutamate dehydrogenase                                                                  | 0.61  | 0.15 | 1.4   | 0.005 | 0.007 | 0.022 |
| Pput_3661 | 148548867 | hypothetical protein Pput_3661                                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3662 | 148548868 | DNA-binding transcriptional regulator LysR                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3663 | 148548869 | diaminopimelate decarboxylase                                                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3664 | 148548870 | ECF subfamily RNA polymerase sigma-24 factor                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3665 | 148548871 | anti-FecI sigma factor, FecR                                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3666 | 148548872 | TonB-dependent siderophore receptor                                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3667 | 148548873 | hypothetical protein Pput_3667                                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3668 | 148548874 | hypothetical protein Pput_3668                                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3669 | 148548875 | LysR family transcriptional regulator                                                        | 0     | 0.11 | 0     | 0.000 | 0.005 | 0.000 |
| Pput_3670 | 148548876 | GCN5-related N-acetyltransferase                                                             | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3671 | 148548877 | AraC family transcriptional regulator                                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3672 | 148548878 | cupin 2 domain-containing protein                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3673 | 148548879 | helix-turn-helix domain-containing protein                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3674 | 148548880 | RND efflux system outer membrane lipoprotein                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3675 | 148548881 | secretion protein HlyD family protein                                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3676 | 148548882 | EmrB/QacA family drug resistance transporter                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3677 | 148548883 | GntR family transcriptional regulator                                                        | 0     | 0    | 0.55  | 0.000 | 0.000 | 0.009 |
| Pput_3678 | 148548884 | acriflavin resistance protein                                                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3679 | 148548885 | RND family efflux transporter MFP subunit                                                    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3680 | 148548886 | MerR family transcriptional regulator                                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3681 | 148548887 | CsbD family protein                                                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3682 | 148548888 | outer membrane porin                                                                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3683 | 148548889 | CitMHS family citrate/H+ symporter                                                           | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3684 | 148548890 | sodium:dicarboxylate symporter                                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3685 | 148548891 | hypothetical protein Pput_3685                                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3686 | 148548892 | LysR family transcriptional regulator                                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3687 | 148548893 | hypothetical protein Pput_3687                                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3688 | 148548894 | hypothetical protein Pput_3688                                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3689 | 148548895 | HAD family hydrolase                                                                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3690 | 148548896 | acetyl-CoA acetyltransferase                                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3691 | 148548897 | thioesterase superfamily protein                                                             | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3692 | 148548898 | iron-containing alcohol dehydrogenase                                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3693 | 148548899 | acyl-CoA dehydrogenase domain-containing protein                                             | 0.12  | 0    | 0.12  | 0.001 | 0.000 | 0.002 |
| Pput_3694 | 148548900 | 3-hydroxybutyryl-CoA epimerase                                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3695 | 148548901 | LysR family transcriptional regulator                                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3696 | 148548902 | beta-lactamase domain-containing protein                                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |

|           |           |                                                                      |       |      |       |       |       |       |
|-----------|-----------|----------------------------------------------------------------------|-------|------|-------|-------|-------|-------|
| Pput_3697 | 148548903 | hypothetical protein Pput_3697                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3698 | 148548904 | hypothetical protein Pput_3698                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3699 | 148548905 | hypothetical protein Pput_3699                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3700 | 148548906 | hypothetical protein Pput_3700                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3701 | 148548907 | LysR family transcriptional regulator                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3702 | 148548908 | major facilitator transporter                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3703 | 148548909 | acyl-CoA dehydrogenase domain-containing protein                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3704 | 148548910 | AMP-dependent synthetase and ligase                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3705 | 148548911 | class II aldolase/adducin domain protein                             | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3706 | 148548912 | dihydrodipicolinate synthetase                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3707 | 148548913 | benzoate transporter                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3708 | 148548914 | major facilitator transporter                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3709 | 148548915 | hypothetical protein Pput_3709                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3710 | 148548916 | ATPase                                                               | 0.33  | 0.5  | 1.16  | 0.002 | 0.022 | 0.019 |
| Pput_3711 | 148548917 | hypothetical protein Pput_3711                                       | 0     | 0    | 0.3   | 0.000 | 0.000 | 0.005 |
| Pput_3712 | 148548918 | hypothetical protein Pput_3712                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3713 | 148548919 | von Willebrand factor, type A                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3714 | 148548920 | TPR repeat-containing protein                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3715 | 148548921 | hypothetical protein Pput_3715                                       | 0     | 0    | 0.12  | 0.000 | 0.000 | 0.002 |
| Pput_3716 | 148548922 | hypothetical protein Pput_3716                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3717 | 148548923 | nuclease SbcCD, D subunit                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3718 | 148548924 | SMC domain-containing protein                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3719 | 148548925 | glutathione S-transferase domain-containing protein                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3720 | 148548926 | hypothetical protein Pput_3720                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3721 | 148548927 | hypothetical protein Pput_3721                                       | 0.51  | 0    | 0.89  | 0.004 | 0.000 | 0.014 |
| Pput_3722 | 148548928 | hypothetical protein Pput_3722                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3723 | 148548929 | RND efflux transporter                                               | 0     | 0    | 0.25  | 0.000 | 0.000 | 0.004 |
| Pput_3724 | 148548930 | hypothetical protein Pput_3724                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3725 | 148548931 | aminopeptidase N                                                     | 0.63  | 0.12 | 0.63  | 0.005 | 0.005 | 0.010 |
| Pput_3726 | 148548932 | hypothetical protein Pput_3726                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3727 | 148548933 | hypothetical protein Pput_3727                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3728 | 148548934 | rhomboid family protein                                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3729 | 148548935 | metallophosphoesterase                                               | 0     | 0    | 0.3   | 0.000 | 0.000 | 0.005 |
| Pput_3730 | 148548936 | inorganic polyphosphate/ATP-NAD kinase                               | 0     | 0    | 0.51  | 0.000 | 0.000 | 0.008 |
| Pput_3731 | 148548937 | hypothetical protein Pput_3731                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3732 | 148548938 | cytochrome B561                                                      | 0.6   | 0    | 1.01  | 0.005 | 0.000 | 0.016 |
| Pput_3733 | 148548939 | 1-aminocyclopropane-1-carboxylate deaminase-like protein             | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3734 | 148548940 | NADH:flavin oxidoreductase/NADH oxidase                              | 0.1   | 0.16 | 0.1   | 0.001 | 0.007 | 0.002 |
| Pput_3735 | 148548941 | AraC-like transcriptional regulator                                  | 0.23  | 0    | 0     | 0.002 | 0.000 | 0.000 |
| Pput_3736 | 148548942 | hypothetical protein Pput_3736                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3737 | 148548943 | alcohol dehydrogenase                                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3738 | 148548944 | short-chain dehydrogenase/reductase SDR                              | 0.31  | 0.98 | 3.42  | 0.002 | 0.043 | 0.055 |
| Pput_3739 | 148548945 | hypothetical protein Pput_3739                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3740 | 148548946 | helix-turn-helix domain-containing protein                           | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3741 | 148548947 | hypothetical protein Pput_3741                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3742 | 148548948 | LysR family transcriptional regulator                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3743 | 148548949 | short-chain dehydrogenase/reductase SDR                              | 0     | 0    | 0.45  | 0.000 | 0.000 | 0.007 |
| Pput_3744 | 148548950 | antibiotic biosynthesis monooxygenase                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3745 | 148548951 | short-chain dehydrogenase/reductase SDR                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3746 | 148548952 | hypothetical protein Pput_3746                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3747 | 148548953 | pili assembly chaperone                                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3748 | 148548954 | hypothetical protein Pput_3748                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3749 | 148548955 | histidine kinase                                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3750 | 148548956 | response regulator receiver modulated diguanylate phosphodiesterase  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3751 | 148548957 | multi-sensor hybrid histidine kinase                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3752 | 148548958 | two component LuxR family transcriptional regulator                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3753 | 148548959 | fimbrial protein-like protein                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3754 | 148548960 | pili assembly chaperone                                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3755 | 148548961 | fimbrial biogenesis outer membrane usher protein                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3756 | 148548962 | Nitrilase/cyanide hydratase and apolipoprotein N-acyltransferase     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3757 | 148548963 | helix-turn-helix domain-containing protein                           | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3758 | 148548964 | hypothetical protein Pput_3758                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3759 | 148548965 | oxidoreductase                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3760 | 148548966 | O-succinylhomoserine sulfhydrylase                                   | 0.82  | 0.64 | 1.12  | 0.006 | 0.028 | 0.018 |
| Pput_3761 | 148548967 | amidophosphoribosyltransferase                                       | 1.37  | 0.57 | 1.27  | 0.010 | 0.025 | 0.020 |
| Pput_3762 | 148548968 | colicin V production protein                                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3763 | 148548969 | sporulation domain-containing protein                                | 0.36  | 0    | 0     | 0.003 | 0.000 | 0.000 |
| Pput_3764 | 148548970 | FolC bifunctional protein                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3765 | 148548971 | acetyl-CoA carboxylase subunit beta                                  | 4.5   | 1.14 | 5.29  | 0.034 | 0.050 | 0.085 |
| Pput_3766 | 148548972 | N-(5'-phosphoribosyl)anthranilate isomerase                          | 0.61  | 0    | 0     | 0.005 | 0.000 | 0.000 |
| Pput_3767 | 148548973 | tRNA pseudouridine synthase A                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3768 | 148548974 | peptidoglycan-binding LysM                                           | 0     | 0.04 | 0.41  | 0.000 | 0.002 | 0.007 |
| Pput_3769 | 148548975 | aspartate-semialdehyde dehydrogenase                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3770 | 148548976 | aspartate-semialdehyde dehydrogenase                                 | 3.17  | 0.42 | 2.7   | 0.024 | 0.018 | 0.043 |
| Pput_3771 | 148548977 | 3-isopropylmalate dehydrogenase                                      | 1     | 0.2  | 1.22  | 0.008 | 0.009 | 0.020 |
| Pput_3772 | 148548978 | methyltransferase type 11                                            | 0.87  | 0    | 0.87  | 0.007 | 0.000 | 0.014 |
| Pput_3773 | 148548979 | isopropylmalate isomerase small subunit                              | 3.53  | 0    | 0.86  | 0.027 | 0.000 | 0.014 |
| Pput_3774 | 148548980 | isopropylmalate isomerase large subunit                              | 2.25  | 0.23 | 0.38  | 0.017 | 0.010 | 0.006 |
| Pput_3775 | 148548981 | LysR family transcriptional regulator                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3776 | 148548982 | diguanylate cyclase/phosphodiesterase with PAS/PAC and GAF sensor(s) | 0     | 0    | 0.19  | 0.000 | 0.000 | 0.003 |
| Pput_3777 | 148548983 | heat shock protein Hsp20                                             | 32.88 | 4.65 | 31.35 | 0.249 | 0.204 | 0.501 |
| Pput_3778 | 148548984 | hypothetical protein Pput_3778                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3779 | 148548985 | dihydrouridine synthase, DuS                                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3780 | 148548986 | thioesterase superfamily protein                                     | 0.52  | 0    | 0     | 0.004 | 0.000 | 0.000 |
| Pput_3781 | 148548987 | hypothetical protein Pput_3781                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3782 | 148548988 | TetR family transcriptional regulator                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3783 | 148548989 | glutamyl-tRNA synthetase                                             | 1.61  | 0.29 | 1.53  | 0.012 | 0.013 | 0.024 |
| Pput_3784 | 148548990 | secretion protein HlyD family protein                                | 0     | 0    | 0.48  | 0.000 | 0.000 | 0.008 |
| Pput_3785 | 148548991 | EmrB/QacA family drug resistance transporter                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |

|           |           |                                                           |       |      |       |       |       |       |
|-----------|-----------|-----------------------------------------------------------|-------|------|-------|-------|-------|-------|
| Pput_3786 | 148548992 | excinuclease ABC subunit B                                | 0.21  | 0.15 | 0.2   | 0.002 | 0.007 | 0.003 |
| Pput_3787 | 148548993 | aromatic amino acid aminotransferase                      | 2.31  | 0.94 | 2.57  | 0.017 | 0.041 | 0.041 |
| Pput_3788 | 148548994 | cupin 2 domain-containing protein                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3789 | 148548995 | hypothetical protein Pput_3789                            | 2.66  | 0.4  | 2.39  | 0.020 | 0.018 | 0.038 |
| Pput_3790 | 148548996 | hypothetical protein Pput_3790                            | 1.2   | 0.6  | 0.54  | 0.009 | 0.026 | 0.009 |
| Pput_3791 | 148548997 | molybdenum cofactor synthesis domain-containing protein   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3792 | 148548998 | TetR family transcriptional regulator                     | 0     | 0    | 0.33  | 0.000 | 0.000 | 0.005 |
| Pput_3793 | 148548999 | TatD family hydrolase                                     | 0.28  | 0    | 0.45  | 0.002 | 0.000 | 0.007 |
| Pput_3794 | 148549000 | DNA polymerase III subunit delta'                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3795 | 148549001 | thymidylate kinase                                        | 0.72  | 0    | 0     | 0.005 | 0.000 | 0.000 |
| Pput_3796 | 148549002 | aminodeoxychorismate lyase                                | 0     | 0    | 0.25  | 0.000 | 0.000 | 0.004 |
| Pput_3797 | 148549003 | 4-amino-4-deoxychorismate lyase                           | 0     | 0    | 0.27  | 0.000 | 0.000 | 0.004 |
| Pput_3798 | 229328217 | 3-oxoacyl-(acyl carrier protein) synthase II              | 0.18  | 0.18 | 0.82  | 0.001 | 0.008 | 0.013 |
| Pput_3799 | 148549005 | acyl carrier protein                                      | 4.06  | 0    | 0     | 0.031 | 0.000 | 0.000 |
| Pput_3800 | 148549006 | 3-ketoacyl-(acyl-carrier-protein) reductase               | 11.44 | 3.03 | 7.13  | 0.087 | 0.133 | 0.114 |
| Pput_3801 | 148549007 | malonyl CoA-acyl carrier protein transacylase             | 0.54  | 0    | 0.46  | 0.004 | 0.000 | 0.007 |
| Pput_3802 | 148549008 | putative glycerol-3-phosphate acyltransferase PlsX        | 0.23  | 0    | 0.33  | 0.002 | 0.000 | 0.005 |
| Pput_3803 | 148549009 | 50S ribosomal protein L32                                 | 8.74  | 6.5  | 1.62  | 0.066 | 0.285 | 0.026 |
| Pput_3804 | 148549010 | hypothetical protein Pput_3804                            | 0.71  | 0    | 0     | 0.005 | 0.000 | 0.000 |
| Pput_3805 | 148549011 | Maf-like protein                                          | 0.39  | 0.39 | 0.54  | 0.003 | 0.017 | 0.009 |
| Pput_3806 | 148549012 | signal peptide peptidase SppA, 36K type                   | 0.63  | 0    | 0.22  | 0.005 | 0.000 | 0.004 |
| Pput_3807 | 148549013 | HAD family hydrolase                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3808 | 148549014 | RluA family pseudouridine synthase                        | 0.72  | 0    | 0     | 0.005 | 0.000 | 0.000 |
| Pput_3809 | 148549015 | ribonuclease                                              | 2.64  | 0.35 | 1.61  | 0.020 | 0.015 | 0.026 |
| Pput_3810 | 148549016 | UDP-N-acetylenolpyruvoylglucosamine reductase             | 0.21  | 0.21 | 0     | 0.002 | 0.009 | 0.000 |
| Pput_3811 | 148549017 | protein tyrosine phosphatase                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3812 | 148549018 | 3-deoxy-manno-octulosonate cytidylyltransferase           | 0.29  | 0    | 0     | 0.002 | 0.000 | 0.000 |
| Pput_3813 | 148549019 | hypothetical protein Pput_3813                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3814 | 148549020 | tetraacyldisaccharide 4'-kinase                           | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3815 | 148549021 | biopolymer transport protein ExbD/TolR                    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3816 | 148549022 | MotA/TolQ/ExbB proton channel                             | 0.34  | 0    | 0     | 0.003 | 0.000 | 0.000 |
| Pput_3817 | 148549023 | DNA internalization-related competence protein ComEC/Rec2 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3818 | 148549024 | hypothetical protein Pput_3818                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3819 | 148549025 | ABC-2 type transporter                                    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3820 | 148549026 | ABC transporter related                                   | 0.23  | 0    | 0.34  | 0.002 | 0.000 | 0.005 |
| Pput_3821 | 148549027 | glutathione S-transferase domain-containing protein       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3822 | 148549028 | acyl-CoA dehydrogenase                                    | 0.5   | 0.23 | 0.52  | 0.004 | 0.010 | 0.008 |
| Pput_3823 | 148549029 | hypothetical protein Pput_3823                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3824 | 148549030 | fimbrial protein-like protein                             | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3825 | 148549031 | pili assembly chaperone                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3826 | 148549032 | hypothetical protein Pput_3826                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3827 | 148549033 | outer membrane autotransporter                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3828 | 148549034 | hypothetical protein Pput_3828                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3829 | 148549035 | YD repeat-/RHS repeat-containing protein                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3830 | 148549036 | hypothetical protein Pput_3830                            | 0     | 0.04 | 0     | 0.000 | 0.002 | 0.000 |
| Pput_3831 | 148549037 | hypothetical protein Pput_3831                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3832 | 148549038 | hypothetical protein Pput_3832                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3833 | 148549039 | hypothetical protein Pput_3833                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3834 | 148549040 | YD repeat-containing protein                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3835 | 148549041 | fimbrial biogenesis outer membrane usher protein          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3836 | 148549042 | fimbrial protein-like protein                             | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3837 | 148549043 | hypothetical protein Pput_3837                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3838 | 148549044 | GAF domain-containing protein                             | 1.16  | 0    | 0     | 0.009 | 0.000 | 0.000 |
| Pput_3839 | 148549045 | hypothetical protein Pput_3839                            | 1.45  | 0.38 | 1.1   | 0.011 | 0.017 | 0.018 |
| Pput_3840 | 148549046 | histidine kinase                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3841 | 148549047 | glutathione peroxidase                                    | 2.75  | 0    | 2.68  | 0.021 | 0.000 | 0.043 |
| Pput_3842 | 148549048 | methionine sulfoxide reductase B                          | 3.54  | 0    | 0     | 0.027 | 0.000 | 0.000 |
| Pput_3843 | 148549049 | aminotransferase AlaT                                     | 2.24  | 0.27 | 1.31  | 0.017 | 0.012 | 0.021 |
| Pput_3844 | 148549050 | heat shock protein HtpX                                   | 0.68  | 0.12 | 0.36  | 0.005 | 0.005 | 0.006 |
| Pput_3845 | 148549051 | thiopurine S-methyltransferase                            | 0.93  | 0    | 0.84  | 0.007 | 0.000 | 0.013 |
| Pput_3846 | 148549052 | extradiol ring-cleavage dioxygenase III subunit B         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3847 | 148549053 | DEAD/DEAH box helicase domain-containing protein          | 1.35  | 0.19 | 1.08  | 0.010 | 0.008 | 0.017 |
| Pput_3848 | 148549054 | hypothetical protein Pput_3848                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3849 | 148549055 | phospho-2-dehydro-3-deoxyheptonate aldolase               | 0.69  | 0.43 | 0.78  | 0.005 | 0.019 | 0.012 |
| Pput_3850 | 148549056 | hypothetical protein Pput_3850                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3851 | 148549057 | LysR family transcriptional regulator                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3852 | 148549058 | hypothetical protein Pput_3852                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3853 | 148549059 | LysR family transcriptional regulator                     | 0.22  | 0    | 0     | 0.002 | 0.000 | 0.000 |
| Pput_3854 | 148549060 | MarR family transcriptional regulator                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3855 | 148549061 | OsmC family protein                                       | 12.59 | 1.2  | 19.44 | 0.095 | 0.053 | 0.311 |
| Pput_3856 | 148549062 | elongation factor P                                       | 9.15  | 1.29 | 5.84  | 0.069 | 0.056 | 0.093 |
| Pput_3857 | 148549063 | hypothetical protein Pput_3857                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3858 | 148549064 | GreA/GreB family elongation factor                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3859 | 148549065 | LysR family transcriptional regulator                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3860 | 148549066 | 3-ketoacyl-(acyl-carrier-protein) reductase               | 0.32  | 0.52 | 2.6   | 0.002 | 0.023 | 0.042 |
| Pput_3861 | 148549067 | LysR family transcriptional regulator                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3862 | 148549068 | major facilitator transporter                             | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3863 | 148549069 | hypothetical protein Pput_3863                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3864 | 148549070 | TonB-dependent siderophore receptor                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3865 | 148549071 | enoyl-CoA hydratase                                       | 0.33  | 0    | 0.48  | 0.002 | 0.000 | 0.008 |
| Pput_3866 | 148549072 | 1-acyl-sn-glycerol-3-phosphate acyltransferase            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3867 | 148549073 | Mg2+ transporter protein, CorA family protein             | 0     | 0    | 0.4   | 0.000 | 0.000 | 0.006 |
| Pput_3868 | 148549074 | amidotransferase                                          | 0     | 0    | 0.72  | 0.000 | 0.000 | 0.012 |
| Pput_3869 | 148549075 | hypothetical protein Pput_3869                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3870 | 148549076 | hypothetical protein Pput_3870                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3871 | 148549077 | hypothetical protein Pput_3871                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3872 | 148549078 | sulfatase                                                 | 0.2   | 0    | 0.15  | 0.002 | 0.000 | 0.002 |
| Pput_3873 | 148549079 | hypothetical protein Pput_3873                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_3874 | 148549080 | zinc/iron permease                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |

|           |           |                                                                      |      |      |      |       |       |       |
|-----------|-----------|----------------------------------------------------------------------|------|------|------|-------|-------|-------|
| Pput_3875 | 148549081 | hypothetical protein Pput_3875                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3876 | 148549082 | ankyrin                                                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3877 | 148549083 | hypothetical protein Pput_3877                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3878 | 148549084 | hypothetical protein Pput_3878                                       | 1.46 | 0    | 0.43 | 0.011 | 0.000 | 0.007 |
| Pput_3879 | 148549085 | major facilitator transporter                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3880 | 148549086 | chorismate synthase                                                  | 0.58 | 0.44 | 1.25 | 0.004 | 0.019 | 0.020 |
| Pput_3881 | 148549087 | alpha/beta hydrolase fold                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3882 | 148549088 | hypothetical protein Pput_3882                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3883 | 148549089 | transposase, IS111A/IS1328/IS1533                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3884 | 148549090 | N5-glutamine S-adenosyl-L-methionine-dependent methyltransferase     | 1.07 | 0.37 | 1.12 | 0.008 | 0.016 | 0.018 |
| Pput_3885 | 148549091 | isochorismatase hydrolase                                            | 1.49 | 0.39 | 4.57 | 0.011 | 0.017 | 0.073 |
| Pput_3886 | 148549092 | hypothetical protein Pput_3886                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3887 | 148549093 | Smr protein/MutS2                                                    | 0.83 | 0    | 0    | 0.006 | 0.000 | 0.000 |
| Pput_3888 | 148549094 | GTP cyclohydrolase I                                                 | 3.45 | 0.68 | 2.29 | 0.026 | 0.030 | 0.037 |
| Pput_3889 | 148549095 | glutaredoxin                                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3890 | 148549096 | glutathione S-transferase domain-containing protein                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3891 | 148549097 | benzoate transporter                                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3892 | 148549098 | methyl-accepting chemotaxis sensory transducer                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3893 | 148549099 | hypothetical protein Pput_3893                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3894 | 148549100 | short chain dehydrogenase                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3895 | 148549101 | alcohol dehydrogenase                                                | 1.81 | 0.64 | 2.12 | 0.014 | 0.028 | 0.034 |
| Pput_3896 | 148549102 | orotidine 5'-phosphate decarboxylase                                 | 0.83 | 0    | 0    | 0.006 | 0.000 | 0.000 |
| Pput_3897 | 148549103 | hypothetical protein Pput_3897                                       | 4.92 | 1.79 | 5.14 | 0.037 | 0.078 | 0.082 |
| Pput_3898 | 148549104 | helix-hairpin-helix repeat-containing competence protein ComEA       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3899 | 148549105 | hypothetical protein Pput_3899                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3900 | 148549106 | hypothetical protein Pput_3900                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3901 | 148549107 | hexapaptide repeat-containing transferase                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3902 | 148549108 | ABC-2 type transporter                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3903 | 148549109 | ABC transporter related                                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3904 | 148549110 | lipopolysaccharide biosynthesis protein                              | 0.41 | 0    | 0.3  | 0.003 | 0.000 | 0.005 |
| Pput_3905 | 148549111 | polysaccharide export protein                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3906 | 148549112 | capsule polysaccharide biosynthesis protein                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3907 | 148549113 | UDP-glucose 4-epimerase                                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3908 | 148549114 | 2-dehydro-3-deoxyphosphooctonate aldolase                            | 1.26 | 0    | 0    | 0.010 | 0.000 | 0.000 |
| Pput_3909 | 148549115 | 3-deoxy-D-manno-octulosonate cytidylyltransferase                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3910 | 148549116 | KpsF/GutQ family protein                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3911 | 148549117 | hypothetical protein Pput_3911                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3912 | 148549118 | capsule polysaccharide biosynthesis protein                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3913 | 148549119 | capsule polysaccharide biosynthesis protein                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3914 | 148549120 | short-chain dehydrogenase/reductase SDR                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3915 | 148549121 | sulfatase                                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3916 | 148549122 | GCN5-related N-acetyltransferase                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3917 | 148549123 | capsule polysaccharide biosynthesis protein                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3918 | 148549124 | phytanoyl-CoA dioxygenase                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3919 | 148549125 | hypothetical protein Pput_3919                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3920 | 148549126 | 8-amino-7-oxononanoate synthase                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3921 | 148549127 | Beta-ketoacyl synthase-like protein                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3922 | 148549128 | glycosyl transferase family protein                                  | 0.34 | 0    | 0    | 0.003 | 0.000 | 0.000 |
| Pput_3923 | 148549129 | dTDP-4-dehydrorhamnose 3,5-epimerase                                 | 0.98 | 0    | 0    | 0.007 | 0.000 | 0.000 |
| Pput_3924 | 148549130 | ABC-2 type transporter                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3925 | 148549131 | ABC transporter related                                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3926 | 148549132 | glycosyl transferase family protein                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3927 | 148549133 | hypothetical protein Pput_3927                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3928 | 148549134 | DegT/DnrJ/EryC1/StrS aminotransferase                                | 0.89 | 0    | 0    | 0.007 | 0.000 | 0.000 |
| Pput_3929 | 148549135 | glycosyl transferase family protein                                  | 0.22 | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_3930 | 148549136 | WxcM domain-containing protein                                       | 0.58 | 0    | 0.47 | 0.004 | 0.000 | 0.008 |
| Pput_3931 | 148549137 | GtrA family protein                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3932 | 148549138 | glycosyl transferase family protein                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3933 | 148549139 | glucose-1-phosphate thymidyltransferase                              | 1.07 | 0.11 | 1.27 | 0.008 | 0.005 | 0.020 |
| Pput_3934 | 148549140 | dTDP-4-dehydrorhamnose reductase                                     | 0.39 | 0    | 0    | 0.003 | 0.000 | 0.000 |
| Pput_3935 | 148549141 | dTDP-glucose 4,6-dehydratase                                         | 0.7  | 0    | 0.18 | 0.005 | 0.000 | 0.003 |
| Pput_3936 | 148549142 | polysaccharide biosynthesis protein CapD                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3937 | 148549143 | glycosyl transferase family protein                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3938 | 148549144 | NAD-dependent epimerase/dehydratase                                  | 0    | 0    | 0.47 | 0.000 | 0.000 | 0.008 |
| Pput_3939 | 148549145 | beta-lactamase domain-containing protein                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3940 | 148549146 | hypothetical protein Pput_3940                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3941 | 148549147 | integration host factor subunit beta                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3942 | 148549148 | 30S ribosomal protein S1                                             | 22.6 | 2.16 | 4.44 | 0.171 | 0.095 | 0.071 |
| Pput_3943 | 148549149 | cytidylate kinase                                                    | 0.79 | 0    | 0.34 | 0.006 | 0.000 | 0.005 |
| Pput_3944 | 148549150 | 3-phosphoshikimate 1-carboxyvinyltransferase                         | 0.53 | 0.26 | 0.78 | 0.004 | 0.011 | 0.012 |
| Pput_3945 | 148549151 | chorismate mutase                                                    | 0.94 | 1.21 | 1.32 | 0.007 | 0.053 | 0.021 |
| Pput_3946 | 148549152 | phosphoserine aminotransferase                                       | 2.01 | 0.39 | 1.45 | 0.015 | 0.017 | 0.023 |
| Pput_3947 | 148549153 | DNA gyrase subunit A                                                 | 1.18 | 0.24 | 1.15 | 0.009 | 0.011 | 0.018 |
| Pput_3948 | 148549154 | methylthioribose-1-phosphate isomerase                               | 0    | 0    | 0.2  | 0.000 | 0.000 | 0.003 |
| Pput_3949 | 148549155 | 3-demethylubiquinone-9 3-methyltransferase                           | 2.09 | 0.5  | 1.22 | 0.016 | 0.022 | 0.020 |
| Pput_3950 | 148549156 | phosphoglycolate phosphatase                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3951 | 148549157 | short chain dehydrogenase                                            | 0.5  | 0    | 0.86 | 0.004 | 0.000 | 0.014 |
| Pput_3952 | 148549158 | hypothetical protein Pput_3952                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3953 | 148549159 | diguanylate cyclase/phosphodiesterase with PAS/PAC and GAF sensor(s) | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3954 | 148549160 | ABC transporter related                                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3955 | 148549161 | DSBA oxidoreductase                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3956 | 148549162 | hypothetical protein Pput_3956                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3957 | 148549163 | BolA family protein                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3958 | 148549164 | hypothetical protein Pput_3958                                       | 5.18 | 0    | 0    | 0.039 | 0.000 | 0.000 |
| Pput_3959 | 148549165 | fumarate hydratase                                                   | 0.48 | 0.16 | 0.48 | 0.004 | 0.007 | 0.008 |
| Pput_3960 | 148549166 | hypothetical protein Pput_3960                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3961 | 148549167 | hypothetical protein Pput_3961                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3962 | 148549168 | hypothetical protein Pput_3962                                       | 1.32 | 0.55 | 1.26 | 0.010 | 0.024 | 0.020 |
| Pput_3963 | 148549169 | 5-methylaminomethyl-2-thiouridine methyltransferase                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |

|           |           |                                                                            |       |      |      |       |       |       |
|-----------|-----------|----------------------------------------------------------------------------|-------|------|------|-------|-------|-------|
| Pput_3964 | 148549170 | asparagine synthase (glutamine-hydrolyzing)                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3965 | 148549171 | glutathione synthase                                                       | 0.12  | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_3966 | 148549172 | peptidase M42 family protein                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3967 | 148549173 | hypothetical protein Pput_3967                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3968 | 148549174 | carbon storage regulator, CsrA                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3969 | 148549175 | short chain dehydrogenase                                                  | 0.39  | 0    | 0.4  | 0.003 | 0.000 | 0.006 |
| Pput_3970 | 148549176 | hypothetical protein Pput_3970                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3971 | 148549177 | hypothetical protein Pput_3971                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3972 | 148549178 | hypothetical protein Pput_3972                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3973 | 148549179 | hypothetical protein Pput_3973                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3974 | 148549180 | hypothetical protein Pput_3974                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3975 | 148549181 | hypothetical protein Pput_3975                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3976 | 148549182 | acetate permease                                                           | 0.89  | 0.56 | 6.06 | 0.007 | 0.025 | 0.097 |
| Pput_3977 | 148549183 | hypothetical protein Pput_3977                                             | 0.68  | 0    | 1.7  | 0.005 | 0.000 | 0.027 |
| Pput_3978 | 148549184 | substrate-binding region of ABC-type glycine betaine transport system      | 1.81  | 0    | 0.96 | 0.014 | 0.000 | 0.015 |
| Pput_3979 | 148549185 | exo-beta-1 3-glucanase-like protein                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3980 | 148549186 | hypothetical protein Pput_3980                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3981 | 148549187 | hypothetical protein Pput_3981                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3982 | 148549188 | VacJ family lipoprotein                                                    | 0.26  | 0.26 | 0.5  | 0.002 | 0.011 | 0.008 |
| Pput_3983 | 148549189 | patatin                                                                    | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3984 | 148549190 | lipid A biosynthesis lauroyl acyltransferase                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3985 | 148549191 | septum formation inhibitor                                                 | 0.3   | 0    | 0.44 | 0.002 | 0.000 | 0.007 |
| Pput_3986 | 148549192 | septum site-determining protein MinD                                       | 4.92  | 0.82 | 2.07 | 0.037 | 0.036 | 0.033 |
| Pput_3987 | 148549193 | cell division topological specificity factor MinE                          | 6.39  | 2    | 1.41 | 0.048 | 0.088 | 0.023 |
| Pput_3988 | 148549194 | pseudouridine synthase                                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3989 | 148549195 | putative aminopeptidase 2                                                  | 0.46  | 0.16 | 0.51 | 0.003 | 0.007 | 0.008 |
| Pput_3990 | 148549196 | hypothetical protein Pput_3990                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3991 | 148549197 | MscS mechanosensitive ion channel                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3992 | 148549198 | GntR family transcriptional regulator                                      | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3993 | 148549199 | ABC-type Fe3+ transport system periplasmic component-like protein          | 0.74  | 0    | 0.65 | 0.006 | 0.000 | 0.010 |
| Pput_3994 | 148549200 | type I phosphodiesterase/nucleotide pyrophosphatase                        | 0     | 0.12 | 0    | 0.000 | 0.005 | 0.000 |
| Pput_3995 | 148549201 | binding-protein-dependent transport systems inner membrane component       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3996 | 148549202 | binding-protein-dependent transport systems inner membrane component       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_3997 | 148549203 | ABC transporter related                                                    | 0     | 0.34 | 0.92 | 0.000 | 0.015 | 0.015 |
| Pput_3998 | 148549204 | HAD family hydrolase                                                       | 0     | 0    | 0.33 | 0.000 | 0.000 | 0.005 |
| Pput_3999 | 148549205 | quinone oxidoreductase putative, PIG3                                      | 1.56  | 0.23 | 1.44 | 0.012 | 0.010 | 0.023 |
| Pput_4000 | 148549206 | carboxyl-terminal protease                                                 | 0.4   | 0    | 0.86 | 0.003 | 0.000 | 0.014 |
| Pput_4001 | 148549207 | diguanylate phosphodiesterase                                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4002 | 148549208 | hypothetical protein Pput_4002                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4003 | 148549209 | XRE family transcriptional regulator                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4004 | 148549210 | hypothetical protein Pput_4004                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4005 | 148549211 | peptidylprolyl isomerase, FKBP-type                                        | 11.85 | 0    | 1.08 | 0.090 | 0.000 | 0.017 |
| Pput_4006 | 148549212 | LysR family transcriptional regulator                                      | 0.34  | 0    | 0.71 | 0.003 | 0.000 | 0.011 |
| Pput_4007 | 148549213 | hypothetical protein Pput_4007                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4008 | 148549214 | hypothetical protein Pput_4008                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4009 | 148549215 | helix-turn-helix domain-containing protein                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4010 | 148549216 | major facilitator transporter                                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4011 | 148549217 | fumarylacetoacetate (FAA) hydrolase                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4012 | 148549218 | short-chain dehydrogenase/reductase SDR                                    | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4013 | 148549219 | D-isomer specific 2-hydroxyacid dehydrogenase, NAD-binding                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4014 | 148549220 | nitrite reductase (NAD(P)H), small subunit                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4015 | 148549221 | nitrite reductase (NAD(P)H), large subunit                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4016 | 148549222 | molybdopterin oxidoreductase                                               | 0     | 0    | 0.09 | 0.000 | 0.000 | 0.001 |
| Pput_4017 | 148549223 | methionine aminopeptidase, type I                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4018 | 148549224 | recombination associated protein                                           | 2.23  | 0.35 | 1.5  | 0.017 | 0.015 | 0.024 |
| Pput_4019 | 148549225 | small multidrug resistance protein                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4020 | 148549226 | phospholipid/glycerol acyltransferase                                      | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4021 | 148549227 | amidohydrolase 2                                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4022 | 148549228 | major facilitator transporter                                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4023 | 148549229 | GntR family transcriptional regulator                                      | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4024 | 148549230 | major facilitator transporter                                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4025 | 148549231 | integral membrane sensor hybrid histidine kinase                           | 0     | 0    | 0.15 | 0.000 | 0.000 | 0.002 |
| Pput_4026 | 148549232 | hypothetical protein Pput_4026                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4027 | 148549233 | Sel1 domain-containing protein                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4028 | 148549234 | hypothetical protein Pput_4028                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4029 | 148549235 | hypothetical protein Pput_4029                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4030 | 148549236 | membrane protein involved in aromatic hydrocarbon degradation              | 0.26  | 0.73 | 1.54 | 0.002 | 0.032 | 0.025 |
| Pput_4031 | 148549237 | LysR family transcriptional regulator                                      | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4032 | 148549238 | hypothetical protein Pput_4032                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4033 | 148549239 | glutathione peroxidase                                                     | 0.57  | 0    | 0    | 0.004 | 0.000 | 0.000 |
| Pput_4034 | 148549240 | hypothetical protein Pput_4034                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4035 | 148549241 | major facilitator transporter                                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4036 | 148549242 | MarR family transcriptional regulator                                      | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4037 | 148549243 | glycoside hydrolase family protein                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4038 | 148549244 | cobalamin synthase                                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4039 | 148549245 | phosphoglycerate mutase                                                    | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4040 | 148549246 | nicotinate-nucleotide-dimethylbenzimidazole phosphoribosyltransferase      | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4041 | 148549247 | adenosylcobinamide kinase/adenosylcobinamide-phosphate guanylyltransferase | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4042 | 148549248 | cobyric acid synthase                                                      | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4043 | 148549249 | threonine-phosphate decarboxylase                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4044 | 148549250 | cobalamin biosynthesis protein                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4045 | 148549251 | cob(II)yrinic acid a,c-diamide reductase                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4046 | 148549252 | cobyric acid a,c-diamide synthase                                          | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4047 | 148549253 | cob(II)yrinic acid a,c-diamide adenosyltransferase                         | 4.06  | 0.86 | 0.93 | 0.031 | 0.038 | 0.015 |
| Pput_4048 | 148549254 | NLP/P60 protein                                                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4049 | 148549255 | NLP/P60 protein                                                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4050 | 148549256 | DNA replication initiation factor                                          | 0.49  | 0.31 | 1.01 | 0.004 | 0.014 | 0.016 |
| Pput_4051 | 148549257 | hypothetical protein Pput_4051                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4052 | 148549258 | hypothetical protein Pput_4052                                             | 0.21  | 0.21 | 0.66 | 0.002 | 0.009 | 0.011 |

|           |           |                                                                         |      |      |      |       |       |       |
|-----------|-----------|-------------------------------------------------------------------------|------|------|------|-------|-------|-------|
| Pput_4053 | 148549259 | phosphoribosylaminoimidazole synthetase                                 | 0.61 | 0    | 0.31 | 0.005 | 0.000 | 0.005 |
| Pput_4054 | 148549260 | phosphoribosylglycinamide formyltransferase                             | 0.35 | 0    | 0    | 0.003 | 0.000 | 0.000 |
| Pput_4055 | 148549261 | hypothetical protein Pput_4055                                          | 2.99 | 0.31 | 3.84 | 0.023 | 0.014 | 0.061 |
| Pput_4056 | 148549262 | hypothetical protein Pput_4056                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4057 | 148549263 | glucose-methanol-choline oxidoreductase                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4058 | 148549264 | hypothetical protein Pput_4058                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4059 | 148549265 | hypothetical protein Pput_4059                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4060 | 148549266 | hypothetical protein Pput_4060                                          | 7.31 | 0.41 | 0    | 0.055 | 0.018 | 0.000 |
| Pput_4061 | 148549267 | nucleoside triphosphate pyrophosphohydrolase                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4062 | 148549268 | (p)ppGpp synthetase I, SpoT/RelA                                        | 0.75 | 0.19 | 0.45 | 0.006 | 0.008 | 0.007 |
| Pput_4063 | 148549269 | 23S rRNA 5-methyluridine methyltransferase                              | 0.4  | 0.24 | 0.4  | 0.003 | 0.011 | 0.006 |
| Pput_4064 | 148549270 | cysteine synthase B                                                     | 0.7  | 0.53 | 0.35 | 0.005 | 0.023 | 0.006 |
| Pput_4065 | 148549271 | integral membrane sensor signal transduction histidine kinase           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4066 | 148549272 | two component transcriptional regulator                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4067 | 148549273 | multi-sensor hybrid histidine kinase                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4068 | 148549274 | D-isomer specific 2-hydroxyacid dehydrogenase, NAD-binding              | 0.32 | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_4069 | 148549275 | hypothetical protein Pput_4069                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4070 | 148549276 | protein of unknown function DUF306, Meta and HslJ                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4071 | 148549277 | alkyl hydroperoxide reductase/ Thiol specific antioxidant/ Mal allergen | 0.75 | 0    | 0    | 0.006 | 0.000 | 0.000 |
| Pput_4072 | 148549278 | arsenate reductase                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4073 | 148549279 | flavodoxin/nitric oxide synthase                                        | 1.88 | 0.94 | 2.32 | 0.014 | 0.041 | 0.037 |
| Pput_4074 | 148549280 | hypothetical protein Pput_4074                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4075 | 148549281 | 3-methyladenine DNA glycosylase-like protein                            | 0.47 | 0    | 0    | 0.004 | 0.000 | 0.000 |
| Pput_4076 | 148549282 | PP-loop domain-containing protein                                       | 0.26 | 0.72 | 0    | 0.002 | 0.032 | 0.000 |
| Pput_4077 | 148549283 | hypothetical protein Pput_4077                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4078 | 148549284 | hypothetical protein Pput_4078                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4079 | 148549285 | oxidoreductase FAD/NAD(P)-binding subunit                               | 3.85 | 0.27 | 0.7  | 0.029 | 0.012 | 0.011 |
| Pput_4080 | 148549286 | LysR family transcriptional regulator                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4081 | 148549287 | diacylglycerol kinase                                                   | 0.69 | 0    | 0    | 0.005 | 0.000 | 0.000 |
| Pput_4082 | 148549288 | two component LuxR family transcriptional regulator                     | 1.62 | 0.82 | 2.51 | 0.012 | 0.036 | 0.040 |
| Pput_4083 | 148549289 | DTW domain-containing protein                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4084 | 148549290 | hypothetical protein Pput_4084                                          | 1.07 | 0    | 4.44 | 0.008 | 0.000 | 0.071 |
| Pput_4085 | 148549291 | hypothetical protein Pput_4085                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4086 | 148549292 | hypothetical protein Pput_4086                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4087 | 148549293 | recombination regulator RecX                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4088 | 148549294 | recombinase A                                                           | 0.77 | 0.61 | 0.82 | 0.006 | 0.027 | 0.013 |
| Pput_4089 | 148549295 | CinA domain-containing protein                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4090 | 148549296 | hypothetical protein Pput_4090                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4091 | 148549297 | hypothetical protein Pput_4091                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4092 | 148549298 | hypothetical protein Pput_4092                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4093 | 148549299 | hypothetical protein Pput_4093                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4094 | 148549300 | hypothetical protein Pput_4094                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4095 | 148549301 | hypothetical protein Pput_4095                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4096 | 148549302 | hypothetical protein Pput_4096                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4097 | 148549303 | hypothetical protein Pput_4097                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4098 | 148549304 | hypothetical protein Pput_4098                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4099 | 148549305 | hypothetical protein Pput_4099                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4100 | 148549306 | hypothetical protein Pput_4100                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4101 | 148549307 | hypothetical protein Pput_4101                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4102 | 148549308 | hypothetical protein Pput_4102                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4103 | 148549309 | hypothetical protein Pput_4103                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4104 | 148549310 | hypothetical protein Pput_4104                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4105 | 148549311 | hypothetical protein Pput_4105                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4106 | 148549312 | hypothetical protein Pput_4106                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4107 | 148549313 | hypothetical protein Pput_4107                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4108 | 148549314 | hypothetical protein Pput_4108                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4109 | 148549315 | HK97 family phage protein                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4110 | 148549316 | phage head-tail adaptor, putative                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4111 | 148549317 | hypothetical protein Pput_4111                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4112 | 148549318 | hypothetical protein Pput_4112                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4113 | 148549319 | HK97 family phage portal protein                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4114 | 148549320 | hypothetical protein Pput_4114                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4115 | 148549321 | peptidase U35, phage prohead HK97                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4116 | 148549322 | phage terminase                                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4117 | 148549323 | hypothetical protein Pput_4117                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4118 | 148549324 | HNH endonuclease                                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4119 | 148549325 | hypothetical protein Pput_4119                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4120 | 148549326 | hypothetical protein Pput_4120                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4121 | 148549327 | hypothetical protein Pput_4121                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4122 | 148549328 | hypothetical protein Pput_4122                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4123 | 148549329 | hypothetical protein Pput_4123                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4124 | 148549330 | hypothetical protein Pput_4124                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4125 | 148549331 | hypothetical protein Pput_4125                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4126 | 148549332 | phage integrase family protein                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4127 | 148549333 | VRR-NUC domain-containing protein                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4128 | 148549334 | hypothetical protein Pput_4128                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4129 | 148549335 | IstB ATP binding domain-containing protein                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4130 | 148549336 | phage replication protein O                                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4131 | 148549337 | putative phage repressor                                                | 0.27 | 0    | 0.7  | 0.002 | 0.000 | 0.011 |
| Pput_4132 | 148549338 | hypothetical protein Pput_4132                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4133 | 148549339 | hypothetical protein Pput_4133                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4134 | 148549340 | response regulator receiver protein                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4135 | 148549341 | hypothetical protein Pput_4135                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4136 | 148549342 | single-strand binding protein                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4137 | 148549343 | hypothetical protein Pput_4137                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4138 | 148549344 | hypothetical protein Pput_4138                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4139 | 148549345 | hypothetical protein Pput_4139                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4140 | 148549346 | hypothetical protein Pput_4140                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4141 | 148549347 | hypothetical protein Pput_4141                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |

|           |           |                                                                 |        |       |       |       |       |       |
|-----------|-----------|-----------------------------------------------------------------|--------|-------|-------|-------|-------|-------|
| Pput_4142 | 148549348 | hypothetical protein Pput_4142                                  | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4143 | 148549349 | hypothetical protein Pput_4143                                  | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4144 | 148549350 | hypothetical protein Pput_4144                                  | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4145 | 148549351 | hypothetical protein Pput_4145                                  | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4146 | 148549352 | hypothetical protein Pput_4146                                  | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4147 | 148549353 | hypothetical protein Pput_4147                                  | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4148 | 148549354 | hypothetical protein Pput_4148                                  | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4149 | 148549355 | hypothetical protein Pput_4149                                  | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4150 | 148549356 | phage integrase family protein                                  | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4151 | 148549357 | zeta toxin family protein                                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4152 | 148549358 | DNA mismatch repair protein MutS                                | 0.08   | 0     | 0.12  | 0.001 | 0.000 | 0.002 |
| Pput_4153 | 148549359 | 4Fe-4S ferredoxin iron-sulfur binding domain-containing protein | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4154 | 148549360 | RNA polymerase sigma factor RpoS                                | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4155 | 148549361 | peptidase M23B                                                  | 0.29   | 0.14  | 1.39  | 0.002 | 0.006 | 0.022 |
| Pput_4156 | 148549362 | protein-L-isoaspartate O-methyltransferase                      | 0.33   | 0     | 0.63  | 0.002 | 0.000 | 0.010 |
| Pput_4157 | 148549363 | stationary phase survival protein SurE                          | 0      | 0.14  | 0     | 0.000 | 0.006 | 0.000 |
| Pput_4158 | 148549364 | tRNA pseudouridine synthase D                                   | 0      | 0.32  | 0.32  | 0.000 | 0.014 | 0.005 |
| Pput_4159 | 148549365 | 2-C-methyl-D-erythritol 2,4-cyclodiphosphate synthase           | 0      | 0     | 0.86  | 0.000 | 0.000 | 0.014 |
| Pput_4160 | 148549366 | S-formylglutathione hydrolase                                   | 0.68   | 0     | 0     | 0.005 | 0.000 | 0.000 |
| Pput_4161 | 148549367 | S-(hydroxymethyl)glutathione dehydrogenase                      | 0.43   | 0.31  | 0.63  | 0.003 | 0.014 | 0.010 |
| Pput_4162 | 148549368 | LysR family transcriptional regulator                           | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4163 | 148549369 | 2-C-methyl-D-erythritol 4-phosphate cytidyltransferase          | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4164 | 148549370 | septum formation initiator                                      | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4165 | 148549371 | phosphopyruvate hydratase                                       | 5.33   | 0.48  | 2.72  | 0.040 | 0.021 | 0.043 |
| Pput_4166 | 148549372 | 2-dehydro-3-deoxyphosphooctonate aldolase                       | 0.89   | 0     | 0.52  | 0.007 | 0.000 | 0.008 |
| Pput_4167 | 148549373 | CTP synthetase                                                  | 4.02   | 0.62  | 3.42  | 0.030 | 0.027 | 0.055 |
| Pput_4168 | 148549374 | hypothetical protein Pput_4168                                  | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4169 | 148549375 | tRNA(Ile)-lysine synthetase                                     | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4170 | 148549376 | acetyl-CoA carboxylase carboxyltransferase subunit alpha        | 4.89   | 1.15  | 2.42  | 0.037 | 0.050 | 0.039 |
| Pput_4171 | 148549377 | DNA polymerase III subunit alpha                                | 0      | 0     | 0.12  | 0.000 | 0.000 | 0.002 |
| Pput_4172 | 148549378 | ribonuclease HII                                                | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4173 | 148549379 | lipid-A-disaccharide synthase                                   | 0.19   | 0     | 0     | 0.001 | 0.000 | 0.000 |
| Pput_4174 | 148549380 | UDP-N-acetylglucosamine acyltransferase                         | 0.46   | 0.29  | 0.29  | 0.003 | 0.013 | 0.005 |
| Pput_4175 | 148549381 | (3R)-hydroxymyristoyl-ACP dehydratase                           | 3.66   | 0.75  | 0.52  | 0.028 | 0.033 | 0.008 |
| Pput_4176 | 148549382 | UDP-3-O-[3-hydroxymyristoyl] glucosamine N-acyltransferase      | 0      | 0.22  | 0     | 0.000 | 0.010 | 0.000 |
| Pput_4177 | 148549383 | outer membrane chaperone Skp (OmpH)                             | 28.01  | 0.45  | 3.17  | 0.212 | 0.020 | 0.051 |
| Pput_4178 | 148549384 | surface antigen (D15)                                           | 1.41   | 0.46  | 0.33  | 0.011 | 0.020 | 0.005 |
| Pput_4179 | 148549385 | putative membrane-associated zinc metalloprotease               | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4180 | 148549386 | 1-deoxy-D-xylulose 5-phosphate reductoisomerase                 | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4181 | 148549387 | phosphatidate cytidyltransferase                                | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4182 | 148549388 | undecaprenyl diphosphate synthase                               | 0.46   | 0     | 0     | 0.003 | 0.000 | 0.000 |
| Pput_4183 | 148549389 | ribosome recycling factor                                       | 28.2   | 0.69  | 2.22  | 0.214 | 0.030 | 0.035 |
| Pput_4184 | 148549390 | uridylylate kinase                                              | 1.09   | 0     | 0     | 0.008 | 0.000 | 0.000 |
| Pput_4185 | 148549391 | elongation factor Ts                                            | 216.26 | 1.86  | 9.73  | 1.638 | 0.081 | 0.156 |
| Pput_4186 | 148549392 | 30S ribosomal protein S2                                        | 44.39  | 10.96 | 29.24 | 0.336 | 0.480 | 0.467 |
| Pput_4187 | 148549393 | methionine aminopeptidase                                       | 4.79   | 0.63  | 1.39  | 0.036 | 0.028 | 0.022 |
| Pput_4188 | 148549394 | PII uridylyl-transferase                                        | 0.11   | 0     | 0.08  | 0.001 | 0.000 | 0.001 |
| Pput_4189 | 148549395 | succinyldiaminopimelate transaminase                            | 0      | 0.28  | 0     | 0.000 | 0.012 | 0.000 |
| Pput_4190 | 148549396 | Na <sup>+</sup> /H <sup>+</sup> antiporter                      | 0      | 0.12  | 0     | 0.000 | 0.005 | 0.000 |
| Pput_4191 | 148549397 | plasmid maintenance system killer                               | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4192 | 148549398 | XRE family plasmid maintenance system antidote protein          | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4193 | 148549399 | arsenate reductase and related                                  | 0.58   | 0     | 0     | 0.004 | 0.000 | 0.000 |
| Pput_4194 | 148549400 | tetrahydridipicolinate N-succinyltransferase-like protein       | 2.44   | 0.64  | 1.82  | 0.018 | 0.028 | 0.029 |
| Pput_4195 | 148549401 | aminotransferase, class V                                       | 0      | 0.18  | 0     | 0.000 | 0.008 | 0.000 |
| Pput_4196 | 148549402 | Fe-S metabolism associated SufE                                 | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4197 | 148549403 | UBA/THIF-type NAD/FAD binding protein                           | 0      | 0.27  | 0     | 0.000 | 0.012 | 0.000 |
| Pput_4198 | 148549404 | glycosyl transferase family protein                             | 0      | 0     | 0.24  | 0.000 | 0.000 | 0.004 |
| Pput_4199 | 148549405 | succinyl-diaminopimelate desuccinylase                          | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4200 | 148549406 | rRNA (guanine-N(1)-)-methyltransferase                          | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4201 | 148549407 | hypothetical protein Pput_4201                                  | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4202 | 148549408 | cold-shock DNA-binding domain-containing protein                | 1.34   | 0     | 1.06  | 0.010 | 0.000 | 0.017 |
| Pput_4203 | 148549409 | glycerol-3-phosphate acyltransferase                            | 0      | 0     | 0.2   | 0.000 | 0.000 | 0.003 |
| Pput_4204 | 148549410 | hypothetical protein Pput_4204                                  | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4205 | 148549411 | hypothetical protein Pput_4205                                  | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4206 | 148549412 | acriflavin resistance protein                                   | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4207 | 148549413 | RND family efflux transporter MFP subunit                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4208 | 148549414 | TetR family transcriptional regulator                           | 0.51   | 0     | 0     | 0.004 | 0.000 | 0.000 |
| Pput_4209 | 148549415 | hypothetical protein Pput_4209                                  | 0      | 0.29  | 0     | 0.000 | 0.013 | 0.000 |
| Pput_4210 | 148549416 | hypothetical protein Pput_4210                                  | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4211 | 148549417 | extensin family protein                                         | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4212 | 148549418 | PEP phosphonomutase and related enzymes-like protein            | 0.72   | 0     | 0     | 0.005 | 0.000 | 0.000 |
| Pput_4213 | 148549419 | hypothetical protein Pput_4213                                  | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4214 | 148549420 | hypothetical protein Pput_4214                                  | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4215 | 148549421 | peptidase M22, glycoprotease                                    | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4216 | 148549422 | adenylate kinase                                                | 7.52   | 1.48  | 6.58  | 0.057 | 0.065 | 0.105 |
| Pput_4217 | 148549423 | phosphoenolpyruvate carboxylase                                 | 0.55   | 0.21  | 0.84  | 0.004 | 0.009 | 0.013 |
| Pput_4218 | 148549424 | hypothetical protein Pput_4218                                  | 1.24   | 0     | 0     | 0.009 | 0.000 | 0.000 |
| Pput_4219 | 148549425 | hypothetical protein Pput_4219                                  | 0.91   | 0     | 0.56  | 0.007 | 0.000 | 0.009 |
| Pput_4220 | 148549426 | OmpA/MotB domain-containing protein                             | 5.31   | 1.36  | 0.9   | 0.040 | 0.060 | 0.014 |
| Pput_4221 | 148549427 | hypothetical protein Pput_4221                                  | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4222 | 148549428 | alpha/beta fold family hydrolase-like protein                   | 0      | 0     | 0.25  | 0.000 | 0.000 | 0.004 |
| Pput_4223 | 148549429 | hypothetical protein Pput_4223                                  | 0      | 0     | 0.16  | 0.000 | 0.000 | 0.003 |
| Pput_4224 | 148549430 | hypothetical protein Pput_4224                                  | 2.59   | 0     | 0     | 0.020 | 0.000 | 0.000 |
| Pput_4225 | 148549431 | TetR family transcriptional regulator                           | 0      | 0     | 0.46  | 0.000 | 0.000 | 0.007 |
| Pput_4226 | 148549432 | lysyl-tRNA synthetase                                           | 2.45   | 0.37  | 2.12  | 0.019 | 0.016 | 0.034 |
| Pput_4227 | 148549433 | peptide chain release factor 2                                  | 0.37   | 0.88  | 0.48  | 0.003 | 0.039 | 0.008 |
| Pput_4228 | 148549434 | response regulator receiver modulated diguanylate cyclase       | 0.21   | 0     | 0.68  | 0.002 | 0.000 | 0.011 |
| Pput_4229 | 148549435 | chemotaxis-specific methylesterase                              | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4230 | 148549436 | CheA signal transduction histidine kinase                       | 0.09   | 0     | 0     | 0.001 | 0.000 | 0.000 |



|           |           |                                                                      |        |       |       |       |       |       |
|-----------|-----------|----------------------------------------------------------------------|--------|-------|-------|-------|-------|-------|
| Pput_4231 | 148549437 | putative CheW protein                                                | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4232 | 148549438 | protein-glutamate O-methyltransferase                                | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4233 | 148549439 | putative CheW protein                                                | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4234 | 148549440 | methyl-accepting chemotaxis sensory transducer                       | 0.26   | 0.13  | 0.59  | 0.002 | 0.006 | 0.009 |
| Pput_4235 | 148549441 | hypothetical protein Pput_4235                                       | 1.41   | 1.8   | 0     | 0.011 | 0.079 | 0.000 |
| Pput_4236 | 148549442 | extracellular solute-binding protein                                 | 1.16   | 0     | 1.22  | 0.009 | 0.000 | 0.020 |
| Pput_4237 | 148549443 | spermidine/putrescine ABC transporter ATPase subunit                 | 0.33   | 0.33  | 1.25  | 0.002 | 0.014 | 0.020 |
| Pput_4238 | 148549444 | binding-protein-dependent transport systems inner membrane component | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4239 | 148549445 | binding-protein-dependent transport systems inner membrane component | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4240 | 161936354 | gamma-aminobutyraldehyde dehydrogenase                               | 1.02   | 0.33  | 1.06  | 0.008 | 0.014 | 0.017 |
| Pput_4241 | 148549447 | hypothetical protein Pput_4241                                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4242 | 148549448 | HicB family protein                                                  | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4243 | 148549449 | NADH:flavin oxidoreductase/NADH oxidase                              | 3.5    | 1.64  | 5.21  | 0.027 | 0.072 | 0.083 |
| Pput_4244 | 148549450 | single-stranded-DNA-specific exonuclease RecJ                        | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4245 | 148549451 | YaeQ family protein                                                  | 1.63   | 0.18  | 0     | 0.012 | 0.008 | 0.000 |
| Pput_4246 | 148549452 | L-carnitine dehydratase/bile acid-inducible protein F                | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4247 | 148549453 | hypothetical protein Pput_4247                                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4248 | 148549454 | hypothetical protein Pput_4248                                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4249 | 148549455 | response regulator receiver protein                                  | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4250 | 148549456 | threonine synthase                                                   | 1.15   | 0.23  | 0.97  | 0.009 | 0.010 | 0.016 |
| Pput_4251 | 148549457 | homoserine dehydrogenase                                             | 1.64   | 0.43  | 0.81  | 0.012 | 0.019 | 0.013 |
| Pput_4252 | 148549458 | thiol:disulfide interchange protein DsbC                             | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4253 | 148549459 | site-specific tyrosine recombinase XerD                              | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4254 | 148549460 | sodium/hydrogen exchanger                                            | 0      | 0     | 0.12  | 0.000 | 0.000 | 0.002 |
| Pput_4255 | 148549461 | thioesterase superfamily protein                                     | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4256 | 148549462 | 50S ribosomal protein L19                                            | 481.95 | 23.04 | 61.27 | 3.651 | 1.009 | 0.979 |
| Pput_4257 | 148549463 | tRNA (guanine-N(1)-)-methyltransferase                               | 0.29   | 0     | 0     | 0.002 | 0.000 | 0.000 |
| Pput_4258 | 148549464 | 16S rRNA-processing protein RimM                                     | 0.61   | 0     | 0     | 0.005 | 0.000 | 0.000 |
| Pput_4259 | 148549465 | 30S ribosomal protein S16                                            | 30.96  | 1.99  | 5.29  | 0.235 | 0.087 | 0.085 |
| Pput_4260 | 148549466 | signal recognition particle protein                                  | 0.41   | 0.16  | 0.66  | 0.003 | 0.007 | 0.011 |
| Pput_4261 | 148549467 | cytochrome c assembly protein                                        | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4262 | 148549468 | transporter-associated region                                        | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4263 | 148549469 | general substrate transporter                                        | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4264 | 148549470 | phosphoribosylglycinamide formyltransferase 2                        | 0.29   | 0.52  | 2.72  | 0.002 | 0.023 | 0.043 |
| Pput_4265 | 148549471 | hypothetical protein Pput_4265                                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4266 | 148549472 | hypothetical protein Pput_4266                                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4267 | 148549473 | hexapeptide repeat-containing transferase                            | 4.94   | 0.46  | 0.67  | 0.037 | 0.020 | 0.011 |
| Pput_4268 | 148549474 | NUDIX hydrolase                                                      | 0      | 0     | 0.32  | 0.000 | 0.000 | 0.005 |
| Pput_4269 | 148549475 | NUDIX hydrolase                                                      | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4270 | 148549476 | hypothetical protein Pput_4270                                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4271 | 148549477 | polypeptide-transport-associated domain-containing protein           | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4272 | 148549478 | filamentous haemagglutinin outer membrane protein                    | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4273 | 148549479 | hypothetical protein Pput_4273                                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4274 | 148549480 | hypothetical protein Pput_4274                                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4275 | 148549481 | TonB-dependent receptor                                              | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4276 | 148549482 | carbohydrate-selective porin OprB                                    | 0      | 0.34  | 0     | 0.000 | 0.015 | 0.000 |
| Pput_4277 | 148549483 | Pyrrrolo-quinoline quinone                                           | 0.74   | 0.09  | 0.22  | 0.006 | 0.004 | 0.004 |
| Pput_4278 | 148549484 | ATP-dependent protease La                                            | 2.28   | 0.22  | 0.9   | 0.017 | 0.010 | 0.014 |
| Pput_4279 | 148549485 | secreted protein-like protein                                        | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4280 | 148549486 | putative methyltransferase                                           | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4281 | 148549487 | putative methyltransferase                                           | 0.2    | 0     | 0     | 0.002 | 0.000 | 0.000 |
| Pput_4282 | 148549488 | hypothetical protein Pput_4282                                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4283 | 148549489 | two component heavy metal response transcriptional regulator         | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4284 | 148549490 | heavy metal sensor signal transduction histidine kinase              | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4285 | 148549491 | pyridoxine 5'-phosphate synthase                                     | 2.4    | 0.72  | 4.49  | 0.018 | 0.032 | 0.072 |
| Pput_4286 | 148549492 | DNA repair protein RecO                                              | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4287 | 148549493 | GTP-binding protein Era                                              | 2.52   | 0.37  | 0.57  | 0.019 | 0.016 | 0.009 |
| Pput_4288 | 148549494 | ribonuclease III                                                     | 0      | 1     | 1.04  | 0.000 | 0.044 | 0.017 |
| Pput_4289 | 148549495 | signal peptidase I                                                   | 1.07   | 0     | 0.52  | 0.008 | 0.000 | 0.008 |
| Pput_4290 | 148549496 | GTP-binding protein LepA                                             | 0.53   | 0.12  | 0.66  | 0.004 | 0.005 | 0.011 |
| Pput_4291 | 148549497 | protease Do                                                          | 2.33   | 0.24  | 1.08  | 0.018 | 0.011 | 0.017 |
| Pput_4292 | 148549498 | sigma E regulatory protein, MucB/RseB                                | 1.36   | 0.36  | 1.09  | 0.010 | 0.016 | 0.017 |
| Pput_4293 | 148549499 | anti sigma-E protein, RseA                                           | 0.4    | 0     | 0     | 0.003 | 0.000 | 0.000 |
| Pput_4294 | 148549500 | RNA polymerase sigma factor AlgU                                     | 1.21   | 0.88  | 0.34  | 0.009 | 0.039 | 0.005 |
| Pput_4295 | 148549501 | L-aspartate oxidase                                                  | 0.27   | 0     | 0.19  | 0.002 | 0.000 | 0.003 |
| Pput_4296 | 148549502 | hypothetical protein Pput_4296                                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4297 | 148549503 | hypothetical protein Pput_4297                                       | 0.93   | 0     | 0     | 0.007 | 0.000 | 0.000 |
| Pput_4298 | 148549504 | glycine cleavage T protein (aminomethyl transferase)                 | 1.05   | 0     | 0.62  | 0.008 | 0.000 | 0.010 |
| Pput_4299 | 148549505 | putative signal transduction protein                                 | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4300 | 148549506 | integral membrane sensor signal transduction histidine kinase        | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4301 | 148549507 | two component transcriptional regulator                              | 0      | 0     | 0.3   | 0.000 | 0.000 | 0.005 |
| Pput_4302 | 148549508 | outer membrane porin                                                 | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4303 | 148549509 | hypothetical protein Pput_4303                                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4304 | 148549510 | hypothetical protein Pput_4304                                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4305 | 148549511 | hypothetical protein Pput_4305                                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4306 | 148549512 | putative ammonia monooxygenase                                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4307 | 148549513 | 5'-nucleotidase domain-containing protein                            | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4308 | 148549514 | uracil-DNA glycosylase                                               | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4309 | 148549515 | enoyl-CoA hydratase/isomerase                                        | 0.9    | 0.3   | 2.33  | 0.007 | 0.013 | 0.037 |
| Pput_4310 | 148549516 | hypothetical protein Pput_4310                                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4311 | 148549517 | diguanylate cyclase                                                  | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4312 | 148549518 | hypothetical protein Pput_4312                                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4313 | 148549519 | pseudouridine synthase                                               | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4315 | 148549520 | alpha/beta hydrolase fold                                            | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4316 | 148549521 | sulfate transporter                                                  | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4317 | 148549522 | hypothetical protein Pput_4317                                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4318 | 148549523 | hypothetical protein Pput_4318                                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4319 | 148549524 | hypothetical protein Pput_4319                                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4320 | 148549525 | glycoside hydrolase family 3 protein                                 | 0      | 0     | 0.08  | 0.000 | 0.000 | 0.001 |

|           |           |                                                                                     |        |       |       |       |       |       |
|-----------|-----------|-------------------------------------------------------------------------------------|--------|-------|-------|-------|-------|-------|
| Pput_4321 | 148549526 | integral membrane sensor signal transduction histidine kinase                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4322 | 148549527 | two component, sigma54 specific, Fis family transcriptional regulator               | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4323 | 148549528 | major facilitator superfamily metabolite/H(+) symporter                             | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4324 | 148549529 | hypothetical protein Pput_4324                                                      | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4325 | 148549530 | hypothetical protein Pput_4325                                                      | 0.61   | 0     | 0     | 0.005 | 0.000 | 0.000 |
| Pput_4326 | 148549531 | hypothetical protein Pput_4326                                                      | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4327 | 148549532 | antibiotic biosynthesis monooxygenase                                               | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4328 | 148549533 | AraC-like transcriptional regulator                                                 | 0      | 0     | 0.79  | 0.000 | 0.000 | 0.013 |
| Pput_4329 | 148549534 | hypothetical protein Pput_4329                                                      | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4330 | 148549535 | hypothetical protein Pput_4330                                                      | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4331 | 148549536 | LysR family transcriptional regulator                                               | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4332 | 148549537 | NAD-dependent epimerase/dehydratase                                                 | 0.62   | 0.9   | 2.86  | 0.005 | 0.039 | 0.046 |
| Pput_4333 | 148549538 | LysR family transcriptional regulator                                               | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4334 | 148549539 | PEP phosphonmutase and related enzymes-like protein                                 | 0.57   | 0     | 0.73  | 0.004 | 0.000 | 0.012 |
| Pput_4335 | 148549540 | EmrB/QacA family drug resistance transporter                                        | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4336 | 148549541 | TetR family transcriptional regulator                                               | 0.72   | 0.56  | 0.56  | 0.005 | 0.025 | 0.009 |
| Pput_4337 | 148549542 | RND family efflux transporter MFP subunit                                           | 0.93   | 0     | 0.47  | 0.007 | 0.000 | 0.008 |
| Pput_4338 | 148549543 | hydrophobe/amphiphile efflux-1 (HAE1) family protein                                | 0.09   | 0.1   | 0.43  | 0.001 | 0.004 | 0.007 |
| Pput_4339 | 148549544 | RND efflux system outer membrane lipoprotein                                        | 4.02   | 0.85  | 1.28  | 0.030 | 0.037 | 0.020 |
| Pput_4340 | 148549545 | outer membrane porin                                                                | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4341 | 148549546 | hypothetical protein Pput_4341                                                      | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4342 | 148549547 | 4-carboxymuconolactone decarboxylase                                                | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4343 | 148549548 | 3-oxoadipate enol-lactonase                                                         | 1.1    | 0     | 1.7   | 0.008 | 0.000 | 0.027 |
| Pput_4344 | 148549549 | 3-carboxy-cis,cis-muconate cycloisomerase                                           | 0      | 0     | 0.16  | 0.000 | 0.000 | 0.003 |
| Pput_4345 | 148549550 | major facilitator superfamily metabolite/H(+) symporter                             | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4346 | 148549551 | beta-ketoadipyl CoA thiolase                                                        | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4347 | 148549552 | benzoate transport                                                                  | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4348 | 148549553 | beta-ketoadipate pathway transcription regulator                                    | 1.19   | 0     | 1.08  | 0.009 | 0.000 | 0.017 |
| Pput_4349 | 148549554 | hypothetical protein Pput_4349                                                      | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4350 | 148549555 | phosphate transporter                                                               | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4351 | 148549556 | protein of unknown function DUF853, NPT hydrolase putative                          | 0.45   | 0.32  | 0.85  | 0.003 | 0.014 | 0.014 |
| Pput_4352 | 148549557 | methyl-accepting chemotaxis sensory transducer                                      | 0.21   | 0.31  | 0.33  | 0.002 | 0.014 | 0.005 |
| Pput_4353 | 148549558 | glycosyl transferase, group 1                                                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4354 | 148549559 | hypothetical protein Pput_4354                                                      | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4355 | 148549560 | hypothetical protein Pput_4355                                                      | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4356 | 148549561 | formyltetrahydrofolate deformylase                                                  | 1.23   | 0.24  | 1.32  | 0.009 | 0.011 | 0.021 |
| Pput_4357 | 148549562 | hypothetical protein Pput_4357                                                      | 112.12 | 3.36  | 8.21  | 0.849 | 0.147 | 0.131 |
| Pput_4358 | 148549563 | hypothetical protein Pput_4358                                                      | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4359 | 148549564 | exonuclease I                                                                       | 0      | 0     | 0.14  | 0.000 | 0.000 | 0.002 |
| Pput_4360 | 148549565 | type IV pilus assembly PilZ                                                         | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4361 | 148549566 | hypothetical protein Pput_4361                                                      | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4362 | 148549567 | pyruvate kinase                                                                     | 6.47   | 0.41  | 1.84  | 0.049 | 0.018 | 0.029 |
| Pput_4363 | 148549568 | chaperonin GroEL                                                                    | 217.83 | 10.21 | 48.08 | 1.650 | 0.447 | 0.769 |
| Pput_4364 | 148549569 | co-chaperonin GroES                                                                 | 5.26   | 0.39  | 5.04  | 0.040 | 0.017 | 0.081 |
| Pput_4365 | 148549570 | FxaA                                                                                | 2.88   | 0.85  | 0     | 0.022 | 0.037 | 0.000 |
| Pput_4366 | 148549571 | pyridoxamine 5'-phosphate oxidase-related, FMN-binding                              | 1.18   | 0.68  | 0.48  | 0.009 | 0.030 | 0.008 |
| Pput_4367 | 148549572 | hypothetical protein Pput_4367                                                      | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4368 | 148549573 | methylated-DNA-(protein)-cysteine S-methyltransferase, DNA binding                  | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4369 | 148549574 | AmpG-related permease                                                               | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4370 | 148549575 | major facilitator transporter                                                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4371 | 148549576 | MscS mechanosensitive ion channel                                                   | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4372 | 148549577 | putative nucleotide-binding protein                                                 | 14.9   | 0.46  | 2.51  | 0.113 | 0.020 | 0.040 |
| Pput_4373 | 148549578 | 2-dehydropantoate 2-reductase                                                       | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4374 | 148549579 | multi-sensor signal transduction histidine kinase                                   | 0      | 0.1   | 0.16  | 0.000 | 0.004 | 0.003 |
| Pput_4375 | 148549580 | ATP--cobalamin adenosyltransferase                                                  | 1.05   | 0     | 0     | 0.008 | 0.000 | 0.000 |
| Pput_4376 | 148549581 | hypothetical protein Pput_4376                                                      | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4377 | 148549582 | glutathione S-transferase domain-containing protein                                 | 1.48   | 0.35  | 0.93  | 0.011 | 0.015 | 0.015 |
| Pput_4378 | 148549583 | bifunctional ornithine acetyltransferase/N-acetylglutamate synthase protein         | 1.76   | 0.29  | 1.01  | 0.013 | 0.013 | 0.016 |
| Pput_4379 | 148549584 | preprotein translocase subunit SecA                                                 | 2.1    | 0.31  | 1.57  | 0.016 | 0.014 | 0.025 |
| Pput_4380 | 148549585 | hypothetical protein Pput_4380                                                      | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4381 | 148549586 | UDP-3-O-[3-hydroxymyristoyl] N-acetylglucosamine deacetylase                        | 1.44   | 1.36  | 3.15  | 0.011 | 0.060 | 0.050 |
| Pput_4382 | 148549587 | cell division protein FtsZ                                                          | 1.74   | 0.98  | 0.86  | 0.013 | 0.043 | 0.014 |
| Pput_4383 | 148549588 | cell division protein FtsA                                                          | 1.72   | 1.05  | 2.43  | 0.013 | 0.046 | 0.039 |
| Pput_4384 | 148549589 | polypeptide-transport-associated domain-containing protein                          | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4385 | 148549590 | D-alanine--D-alanine ligase                                                         | 1.35   | 0.23  | 1.17  | 0.010 | 0.010 | 0.019 |
| Pput_4386 | 148549591 | UDP-N-acetylmuramate--L-alanine ligase                                              | 0.73   | 0.51  | 1.08  | 0.006 | 0.022 | 0.017 |
| Pput_4387 | 148549592 | undecaprenyldiphospho-muramoylpentapeptide beta-N- acetylglucosaminyltransferase    | 0.2    | 0.1   | 0     | 0.002 | 0.004 | 0.000 |
| Pput_4388 | 148549593 | cell division protein FtsW                                                          | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4389 | 148549594 | UDP-N-acetylmuramoyl-L-alanyl-D-glutamate synthetase                                | 0.64   | 0.81  | 0.25  | 0.005 | 0.035 | 0.004 |
| Pput_4390 | 148549595 | phospho-N-acetylmuramoyl-pentapeptide-transferase                                   | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4391 | 148549596 | UDP-N-acetylmuramoylalanyl-D-glutamyl-2,6-diaminopimelate--D-alanyl-D-alanyl ligase | 0.67   | 0.26  | 0.42  | 0.005 | 0.011 | 0.007 |
| Pput_4392 | 148549597 | UDP-N-acetylmuramoylalanyl-D-glutamate--2,6-diaminopimelate ligase                  | 1.87   | 0.49  | 0.8   | 0.014 | 0.021 | 0.013 |
| Pput_4393 | 148549598 | peptidoglycan glycosyltransferase                                                   | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4394 | 148549599 | cell division protein FtsL                                                          | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4395 | 148549600 | S-adenosyl-methyltransferase MraW                                                   | 1.83   | 0.52  | 1.39  | 0.014 | 0.023 | 0.022 |
| Pput_4396 | 148549601 | cell division protein MraZ                                                          | 0.46   | 0.5   | 0     | 0.003 | 0.022 | 0.000 |
| Pput_4398 | 148549602 | uroporphyrin-III C/tetrapyrrole methyltransferase                                   | 0.58   | 0     | 1.6   | 0.004 | 0.000 | 0.026 |
| Pput_4399 | 148549603 | LppC family lipoprotein                                                             | 1.01   | 0.32  | 1.58  | 0.008 | 0.014 | 0.025 |
| Pput_4400 | 148549604 | hypothetical protein Pput_4400                                                      | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4401 | 148549605 | phosphoheptose isomerase                                                            | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4402 | 148549606 | transport-associated                                                                | 18.98  | 4.45  | 5.97  | 0.144 | 0.195 | 0.095 |
| Pput_4403 | 148549607 | ClpXP protease specificity-enhancing factor                                         | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4404 | 148549608 | glutathione S-transferase domain-containing protein                                 | 0      | 0.35  | 0     | 0.000 | 0.015 | 0.000 |
| Pput_4405 | 148549609 | ubiquinol--cytochrome c reductase, cytochrome c1                                    | 1.97   | 1.68  | 2.96  | 0.015 | 0.074 | 0.047 |
| Pput_4406 | 148549610 | cytochrome b/b6 domain-containing protein                                           | 0      | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4407 | 148549611 | ubiquinol-cytochrome c reductase, iron-sulfur subunit                               | 10.77  | 2.22  | 7.8   | 0.082 | 0.097 | 0.125 |
| Pput_4408 | 148549612 | 30S ribosomal protein S9                                                            | 59.03  | 9.83  | 51.44 | 0.447 | 0.430 | 0.822 |
| Pput_4409 | 148549613 | 50S ribosomal protein L13                                                           | 637.73 | 7.96  | 16.55 | 4.831 | 0.349 | 0.265 |
| Pput_4410 | 148549614 | aldo/keto reductase                                                                 | 1.22   | 0.32  | 1.49  | 0.009 | 0.014 | 0.024 |

|           |           |                                                                                     |       |      |       |       |       |       |
|-----------|-----------|-------------------------------------------------------------------------------------|-------|------|-------|-------|-------|-------|
| Pput_4411 | 148549615 | helix-turn-helix domain-containing protein                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4412 | 148549616 | AFG1 family ATPase                                                                  | 0.4   | 0    | 0.4   | 0.003 | 0.000 | 0.006 |
| Pput_4413 | 148549617 | tryptophanyl-tRNA synthetase                                                        | 1.47  | 0.66 | 1.45  | 0.011 | 0.029 | 0.023 |
| Pput_4414 | 148549618 | alpha/beta fold family hydrolase-like protein                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4415 | 148549619 | hypothetical protein Pput_4415                                                      | 5     | 2.31 | 3.7   | 0.038 | 0.101 | 0.059 |
| Pput_4416 | 148549620 | methionine gamma-lyase                                                              | 0     | 0.18 | 0     | 0.000 | 0.008 | 0.000 |
| Pput_4417 | 148549621 | AsnC family transcriptional regulator                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4420 | 148549622 | colicin immunity protein/pyocin immunity protein                                    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4421 | 148549623 | bifunctional sulfate adenyllyltransferase subunit 1/adenyllylsulfate kinase protein | 4.04  | 0.6  | 1     | 0.031 | 0.026 | 0.016 |
| Pput_4422 | 148549624 | sulfate adenyllyltransferase subunit 2                                              | 7.17  | 0.22 | 0.44  | 0.054 | 0.010 | 0.007 |
| Pput_4423 | 148549625 | hypothetical protein Pput_4423                                                      | 0.43  | 0    | 0     | 0.003 | 0.000 | 0.000 |
| Pput_4424 | 148549626 | 2-alkenal reductase                                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4425 | 148549627 | ABC transporter related                                                             | 1.48  | 1.08 | 3.41  | 0.011 | 0.047 | 0.055 |
| Pput_4426 | 148549628 | polar amino acid ABC transporter, inner membrane subunit                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4427 | 148549629 | polar amino acid ABC transporter, inner membrane subunit                            | 0     | 0.18 | 1.12  | 0.000 | 0.008 | 0.018 |
| Pput_4428 | 148549630 | extracellular solute-binding protein                                                | 36.31 | 0.48 | 60.84 | 0.275 | 0.021 | 0.972 |
| Pput_4429 | 148549631 | carboxylesterase                                                                    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4430 | 148549632 | ATP-dependent RNA helicase RhlB                                                     | 0.68  | 0    | 0.21  | 0.005 | 0.000 | 0.003 |
| Pput_4431 | 148549633 | molybdopterin biosynthesis MoaE protein                                             | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4432 | 148549634 | molybdopterin converting factor, subunit 1                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4433 | 148549635 | molybdenum cofactor biosynthesis protein C                                          | 1.89  | 0    | 0.54  | 0.014 | 0.000 | 0.009 |
| Pput_4434 | 148549636 | PhoH family protein                                                                 | 1.39  | 0.51 | 0.47  | 0.011 | 0.022 | 0.008 |
| Pput_4435 | 148549637 | polysaccharide deacetylase                                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4436 | 148549638 | hypothetical protein Pput_4436                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4437 | 148549639 | GDP-mannose 6-dehydrogenase                                                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4438 | 148549640 | hypothetical protein Pput_4438                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4439 | 148549641 | type IV pilus assembly PilZ                                                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4440 | 148549642 | Sel1 domain-containing protein                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4441 | 148549643 | outer membrane protein AlgE                                                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4442 | 148549644 | carbohydrate-binding and sugar hydrolysis                                           | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4443 | 148549645 | alginate biosynthesis protein AlgX                                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4444 | 148549646 | poly(beta-D-mannuronate) lyase                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4445 | 148549647 | membrane bound O-acyl transferase, MBOAT family protein                             | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4446 | 148549648 | hypothetical protein Pput_4446                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4447 | 148549649 | hypothetical protein Pput_4447                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4448 | 148549650 | mannose-1-phosphate guanylyltransferase/mannose-6-phosphate isomerase               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4449 | 148549651 | hypothetical protein Pput_4449                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4450 | 148549652 | hypothetical protein Pput_4450                                                      | 0.83  | 0    | 1.96  | 0.006 | 0.000 | 0.031 |
| Pput_4451 | 148549653 | short chain dehydrogenase                                                           | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4452 | 148549654 | RND efflux system outer membrane lipoprotein                                        | 0.38  | 0    | 0     | 0.003 | 0.000 | 0.000 |
| Pput_4453 | 148549655 | secretion protein HlyD family protein                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4454 | 148549656 | major facilitator transporter                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4455 | 148549657 | LysR family transcriptional regulator                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4456 | 148549658 | UspA domain-containing protein                                                      | 0.62  | 0    | 0     | 0.005 | 0.000 | 0.000 |
| Pput_4457 | 148549659 | secretion protein HlyD family protein                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4458 | 148549660 | hypothetical protein Pput_4458                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4459 | 148549661 | fusaric acid resistance protein region                                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4460 | 148549662 | RND efflux system outer membrane lipoprotein                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4461 | 148549663 | LysR family transcriptional regulator                                               | 1.08  | 0    | 0.56  | 0.008 | 0.000 | 0.009 |
| Pput_4462 | 148549664 | D-isomer specific 2-hydroxyacid dehydrogenase, NAD-binding                          | 1.18  | 0.67 | 2.08  | 0.009 | 0.029 | 0.033 |
| Pput_4463 | 148549665 | hypothetical protein Pput_4463                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4464 | 148549666 | helix-turn-helix domain-containing protein                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4465 | 148549667 | TonB-dependent siderophore receptor                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4466 | 148549668 | anti-FecI sigma factor, FecR                                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4467 | 148549669 | ECF subfamily RNA polymerase sigma-24 factor                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4468 | 148549670 | hypothetical protein Pput_4468                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4469 | 148549671 | PepSY-associated TM helix domain-containing protein                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4470 | 148549672 | hypothetical protein Pput_4470                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4471 | 148549673 | hypothetical protein Pput_4471                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4472 | 148549674 | hypothetical protein Pput_4472                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4473 | 148549675 | phosphate-starvation-inducible E                                                    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4474 | 148549676 | hypothetical protein Pput_4474                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4475 | 148549677 | hypothetical protein Pput_4475                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4476 | 148549678 | YebG family protein                                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4477 | 148549679 | Glu/Leu/Phe/Val dehydrogenase, dimerisation region                                  | 0     | 0.1  | 0.86  | 0.000 | 0.004 | 0.014 |
| Pput_4478 | 148549680 | hypothetical protein Pput_4478                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4479 | 148549681 | maleylacetoacetate isomerase                                                        | 0.36  | 0.59 | 1.44  | 0.003 | 0.026 | 0.023 |
| Pput_4480 | 148549682 | fumarylacetoacetase                                                                 | 0     | 0.26 | 0.63  | 0.000 | 0.011 | 0.010 |
| Pput_4481 | 148549683 | homogentisate 1,2-dioxygenase                                                       | 0     | 0.16 | 0.24  | 0.000 | 0.007 | 0.004 |
| Pput_4482 | 148549684 | IclR family transcriptional regulator                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4483 | 148549685 | hypothetical protein Pput_4483                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4484 | 148549686 | alpha/beta hydrolase fold                                                           | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4485 | 148549687 | LrgB family protein                                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4486 | 148549688 | LrgA family protein                                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4487 | 148549689 | LysR family transcriptional regulator                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4488 | 148549690 | flavodoxin                                                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4489 | 148549691 | putative PAS/PAC sensor protein                                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4490 | 148549692 | hypothetical protein Pput_4490                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4491 | 148549693 | MerR family transcriptional regulator                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4492 | 148549694 | hypothetical protein Pput_4492                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4493 | 148549695 | short chain dehydrogenase                                                           | 0.63  | 0    | 0     | 0.005 | 0.000 | 0.000 |
| Pput_4494 | 148549696 | hypothetical protein Pput_4494                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4495 | 148549697 | HopI type III effector protein                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4496 | 148549698 | alpha/beta hydrolase-like protein                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4497 | 148549699 | trans-2-enoyl-CoA reductase                                                         | 7.32  | 1.24 | 4.16  | 0.055 | 0.054 | 0.066 |
| Pput_4498 | 148549700 | acetyl-CoA acetyltransferase                                                        | 0.18  | 0.42 | 0.42  | 0.001 | 0.018 | 0.007 |
| Pput_4499 | 148549701 | 5-methyltetrahydropteroyltryglutamate--homocysteine S-methyltransferase             | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4500 | 148549702 | methylene-tetrahydrofolate reductase                                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4501 | 148549703 | cobalamin synthesis protein, P47K                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |

|           |           |                                                                       |       |      |      |       |       |       |
|-----------|-----------|-----------------------------------------------------------------------|-------|------|------|-------|-------|-------|
| Pput_4502 | 148549704 | hypothetical protein Pput_4502                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4503 | 148549705 | carbon starvation protein CstA                                        | 0.6   | 0.1  | 2.16 | 0.005 | 0.004 | 0.035 |
| Pput_4504 | 148549706 | type IV pilus assembly PilZ                                           | 1.63  | 0    | 0    | 0.012 | 0.000 | 0.000 |
| Pput_4505 | 148549707 | uracil-xanthine permease                                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4506 | 148549708 | DNA repair protein RadA                                               | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4507 | 148549709 | large-conductance mechanosensitive channel                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4508 | 148549710 | oxidoreductase FAD/NAD(P)-binding subunit                             | 0.25  | 0.25 | 0.82 | 0.002 | 0.011 | 0.013 |
| Pput_4509 | 148549711 | autoinducer-binding domain-containing protein                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4510 | 148549712 | rRNA (guanine-N(2)-)-methyltransferase                                | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4511 | 148549713 | hypothetical protein Pput_4511                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4512 | 148549714 | cytochrome d ubiquinol oxidase, subunit II                            | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4513 | 148549715 | cytochrome bd ubiquinol oxidase, subunit I                            | 0     | 0.07 | 0    | 0.000 | 0.003 | 0.000 |
| Pput_4514 | 148549716 | major facilitator transporter                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4515 | 148549717 | xanthine/uracil/vitamin C permease                                    | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4516 | 148549718 | tRNA (uracil-5-)-methyltransferase                                    | 0.27  | 0    | 0.38 | 0.002 | 0.000 | 0.006 |
| Pput_4517 | 148549719 | protocatechuate 3,4-dioxygenase, alpha subunit                        | 0.54  | 0    | 0    | 0.004 | 0.000 | 0.000 |
| Pput_4518 | 148549720 | protocatechuate 3,4-dioxygenase, beta subunit                         | 0.3   | 0.48 | 0.44 | 0.002 | 0.021 | 0.007 |
| Pput_4519 | 148549721 | protein of unknown function, zinc metallopeptidase putative           | 0.56  | 0.25 | 3.47 | 0.004 | 0.011 | 0.055 |
| Pput_4520 | 148549722 | methyl-accepting chemotaxis sensory transducer                        | 0     | 0.11 | 0    | 0.000 | 0.005 | 0.000 |
| Pput_4521 | 148549723 | gamma-glutamyltransferase                                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4522 | 148549724 | LysR family transcriptional regulator                                 | 0     | 0    | 0.22 | 0.000 | 0.000 | 0.004 |
| Pput_4523 | 148549725 | NAD(P)H dehydrogenase (quinone)                                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4524 | 148549726 | antibiotic biosynthesis monooxygenase                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4525 | 148549727 | hypothetical protein Pput_4525                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4526 | 148549728 | LysR family transcriptional regulator                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4527 | 148549729 | hypothetical protein Pput_4527                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4528 | 148549730 | cation diffusion facilitator family transporter                       | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4529 | 148549731 | protein of unknown function DUF861, cupin_3                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4530 | 148549732 | 3-hydroxyisobutyrate dehydrogenase                                    | 5.38  | 0    | 3.04 | 0.041 | 0.000 | 0.049 |
| Pput_4531 | 148549733 | methylmalonate-semialdehyde dehydrogenase                             | 8.34  | 0.59 | 1.77 | 0.063 | 0.026 | 0.028 |
| Pput_4532 | 148549734 | LysR family transcriptional regulator                                 | 0.35  | 0    | 0.33 | 0.003 | 0.000 | 0.005 |
| Pput_4533 | 148549735 | OmpA/MotB domain-containing protein                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4534 | 148549736 | diguanylate cyclase                                                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4535 | 148549737 | hypothetical protein Pput_4535                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4536 | 148549738 | exodeoxyribonuclease V, alpha subunit                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4537 | 148549739 | exodeoxyribonuclease V, beta subunit                                  | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4538 | 148549740 | exodeoxyribonuclease V, gamma subunit                                 | 0     | 0    | 0.06 | 0.000 | 0.000 | 0.001 |
| Pput_4539 | 148549741 | putative sulfite oxidase subunit YedZ                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4540 | 148549742 | putative sulfite oxidase subunit YedY                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4541 | 148549743 | CDP-diacylglycerol--serine O-phosphatidyltransferase                  | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4542 | 148549744 | ketol-acid reductoisomerase                                           | 36.92 | 6.06 | 9.09 | 0.280 | 0.265 | 0.145 |
| Pput_4543 | 148549745 | acetolactate synthase 3 regulatory subunit                            | 4.39  | 0.48 | 3.18 | 0.033 | 0.021 | 0.051 |
| Pput_4544 | 148549746 | acetolactate synthase 3 catalytic subunit                             | 2.39  | 0.41 | 1.48 | 0.018 | 0.018 | 0.024 |
| Pput_4545 | 148549747 | hypothetical protein Pput_4545                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4546 | 148549748 | hypothetical protein Pput_4546                                        | 1.18  | 1.36 | 1.48 | 0.009 | 0.060 | 0.024 |
| Pput_4547 | 148549749 | penicillin-binding protein 1B                                         | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4548 | 148549750 | hypothetical protein Pput_4548                                        | 0.79  | 0.27 | 1.36 | 0.006 | 0.012 | 0.022 |
| Pput_4549 | 148549751 | TfoX domain-containing protein                                        | 1.17  | 0    | 0    | 0.009 | 0.000 | 0.000 |
| Pput_4550 | 148549752 | hypothetical protein Pput_4550                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4551 | 148549753 | hemin importer ATP-binding subunit                                    | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4552 | 148549754 | transport system permease protein                                     | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4553 | 148549755 | periplasmic binding protein                                           | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4554 | 148549756 | Rieske (2Fe-2S) domain-containing protein                             | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4555 | 148549757 | sugar fermentation stimulation protein A                              | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4556 | 148549758 | hypothetical protein Pput_4556                                        | 0     | 0.29 | 0.27 | 0.000 | 0.013 | 0.004 |
| Pput_4557 | 148549759 | TraR/DksA family transcriptional regulator                            | 1.38  | 0    | 0    | 0.010 | 0.000 | 0.000 |
| Pput_4558 | 148549760 | glutamyl-Q tRNA(Asp) synthetase                                       | 0     | 0    | 0.23 | 0.000 | 0.000 | 0.004 |
| Pput_4559 | 148549761 | hypothetical protein Pput_4559                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4560 | 148549762 | multi-sensor signal transduction histidine kinase                     | 0.09  | 0.03 | 0    | 0.001 | 0.001 | 0.000 |
| Pput_4561 | 148549763 | two component, sigma54 specific, Fis family transcriptional regulator | 1.02  | 0.51 | 0.72 | 0.008 | 0.022 | 0.012 |
| Pput_4562 | 148549764 | poly(A) polymerase                                                    | 0.31  | 0.41 | 1.83 | 0.002 | 0.018 | 0.029 |
| Pput_4563 | 148549765 | 2-amino-4-hydroxy-6-hydroxymethylidihydropteridine pyrophosphokinase  | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4564 | 148549766 | 3-methyl-2-oxobutanoate hydroxymethyltransferase                      | 0.47  | 0    | 0    | 0.004 | 0.000 | 0.000 |
| Pput_4565 | 148549767 | pantoate--beta-alanine ligase                                         | 0.84  | 0.12 | 0.96 | 0.006 | 0.005 | 0.015 |
| Pput_4566 | 148549768 | glucose-6-phosphate isomerase                                         | 1.43  | 0.6  | 1.23 | 0.011 | 0.026 | 0.020 |
| Pput_4567 | 148549769 | acetyl-CoA synthetase                                                 | 1.43  | 0.22 | 1.18 | 0.011 | 0.010 | 0.019 |
| Pput_4568 | 148549770 | hypothetical protein Pput_4568                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4569 | 148549771 | hypothetical protein Pput_4569                                        | 0     | 0    | 0.07 | 0.000 | 0.000 | 0.001 |
| Pput_4570 | 148549772 | glyoxalase/bleomycin resistance protein/dioxygenase                   | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4571 | 148549773 | antibiotic biosynthesis monooxygenase                                 | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4572 | 148549774 | transport-associated                                                  | 13.08 | 0    | 1.69 | 0.099 | 0.000 | 0.027 |
| Pput_4573 | 148549775 | polynucleotide phosphorylase/polyadenylase                            | 7.06  | 0.96 | 3.19 | 0.053 | 0.042 | 0.051 |
| Pput_4574 | 148549776 | 30S ribosomal protein S15                                             | 2.56  | 0    | 0    | 0.019 | 0.000 | 0.000 |
| Pput_4575 | 148549777 | tRNA pseudouridine synthase B                                         | 0     | 0    | 0.24 | 0.000 | 0.000 | 0.004 |
| Pput_4576 | 148549778 | ribosome-binding factor A                                             | 2.13  | 0    | 0.85 | 0.016 | 0.000 | 0.014 |
| Pput_4577 | 148549779 | translation initiation factor IF-2                                    | 2.9   | 0.32 | 1.81 | 0.022 | 0.014 | 0.029 |
| Pput_4578 | 148549780 | transcription elongation factor NusA                                  | 3.92  | 1.69 | 2.99 | 0.030 | 0.074 | 0.048 |
| Pput_4579 | 148549781 | hypothetical protein Pput_4579                                        | 0     | 0.45 | 0    | 0.000 | 0.020 | 0.000 |
| Pput_4580 | 148549782 | preprotein translocase subunit SecG                                   | 2.7   | 0    | 0    | 0.020 | 0.000 | 0.000 |
| Pput_4581 | 148549783 | triosephosphate isomerase                                             | 0.81  | 0.31 | 0.8  | 0.006 | 0.014 | 0.013 |
| Pput_4582 | 148549784 | phosphoglucosamine mutase                                             | 0.8   | 0.57 | 0.94 | 0.006 | 0.025 | 0.015 |
| Pput_4583 | 148549785 | dihydropteroate synthase                                              | 0.26  | 0    | 0.26 | 0.002 | 0.000 | 0.004 |
| Pput_4584 | 148549786 | ATP-dependent metalloprotease FtsH                                    | 0.94  | 0.37 | 1.16 | 0.007 | 0.016 | 0.019 |
| Pput_4585 | 148549787 | ribosomal RNA methyltransferase RrmJ/FtsJ                             | 0.36  | 0    | 0.74 | 0.003 | 0.000 | 0.012 |
| Pput_4586 | 148549788 | hypothetical protein Pput_4586                                        | 3.16  | 0    | 0    | 0.024 | 0.000 | 0.000 |
| Pput_4587 | 148549789 | hypothetical protein Pput_4587                                        | 0     | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4588 | 148549790 | transcription elongation factor GreA                                  | 1.93  | 0    | 0    | 0.015 | 0.000 | 0.000 |
| Pput_4589 | 148549791 | carbamoyl phosphate synthase large subunit                            | 1.3   | 0.45 | 2    | 0.010 | 0.020 | 0.032 |
| Pput_4590 | 148549792 | carbamoyl phosphate synthase small subunit                            | 0.18  | 0.41 | 0.47 | 0.001 | 0.018 | 0.008 |

|           |           |                                                                  |       |       |      |       |       |       |
|-----------|-----------|------------------------------------------------------------------|-------|-------|------|-------|-------|-------|
| Pput_4591 | 148549793 | dihydrodipicolinate reductase                                    | 1.52  | 1.12  | 2.65 | 0.012 | 0.049 | 0.042 |
| Pput_4592 | 148549794 | chaperone protein DnaJ                                           | 0.98  | 0.86  | 0.9  | 0.007 | 0.038 | 0.014 |
| Pput_4593 | 148549795 | molecular chaperone DnaK                                         | 41.28 | 2.96  | 8.34 | 0.313 | 0.130 | 0.133 |
| Pput_4594 | 148549796 | GrpE protein                                                     | 10.79 | 0.98  | 0.82 | 0.082 | 0.043 | 0.013 |
| Pput_4595 | 148549797 | DNA repair protein RecN                                          | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4596 | 148549798 | ferric uptake regulator family protein                           | 8.68  | 2.94  | 5.41 | 0.066 | 0.129 | 0.086 |
| Pput_4597 | 148549799 | SmpA/OmlA domain-containing protein                              | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4598 | 148549800 | cyclase/dehydrase                                                | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4599 | 148549801 | SsrA-binding protein                                             | 2.03  | 0     | 0    | 0.015 | 0.000 | 0.000 |
| Pput_4600 | 148549802 | GntR domain-containing protein                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4601 | 148549803 | L-lactate transport                                              | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4602 | 148549804 | L-lactate dehydrogenase                                          | 0     | 1.18  | 0.3  | 0.000 | 0.052 | 0.005 |
| Pput_4603 | 148549805 | D-lactate dehydrogenase (cytochrome)                             | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4604 | 148549806 | hypothetical protein Pput_4604                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4605 | 148549807 | phage integrase family protein                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4606 | 148549808 | hypothetical protein Pput_4606                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4607 | 148549809 | hypothetical protein Pput_4607                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4608 | 148549810 | phage integrase family protein                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4609 | 148549811 | hypothetical protein Pput_4609                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4610 | 148549812 | hypothetical protein Pput_4610                                   | 0     | 0     | 0.1  | 0.000 | 0.000 | 0.002 |
| Pput_4611 | 148549813 | restriction modification system DNA specificity subunit          | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4612 | 148549814 | N-6 DNA methylase                                                | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4613 | 148549815 | hypothetical protein Pput_4613                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4614 | 148549816 | EcoEI R domain-containing protein                                | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4615 | 148549817 | non-specific serine/threonine protein kinase                     | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4616 | 148549818 | hypothetical protein Pput_4616                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4617 | 148549819 | hypothetical protein Pput_4617                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4618 | 148549820 | hypothetical protein Pput_4618                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4619 | 148549821 | McrBC 5-methylcytosine restriction system component-like protein | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4620 | 148549822 | ATPase                                                           | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4621 | 148549823 | hypothetical protein Pput_4621                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4622 | 148549824 | hypothetical protein Pput_4622                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4623 | 148549825 | transcriptional regulator-like protein                           | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4624 | 148549826 | TonB-dependent siderophore receptor                              | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4625 | 148549827 | hypothetical protein Pput_4625                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4626 | 148549828 | hypothetical protein Pput_4626                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4627 | 148549829 | amino acid permease-associated region                            | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4628 | 148549830 | d-galactonate transporter                                        | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4629 | 148549831 | D-isomer specific 2-hydroxyacid dehydrogenase, NAD-binding       | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4630 | 148549832 | LysR family transcriptional regulator                            | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4631 | 148549833 | glucarate dehydratase                                            | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4632 | 148549834 | major facilitator transporter                                    | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4633 | 148549835 | GntR domain-containing protein                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4634 | 148549836 | alcohol dehydrogenase                                            | 1.72  | 0.22  | 2.42 | 0.013 | 0.010 | 0.039 |
| Pput_4635 | 148549837 | HAD family hydrolase                                             | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4636 | 148549838 | acyl-CoA thioesterase II                                         | 0.93  | 0     | 1.3  | 0.007 | 0.000 | 0.021 |
| Pput_4637 | 148549839 | GCN5-related N-acetyltransferase                                 | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4638 | 148549840 | putative phosphohistidine phosphatase, SixA                      | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4639 | 148549841 | histone deacetylase superfamily protein                          | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4640 | 148549842 | hypothetical protein Pput_4640                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4641 | 148549843 | DEAD/DEAH box helicase domain-containing protein                 | 0     | 0.16  | 0.96 | 0.000 | 0.007 | 0.015 |
| Pput_4642 | 148549844 | hypothetical protein Pput_4642                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4643 | 148549845 | DNA polymerase III, epsilon subunit                              | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4644 | 148549846 | hypothetical protein Pput_4644                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4645 | 148549847 | putative periplasmic ligand-binding sensor protein               | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4646 | 148549848 | hypothetical protein Pput_4646                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4647 | 148549849 | hypothetical protein Pput_4647                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4648 | 148549850 | ATP-dependent helicase HrpB                                      | 0     | 0     | 0.12 | 0.000 | 0.000 | 0.002 |
| Pput_4649 | 148549851 | hypothetical protein Pput_4649                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4650 | 148549852 | cation diffusion facilitator family transporter                  | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4651 | 148549853 | hypothetical protein Pput_4651                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4652 | 148549854 | AsnC family transcriptional regulator                            | 2.39  | 0.48  | 1.87 | 0.018 | 0.021 | 0.030 |
| Pput_4653 | 148549855 | hypothetical protein Pput_4653                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4654 | 148549856 | pseudouridine synthase                                           | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4655 | 148549857 | AMP nucleosidase                                                 | 1     | 0.28  | 0.66 | 0.008 | 0.012 | 0.011 |
| Pput_4656 | 148549858 | acyl-CoA dehydrogenase domain-containing protein                 | 0.82  | 0.82  | 1.82 | 0.006 | 0.036 | 0.029 |
| Pput_4657 | 148549859 | integral membrane sensor signal transduction histidine kinase    | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4658 | 148549860 | phosphomethylpyrimidine kinase                                   | 0.45  | 0.64  | 1.31 | 0.003 | 0.028 | 0.021 |
| Pput_4659 | 148549861 | thiamine-phosphate pyrophosphorylase                             | 0.56  | 0.62  | 0.56 | 0.004 | 0.027 | 0.009 |
| Pput_4660 | 148549862 | glutamate-1-semialdehyde aminotransferase                        | 0.85  | 0.17  | 2.85 | 0.006 | 0.007 | 0.046 |
| Pput_4661 | 148549863 | Sel1 domain-containing protein                                   | 0.38  | 0     | 0.38 | 0.003 | 0.000 | 0.006 |
| Pput_4662 | 148549864 | hypothetical protein Pput_4662                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4663 | 148549865 | PhoH family protein                                              | 0.21  | 0.33  | 0    | 0.002 | 0.014 | 0.000 |
| Pput_4664 | 148549866 | putative metalloprotease                                         | 2.94  | 0.8   | 0.44 | 0.022 | 0.035 | 0.007 |
| Pput_4665 | 148549867 | CBS domain-containing protein                                    | 0.66  | 0.25  | 0.25 | 0.005 | 0.011 | 0.004 |
| Pput_4666 | 148549868 | apolipoprotein N-acyltransferase                                 | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4667 | 148549869 | hypothetical protein Pput_4667                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4668 | 148549870 | hypothetical protein Pput_4668                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4669 | 148549871 | leucyl-tRNA synthetase                                           | 0.48  | 0.11  | 0.55 | 0.004 | 0.005 | 0.009 |
| Pput_4670 | 148549872 | rare lipoprotein B                                               | 76.48 | 25.87 | 35.7 | 0.579 | 1.133 | 0.571 |
| Pput_4671 | 148549873 | DNA polymerase III subunit delta                                 | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4672 | 148549874 | hypothetical protein Pput_4672                                   | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4673 | 148549875 | lytic murein transglycosylase                                    | 0.24  | 0     | 0.78 | 0.002 | 0.000 | 0.012 |
| Pput_4674 | 148549876 | peptidase U61, LD-carboxypeptidase A                             | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4675 | 148549877 | lipoyl synthase                                                  | 0     | 0     | 0.21 | 0.000 | 0.000 | 0.003 |
| Pput_4676 | 148549878 | lipoyltransferase                                                | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4677 | 148549879 | hypothetical protein Pput_4677                                   | 1.33  | 0     | 0    | 0.010 | 0.000 | 0.000 |
| Pput_4678 | 148549880 | Serine-type D-Ala-D-Ala carboxypeptidase                         | 1.64  | 0.38  | 0.83 | 0.012 | 0.017 | 0.013 |
| Pput_4679 | 148549881 | rare lipoprotein A                                               | 0     | 0     | 0    | 0.000 | 0.000 | 0.000 |

|           |           |                                                                                           |       |      |       |       |       |       |
|-----------|-----------|-------------------------------------------------------------------------------------------|-------|------|-------|-------|-------|-------|
| Pput_4680 | 148549882 | lytic murein transglycosylase B                                                           | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4681 | 148549883 | rod shape-determining protein RodA                                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4682 | 148549884 | peptidoglycan glycosyltransferase                                                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4683 | 148549885 | rRNA large subunit methyltransferase                                                      | 0.48  | 0    | 0     | 0.004 | 0.000 | 0.000 |
| Pput_4684 | 148549886 | iojap-like protein                                                                        | 3.88  | 0.44 | 0.49  | 0.029 | 0.019 | 0.008 |
| Pput_4685 | 148549887 | nicotinic acid mononucleotide adenyltransferase                                           | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4686 | 148549888 | gamma-glutamyl phosphate reductase                                                        | 0     | 0.27 | 0.34  | 0.000 | 0.012 | 0.005 |
| Pput_4687 | 148549889 | 3-methyladenine DNA glycosylase                                                           | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4688 | 148549890 | phosphoesterase, PA-phosphatase related                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4689 | 148549891 | peptidase S16, lon domain-containing protein                                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4690 | 148549892 | LrgB family protein                                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4691 | 148549893 | LrgA family protein                                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4692 | 148549894 | dehydratase                                                                               | 2.67  | 0    | 0     | 0.020 | 0.000 | 0.000 |
| Pput_4693 | 148549895 | ribosomal protein L11 methyltransferase                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4694 | 148549896 | Zinc finger-domain-containing protein                                                     | 0.15  | 0    | 0.37  | 0.001 | 0.000 | 0.006 |
| Pput_4695 | 148549897 | nifR3 family TIM-barrel protein                                                           | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4696 | 148549898 | DNA-binding protein Fis                                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4697 | 148549899 | bifunctional phosphoribosylaminoimidazolecarboxamide formyltransferase/IMP cyclohydrolase | 4.84  | 0.37 | 0.96  | 0.037 | 0.016 | 0.015 |
| Pput_4698 | 148549900 | phosphoribosylamine-glycine ligase                                                        | 1.02  | 0    | 0.34  | 0.008 | 0.000 | 0.005 |
| Pput_4699 | 148549901 | integral membrane sensor hybrid histidine kinase                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4700 | 148549902 | multiple antibiotic resistance (MarC)-related protein                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4701 | 148549903 | hypothetical protein Pput_4701                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4702 | 148549904 | hypothetical protein Pput_4702                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4703 | 148549905 | hypothetical protein Pput_4703                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4704 | 148549906 | precorrin-3B C17-methyltransferase                                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4705 | 148549907 | precorrin-2 C(20)-methyltransferase                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4706 | 148549908 | precorrin-8X methylmutase                                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4707 | 148549909 | precorrin-3B synthase                                                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4708 | 148549910 | precorrin-6y C5,15-methyltransferase (decarboxylating), CbiE subunit                      | 0     | 0.09 | 0     | 0.000 | 0.004 | 0.000 |
| Pput_4709 | 148549911 | cobalt-precorrin-6A synthase                                                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4710 | 148549912 | cobalt-precorrin-6x reductase                                                             | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4711 | 148549913 | hypothetical protein Pput_4711                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4712 | 148549914 | band 7 protein                                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4713 | 148549915 | hypothetical protein Pput_4713                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4714 | 148549916 | hypothetical protein Pput_4714                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4715 | 148549917 | hypothetical protein Pput_4715                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4716 | 148549918 | TonB-dependent copper receptor                                                            | 0.4   | 0    | 0     | 0.003 | 0.000 | 0.000 |
| Pput_4717 | 148549919 | peptidase                                                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4718 | 148549920 | D-alanine/D-serine/glycine permease                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4719 | 148549921 | ABC-type branched-chain amino acid transport systems periplasmic component-like protein   | 0     | 0    | 1.18  | 0.000 | 0.000 | 0.019 |
| Pput_4720 | 148549922 | inner-membrane translocator                                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4721 | 148549923 | inner-membrane translocator                                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4722 | 148549924 | ABC transporter related                                                                   | 0     | 0    | 0.76  | 0.000 | 0.000 | 0.012 |
| Pput_4723 | 148549925 | ABC transporter related                                                                   | 0     | 0    | 1.14  | 0.000 | 0.000 | 0.018 |
| Pput_4724 | 148549926 | GCN5-related N-acetyltransferase                                                          | 0     | 0    | 1.55  | 0.000 | 0.000 | 0.025 |
| Pput_4725 | 148549927 | hypothetical protein Pput_4725                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4726 | 148549928 | chaperone DnaJ domain-containing protein                                                  | 4.96  | 1.8  | 4.99  | 0.038 | 0.079 | 0.080 |
| Pput_4727 | 148549929 | molecular chaperone-like protein                                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4728 | 148549930 | hypothetical protein Pput_4728                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4729 | 148549931 | PsiF repeat-containing protein                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4730 | 148549932 | AraC family transcriptional regulator                                                     | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4731 | 148549933 | hypothetical protein Pput_4731                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4732 | 148549934 | alpha/beta hydrolase fold                                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4733 | 148549935 | DNA-binding transcriptional activator OsmE                                                | 3.27  | 0    | 0     | 0.025 | 0.000 | 0.000 |
| Pput_4734 | 148549936 | Ferritin, Dps family protein                                                              | 8.14  | 0.19 | 0     | 0.062 | 0.008 | 0.000 |
| Pput_4735 | 148549937 | AsmA family protein                                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4736 | 148549938 | hypothetical protein Pput_4736                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4737 | 148549939 | TetR family transcriptional regulator                                                     | 0     | 0    | 0.48  | 0.000 | 0.000 | 0.008 |
| Pput_4738 | 148549940 | N-acetylglucosamine 2-epimerase                                                           | 0.19  | 0.09 | 0.38  | 0.001 | 0.004 | 0.006 |
| Pput_4739 | 148549941 | hypothetical protein Pput_4739                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4740 | 148549942 | short-chain dehydrogenase/reductase SDR                                                   | 1.6   | 0.67 | 1.89  | 0.012 | 0.029 | 0.030 |
| Pput_4741 | 148549943 | ABC transporter related                                                                   | 1.1   | 1.25 | 7.04  | 0.008 | 0.055 | 0.113 |
| Pput_4742 | 148549944 | ABC transporter related                                                                   | 0.55  | 0.55 | 3.66  | 0.004 | 0.024 | 0.059 |
| Pput_4743 | 148549945 | inner-membrane translocator                                                               | 0     | 0    | 1.09  | 0.000 | 0.000 | 0.017 |
| Pput_4744 | 148549946 | inner-membrane translocator                                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4745 | 148549947 | extracellular ligand-binding receptor                                                     | 10.26 | 0.31 | 11.34 | 0.078 | 0.014 | 0.181 |
| Pput_4746 | 148549948 | nicotinate phosphoribosyltransferase                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4747 | 148549949 | NAD synthetase                                                                            | 4.37  | 0.71 | 4.71  | 0.033 | 0.031 | 0.075 |
| Pput_4748 | 148549950 | azurin                                                                                    | 17.18 | 0    | 1.3   | 0.130 | 0.000 | 0.021 |
| Pput_4749 | 148549951 | hypothetical protein Pput_4749                                                            | 0     | 0    | 1.2   | 0.000 | 0.000 | 0.019 |
| Pput_4750 | 148549952 | hypothetical protein Pput_4750                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4751 | 148549953 | hypothetical protein Pput_4751                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4752 | 148549954 | hypothetical protein Pput_4752                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4753 | 148549955 | ABC transporter related                                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4754 | 148549956 | replicative DNA helicase                                                                  | 0     | 0.15 | 0     | 0.000 | 0.007 | 0.000 |
| Pput_4755 | 148549957 | 50S ribosomal protein L9                                                                  | 76.11 | 2.86 | 4.81  | 0.577 | 0.125 | 0.077 |
| Pput_4756 | 148549958 | hypothetical protein Pput_4756                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4757 | 148549959 | 30S ribosomal protein S18                                                                 | 71.62 | 1.11 | 4.12  | 0.542 | 0.049 | 0.066 |
| Pput_4758 | 148549960 | 30S ribosomal protein S6                                                                  | 96.71 | 2.57 | 7.03  | 0.733 | 0.113 | 0.112 |
| Pput_4759 | 148549961 | RNA methyltransferase                                                                     | 0.3   | 0.48 | 1.61  | 0.002 | 0.021 | 0.026 |
| Pput_4760 | 148549962 | ribonuclease R                                                                            | 1.44  | 0.4  | 1.34  | 0.011 | 0.018 | 0.021 |
| Pput_4761 | 148549963 | extracellular solute-binding protein                                                      | 3.84  | 0    | 0.34  | 0.029 | 0.000 | 0.005 |
| Pput_4762 | 148549964 | binding-protein-dependent transport systems inner membrane component                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4763 | 148549965 | hypothetical protein Pput_4763                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4764 | 148549966 | methyl-accepting chemotaxis sensory transducer                                            | 0     | 0.3  | 0.89  | 0.000 | 0.013 | 0.014 |
| Pput_4765 | 148549967 | adenylosuccinate synthetase                                                               | 5.4   | 0.58 | 4.45  | 0.041 | 0.025 | 0.071 |
| Pput_4766 | 148549968 | ATP phosphoribosyltransferase regulatory subunit                                          | 0.61  | 0.39 | 1.39  | 0.005 | 0.017 | 0.022 |
| Pput_4767 | 148549969 | HflC protein                                                                              | 7.68  | 1.95 | 19.04 | 0.058 | 0.085 | 0.304 |
| Pput_4768 | 148549970 | HflK protein                                                                              | 1.11  | 1.29 | 2.4   | 0.008 | 0.056 | 0.038 |

|           |           |                                                                                                     |      |      |      |       |       |       |
|-----------|-----------|-----------------------------------------------------------------------------------------------------|------|------|------|-------|-------|-------|
| Pput_4769 | 148549971 | GTP-binding protein, HSR1-related                                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4770 | 148549972 | RNA-binding protein Hfq                                                                             | 5.52 | 1.92 | 1.9  | 0.042 | 0.084 | 0.030 |
| Pput_4771 | 148549973 | tRNA delta(2)-isopentenylpyrophosphate transferase                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4772 | 148549974 | DNA mismatch repair protein                                                                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4773 | 148549975 | N-acetylmuramoyl-L-alanine amidase                                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4774 | 148549976 | hypothetical protein Pput_4774                                                                      | 3.14 | 0.23 | 0.5  | 0.024 | 0.010 | 0.008 |
| Pput_4775 | 148549977 | carbohydrate kinase, YjeF related protein                                                           | 0.24 | 0    | 0.65 | 0.002 | 0.000 | 0.010 |
| Pput_4776 | 148549978 | putative iron-sulfur cluster binding protein                                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4777 | 148549979 | hypothetical protein Pput_4777                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4778 | 148549980 | oligoribonuclease                                                                                   | 6.98 | 0.66 | 2.47 | 0.053 | 0.029 | 0.039 |
| Pput_4779 | 148549981 | ribosome-associated GTPase                                                                          | 0    | 0    | 0.31 | 0.000 | 0.000 | 0.005 |
| Pput_4780 | 148549982 | flagellar motor protein MotB                                                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4781 | 148549983 | flagellar motor protein MotA                                                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4782 | 148549984 | metal-dependent hydrolase HDOD                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4783 | 148549985 | rhodanese domain-containing protein                                                                 | 0.83 | 1.63 | 1.27 | 0.006 | 0.071 | 0.020 |
| Pput_4784 | 148549986 | phosphatidylserine decarboxylase                                                                    | 0.57 | 0.57 | 1.51 | 0.004 | 0.025 | 0.024 |
| Pput_4785 | 148549987 | phosphoserine phosphatase SerB                                                                      | 1.1  | 0    | 0.96 | 0.008 | 0.000 | 0.015 |
| Pput_4786 | 148549988 | hypothetical protein Pput_4786                                                                      | 0.28 | 0.31 | 0.78 | 0.002 | 0.014 | 0.012 |
| Pput_4787 | 148549989 | hypothetical protein Pput_4787                                                                      | 0.43 | 0    | 0    | 0.003 | 0.000 | 0.000 |
| Pput_4788 | 148549990 | DNA topoisomerase IV subunit A                                                                      | 0.19 | 0.3  | 0.33 | 0.001 | 0.013 | 0.005 |
| Pput_4789 | 148549991 | hypothetical protein Pput_4789                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4790 | 148549992 | hypothetical protein Pput_4790                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4791 | 148549993 | DNA topoisomerase IV subunit B                                                                      | 0.22 | 0    | 0.34 | 0.002 | 0.000 | 0.005 |
| Pput_4792 | 148549994 | hypothetical protein Pput_4792                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4793 | 148549995 | calcineurin phosphoesterase C-terminal domain-containing protein                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4794 | 148549996 | hypothetical protein Pput_4794                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4795 | 148549997 | NUDIX hydrolase                                                                                     | 1.29 | 0    | 2.47 | 0.010 | 0.000 | 0.039 |
| Pput_4796 | 148549998 | hypothetical protein Pput_4796                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4797 | 148549999 | putative hydroxymethylpyrimidine transporter CytX                                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4798 | 148550000 | thiamine biosynthesis protein ThiC                                                                  | 2.8  | 0    | 0    | 0.021 | 0.000 | 0.000 |
| Pput_4799 | 148550001 | TolC family type I secretion outer membrane protein                                                 | 0    | 0    | 0.47 | 0.000 | 0.000 | 0.008 |
| Pput_4800 | 148550002 | 3-deoxy-D-manno-octulosonic-acid transferase                                                        | 0    | 0.16 | 0.17 | 0.000 | 0.007 | 0.003 |
| Pput_4801 | 148550003 | LysR family transcriptional regulator                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4802 | 148550004 | small multidrug resistance protein                                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4803 | 148550005 | FAD dependent oxidoreductase                                                                        | 0.38 | 0.41 | 0.82 | 0.003 | 0.018 | 0.013 |
| Pput_4804 | 148550006 | aldo/keto reductase                                                                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4805 | 148550007 | hypothetical protein Pput_4805                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4806 | 148550008 | bifunctional heptose 7-phosphate kinase/heptose 1-phosphate adenyltransferase                       | 1.19 | 0.33 | 0.65 | 0.009 | 0.014 | 0.010 |
| Pput_4807 | 148550009 | lipid A ABC exporter, fused ATPase and inner membrane subunits MsbA                                 | 0.18 | 0.24 | 0.78 | 0.001 | 0.011 | 0.012 |
| Pput_4808 | 148550010 | O-antigen polymerase                                                                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4809 | 148550011 | hypothetical protein Pput_4809                                                                      | 2.28 | 1.44 | 2.73 | 0.017 | 0.063 | 0.044 |
| Pput_4810 | 148550012 | glycosyl transferase, group 1                                                                       | 0    | 0    | 0.84 | 0.000 | 0.000 | 0.013 |
| Pput_4811 | 148550013 | hypothetical protein Pput_4811                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4812 | 148550014 | hypothetical protein Pput_4812                                                                      | 0.68 | 0    | 0.63 | 0.005 | 0.000 | 0.010 |
| Pput_4813 | 148550015 | LmbE family protein                                                                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4814 | 148550016 | Mig-14 family protein                                                                               | 0    | 0    | 0.35 | 0.000 | 0.000 | 0.006 |
| Pput_4815 | 148550017 | glycosyl transferase, group 1                                                                       | 0    | 0.09 | 0.71 | 0.000 | 0.004 | 0.011 |
| Pput_4816 | 148550018 | carbamoyltransferase                                                                                | 0.91 | 0.18 | 0.61 | 0.007 | 0.008 | 0.010 |
| Pput_4817 | 148550019 | hypothetical protein Pput_4817                                                                      | 0.25 | 0    | 0.64 | 0.002 | 0.000 | 0.010 |
| Pput_4818 | 148550020 | sodium/proline symporter                                                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4819 | 148550021 | trifunctional transcriptional regulator/proline dehydrogenase/pyrroline-5-carboxylate dehydrogenase | 0    | 0.14 | 0.61 | 0.000 | 0.006 | 0.010 |
| Pput_4820 | 148550022 | hypothetical protein Pput_4820                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4821 | 148550023 | acyl-CoA dehydrogenase domain-containing protein                                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4822 | 148550024 | peptidase U62, modulator of DNA gyrase                                                              | 0    | 0.15 | 0.3  | 0.000 | 0.007 | 0.005 |
| Pput_4823 | 148550025 | hypothetical protein Pput_4823                                                                      | 0    | 0    | 0.16 | 0.000 | 0.000 | 0.003 |
| Pput_4824 | 148550026 | EmrB/QacA family drug resistance transporter                                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4825 | 148550027 | ATP-dependent RNA helicase DbpA                                                                     | 0.22 | 0.14 | 0    | 0.002 | 0.006 | 0.000 |
| Pput_4826 | 148550028 | hypothetical protein Pput_4826                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4827 | 148550029 | YccS/YhfK family integral membrane protein                                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4828 | 148550030 | extracellular solute-binding protein                                                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4829 | 148550031 | GCN5-related N-acetyltransferase                                                                    | 0    | 0    | 0.75 | 0.000 | 0.000 | 0.012 |
| Pput_4830 | 148550032 | hypothetical protein Pput_4830                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4831 | 148550033 | hypothetical protein Pput_4831                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4832 | 148550034 | response regulator receiver modulated diguanylate cyclase/phosphodiesterase with PAS/PAC sensor(s)  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4833 | 148550035 | fructose-1,6-bisphosphate aldolase                                                                  | 6.89 | 1.3  | 5.8  | 0.052 | 0.057 | 0.093 |
| Pput_4834 | 148550036 | hypothetical protein Pput_4834                                                                      | 1.11 | 0    | 0    | 0.008 | 0.000 | 0.000 |
| Pput_4835 | 148550037 | hypothetical protein Pput_4835                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4836 | 148550038 | phosphoglycerate kinase                                                                             | 4.02 | 0.87 | 1.31 | 0.030 | 0.038 | 0.021 |
| Pput_4837 | 148550039 | D-erythrose-4-phosphate dehydrogenase                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4838 | 148550040 | transketolase                                                                                       | 2.59 | 0.73 | 1.9  | 0.020 | 0.032 | 0.030 |
| Pput_4839 | 148550041 | ArsR family transcriptional regulator                                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4840 | 148550042 | S-adenosylmethionine synthetase                                                                     | 0.97 | 0.78 | 1.41 | 0.007 | 0.034 | 0.023 |
| Pput_4841 | 148550043 | NAD-dependent DNA ligase LigB                                                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4842 | 148550044 | hypothetical protein Pput_4842                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4843 | 148550045 | cytochrome c, class II                                                                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4844 | 148550046 | MltA domain-containing protein                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4845 | 148550047 | hypothetical protein Pput_4845                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4846 | 148550048 | hypothetical protein Pput_4846                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4847 | 148550049 | sodium/hydrogen exchanger                                                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4848 | 148550050 | thioesterase superfamily protein                                                                    | 2.18 | 0    | 0    | 0.017 | 0.000 | 0.000 |
| Pput_4849 | 148550051 | S-adenosyl-L-homocysteine hydrolase                                                                 | 5.54 | 0.15 | 2.84 | 0.042 | 0.007 | 0.045 |
| Pput_4850 | 148550052 | 5,10-methylenetetrahydrofolate reductase                                                            | 0.57 | 0.25 | 0.69 | 0.004 | 0.011 | 0.011 |
| Pput_4851 | 148550053 | hypothetical protein Pput_4851                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4852 | 148550054 | extracellular solute-binding protein                                                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4853 | 148550055 | DEAD/DEAH box helicase domain-containing protein                                                    | 0.21 | 0.05 | 0.51 | 0.002 | 0.002 | 0.008 |
| Pput_4854 | 148550056 | hypothetical protein Pput_4854                                                                      | 1.58 | 0    | 0    | 0.012 | 0.000 | 0.000 |
| Pput_4855 | 148550057 | cytochrome B561                                                                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4856 | 148550058 | amine oxidase                                                                                       | 0    | 0    | 0.12 | 0.000 | 0.000 | 0.002 |
| Pput_4857 | 148550059 | hypothetical protein Pput_4857                                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |

|           |           |                                                                                  |       |      |       |       |       |       |
|-----------|-----------|----------------------------------------------------------------------------------|-------|------|-------|-------|-------|-------|
| Pput_4858 | 148550060 | adenosylmethionine--8-amino-7-oxononanoate transaminase                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4859 | 148550061 | 16S ribosomal RNA methyltransferase RsmE                                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4860 | 148550062 | hemolysin III family channel protein                                             | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4861 | 148550063 | CheW domain-containing protein                                                   | 1.66  | 0    | 0.5   | 0.013 | 0.000 | 0.008 |
| Pput_4862 | 148550064 | CheA signal transduction histidine kinase                                        | 0     | 0    | 0.06  | 0.000 | 0.000 | 0.001 |
| Pput_4863 | 148550065 | methyl-accepting chemotaxis sensory transducer                                   | 0     | 0    | 0.15  | 0.000 | 0.000 | 0.002 |
| Pput_4864 | 148550066 | putative CheW protein                                                            | 0.67  | 0    | 0     | 0.005 | 0.000 | 0.000 |
| Pput_4865 | 148550067 | response regulator receiver protein                                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4866 | 148550068 | response regulator receiver protein                                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4867 | 148550069 | glutathione synthetase                                                           | 1.25  | 0    | 1.51  | 0.009 | 0.000 | 0.024 |
| Pput_4868 | 148550070 | TonB family protein                                                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4869 | 148550071 | hypothetical protein Pput_4869                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4870 | 148550072 | Holliday junction resolvase-like protein                                         | 0.56  | 0    | 0     | 0.004 | 0.000 | 0.000 |
| Pput_4871 | 148550073 | bifunctional pyrimidine regulatory protein PyrR uracil phosphoribosyltransferase | 1.68  | 0.76 | 0.67  | 0.013 | 0.033 | 0.011 |
| Pput_4872 | 148550074 | aspartate carbamoyltransferase catalytic subunit                                 | 4.44  | 0.8  | 4.24  | 0.034 | 0.035 | 0.068 |
| Pput_4873 | 148550075 | dihydroorotase                                                                   | 1.16  | 0.38 | 1.26  | 0.009 | 0.017 | 0.020 |
| Pput_4874 | 229328216 | ATP-dependent protease peptidase subunit                                         | 16.89 | 3.18 | 4.26  | 0.128 | 0.139 | 0.068 |
| Pput_4875 | 148550077 | ATP-dependent protease ATP-binding subunit HslU                                  | 12.26 | 2.92 | 5.82  | 0.093 | 0.128 | 0.093 |
| Pput_4876 | 148550078 | hypothetical protein Pput_4876                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4877 | 148550079 | poly(R)-hydroxyalkanoic acid synthase, class II                                  | 0     | 0    | 0.38  | 0.000 | 0.000 | 0.006 |
| Pput_4878 | 148550080 | poly(3-hydroxyalkanoate) depolymerase                                            | 0     | 0    | 0.86  | 0.000 | 0.000 | 0.014 |
| Pput_4879 | 148550081 | poly(R)-hydroxyalkanoic acid synthase, class II                                  | 0     | 0    | 0.72  | 0.000 | 0.000 | 0.012 |
| Pput_4880 | 148550082 | TetR family transcriptional regulator                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4881 | 148550083 | poly(hydroxyalkanoate) granule-associated protein                                | 16.85 | 1.58 | 24.23 | 0.128 | 0.069 | 0.387 |
| Pput_4882 | 148550084 | poly(hydroxyalkanoate) granule-associated protein                                | 0     | 0    | 6.66  | 0.000 | 0.000 | 0.106 |
| Pput_4883 | 148550085 | hypothetical protein Pput_4883                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4884 | 148550086 | putative polyhydroxyalkanoic acid system protein                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4885 | 148550087 | ubiquinone/menaquinone biosynthesis methyltransferase                            | 2.5   | 1.72 | 6.9   | 0.019 | 0.075 | 0.110 |
| Pput_4886 | 148550088 | hypothetical protein Pput_4886                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4887 | 148550089 | 2-polyprenylphenol 6-hydroxylase                                                 | 0.12  | 0    | 0     | 0.001 | 0.000 | 0.000 |
| Pput_4888 | 148550090 | phosphoribosyl-AMP cyclohydrolase                                                | 2.07  | 0    | 0     | 0.016 | 0.000 | 0.000 |
| Pput_4889 | 148550091 | phosphoribosyl-ATP pyrophosphatase                                               | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4890 | 148550092 | twin arginine translocase protein A                                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4891 | 148550093 | sec-independent translocase                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4892 | 148550094 | Sec-independent protein translocase, TatC subunit                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4893 | 148550095 | 16S ribosomal RNA methyltransferase RsmE                                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4894 | 148550096 | methyl-accepting chemotaxis sensory transducer                                   | 0.23  | 0.52 | 1     | 0.002 | 0.023 | 0.016 |
| Pput_4895 | 148550097 | methyl-accepting chemotaxis sensory transducer                                   | 0     | 0    | 0.27  | 0.000 | 0.000 | 0.004 |
| Pput_4896 | 148550098 | ABC transporter related                                                          | 0     | 0    | 0.48  | 0.000 | 0.000 | 0.008 |
| Pput_4897 | 148550099 | polar amino acid ABC transporter, inner membrane subunit                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4898 | 148550100 | extracellular solute-binding protein                                             | 5.91  | 0.27 | 8.18  | 0.045 | 0.012 | 0.131 |
| Pput_4899 | 148550101 | glucosyltransferase MdoH                                                         | 0.08  | 0.12 | 0.36  | 0.001 | 0.005 | 0.006 |
| Pput_4900 | 148550102 | glucan biosynthesis protein G                                                    | 1.55  | 0    | 0.55  | 0.012 | 0.000 | 0.009 |
| Pput_4901 | 148550103 | D-tyrosyl-tRNA(Tyr) deacylase                                                    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4902 | 148550104 | proline iminopeptidase                                                           | 1.13  | 0.34 | 1.44  | 0.009 | 0.015 | 0.023 |
| Pput_4903 | 148550105 | N-formylglutamate amidohydrolase                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4904 | 148550106 | imidazolonepropionase                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4905 | 148550107 | amino acid permease-associated region                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4906 | 148550108 | histidine ammonia-lyase                                                          | 0.14  | 0    | 0     | 0.001 | 0.000 | 0.000 |
| Pput_4907 | 148550109 | urocanate hydratase                                                              | 0.43  | 0.13 | 0.52  | 0.003 | 0.006 | 0.008 |
| Pput_4908 | 148550110 | hypothetical protein Pput_4908                                                   | 0.96  | 0    | 0     | 0.007 | 0.000 | 0.000 |
| Pput_4909 | 148550111 | GntR family transcriptional regulator                                            | 0     | 0.47 | 1.32  | 0.000 | 0.021 | 0.021 |
| Pput_4910 | 148550112 | N-formimino-L-glutamate deiminase                                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4911 | 148550113 | Lipocalin family protein                                                         | 0.88  | 0.37 | 0     | 0.007 | 0.016 | 0.000 |
| Pput_4912 | 148550114 | hypothetical protein Pput_4912                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4913 | 148550115 | hypothetical protein Pput_4913                                                   | 0.51  | 0.83 | 1.57  | 0.004 | 0.036 | 0.025 |
| Pput_4914 | 148550116 | fructose-1,6-bisphosphatase                                                      | 6.01  | 0.78 | 3.6   | 0.046 | 0.034 | 0.058 |
| Pput_4915 | 148550117 | glycogen/starch/alpha-glucan phosphorylase                                       | 0.84  | 0.27 | 6.49  | 0.006 | 0.012 | 0.104 |
| Pput_4916 | 148550118 | hypothetical protein Pput_4916                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4917 | 148550119 | PhoPQ-activated pathogenicity-related protein-like protein                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4918 | 148550120 | GTP-binding protein TypA                                                         | 5.19  | 1.01 | 1.91  | 0.039 | 0.044 | 0.031 |
| Pput_4919 | 148550121 | thiamine biosynthesis protein ThiI                                               | 0.14  | 0    | 0.14  | 0.001 | 0.000 | 0.002 |
| Pput_4920 | 148550122 | glutamine synthetase, type I                                                     | 17.22 | 2.03 | 17.05 | 0.130 | 0.089 | 0.273 |
| Pput_4921 | 148550123 | chorismate mutase, putative                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4922 | 148550124 | signal transduction histidine kinase, nitrogen specific, NtrB                    | 0     | 0    | 0.87  | 0.000 | 0.000 | 0.014 |
| Pput_4923 | 148550125 | nitrogen metabolism transcriptional regulator NtrC                               | 0.4   | 0.23 | 2.75  | 0.003 | 0.010 | 0.044 |
| Pput_4924 | 148550126 | hypothetical protein Pput_4924                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4925 | 148550127 | RNA methyltransferase                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4926 | 148550128 | preprotein translocase subunit SecB                                              | 7.05  | 1.2  | 4.16  | 0.053 | 0.053 | 0.066 |
| Pput_4927 | 148550129 | glutaredoxin 3                                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4928 | 148550130 | rhodanese domain-containing protein                                              | 2.39  | 0    | 0     | 0.018 | 0.000 | 0.000 |
| Pput_4929 | 148550131 | phosphoglyceromutase                                                             | 1.29  | 0.22 | 0.74  | 0.010 | 0.010 | 0.012 |
| Pput_4930 | 148550132 | peptidase M23B                                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4931 | 148550133 | carboxyl-terminal protease                                                       | 1.2   | 0.17 | 0.99  | 0.009 | 0.007 | 0.016 |
| Pput_4932 | 148550134 | protein of unknown function DUF610, YibQ                                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4933 | 148550135 | hypothetical protein Pput_4933                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4934 | 148550136 | choline/carnitine/betaine transporter                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4935 | 148550137 | transcriptional regulator BetI                                                   | 2.33  | 1.08 | 1.67  | 0.018 | 0.047 | 0.027 |
| Pput_4936 | 148550138 | betaine aldehyde dehydrogenase                                                   | 0     | 0    | 0.21  | 0.000 | 0.000 | 0.003 |
| Pput_4937 | 148550139 | choline dehydrogenase                                                            | 0.18  | 0.06 | 0.25  | 0.001 | 0.003 | 0.004 |
| Pput_4938 | 148550140 | hypothetical protein Pput_4938                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4939 | 148550141 | potassium/proton antiporter                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4940 | 148550142 | potassium efflux protein KefA                                                    | 0     | 0    | 0.06  | 0.000 | 0.000 | 0.001 |
| Pput_4941 | 148550143 | hypothetical protein Pput_4941                                                   | 0     | 0.14 | 0.3   | 0.000 | 0.006 | 0.005 |
| Pput_4942 | 148550144 | thioredoxin                                                                      | 1.6   | 0    | 0     | 0.012 | 0.000 | 0.000 |
| Pput_4943 | 148550145 | cobyrinic acid a,c-diamide synthase                                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4944 | 148550146 | LysR family transcriptional regulator                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4945 | 148550147 | major facilitator transporter                                                    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_4946 | 148550148 | hypothetical protein Pput_4946                                                   | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |



|           |           |                                                                      |      |      |      |       |       |       |
|-----------|-----------|----------------------------------------------------------------------|------|------|------|-------|-------|-------|
| Pput_4947 | 148550149 | uroporphyrinogen decarboxylase                                       | 0.2  | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_4948 | 148550150 | glutamate synthase subunit beta                                      | 1.43 | 0.3  | 0.39 | 0.011 | 0.013 | 0.006 |
| Pput_4949 | 148550151 | glutamate synthase subunit alpha                                     | 0.77 | 0.12 | 0.42 | 0.006 | 0.005 | 0.007 |
| Pput_4950 | 148550152 | sporulation domain-containing protein                                | 0.28 | 0    | 0.21 | 0.002 | 0.000 | 0.003 |
| Pput_4951 | 148550153 | 3-dehydroquinase synthase                                            | 0.92 | 0    | 0.53 | 0.007 | 0.000 | 0.008 |
| Pput_4952 | 148550154 | shikimate kinase                                                     | 2.39 | 1.06 | 1.36 | 0.018 | 0.046 | 0.022 |
| Pput_4953 | 148550155 | type IV pilus secretin PilQ                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4954 | 148550156 | hypothetical protein Pput_4954                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4955 | 148550157 | fimbrial assembly family protein                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4956 | 148550158 | Tfp pilus assembly protein ATPase PilM-like protein                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4957 | 148550159 | 1A family penicillin-binding protein                                 | 0    | 0    | 0.17 | 0.000 | 0.000 | 0.003 |
| Pput_4958 | 148550160 | malate dehydrogenase                                                 | 7.93 | 1.03 | 3.58 | 0.060 | 0.045 | 0.057 |
| Pput_4959 | 148550161 | nuclease                                                             | 0    | 0    | 0.6  | 0.000 | 0.000 | 0.010 |
| Pput_4960 | 148550162 | ribosomal protein L31                                                | 2.33 | 0    | 0    | 0.018 | 0.000 | 0.000 |
| Pput_4961 | 148550163 | primosome assembly protein PriA                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4962 | 148550164 | arginyl-tRNA synthetase                                              | 2.15 | 0.4  | 2.44 | 0.016 | 0.018 | 0.039 |
| Pput_4963 | 148550165 | sporulation domain-containing protein                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4964 | 148550166 | TM2 domain-containing protein                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4965 | 148550167 | NLP/P60 protein                                                      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4966 | 148550168 | twitching motility protein                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4967 | 148550169 | alanine racemase domain-containing protein                           | 1.07 | 1.07 | 1.34 | 0.008 | 0.047 | 0.021 |
| Pput_4968 | 148550170 | pyrroline-5-carboxylate reductase                                    | 2.37 | 1.4  | 3.93 | 0.018 | 0.061 | 0.063 |
| Pput_4969 | 148550171 | protein of unknown function YGGT                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4970 | 148550172 | homoserine O-acetyltransferase                                       | 0    | 0.19 | 0.48 | 0.000 | 0.008 | 0.008 |
| Pput_4971 | 148550173 | methionine biosynthesis protein MetW                                 | 0.35 | 0    | 0    | 0.003 | 0.000 | 0.000 |
| Pput_4972 | 148550174 | hypothetical protein Pput_4972                                       | 0.56 | 0    | 0    | 0.004 | 0.000 | 0.000 |
| Pput_4973 | 148550175 | putative deoxyribonucleotide triphosphate pyrophosphatase            | 1.5  | 0    | 0    | 0.011 | 0.000 | 0.000 |
| Pput_4974 | 148550176 | coproporphyrinogen III oxidase                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4975 | 148550177 | hypothetical protein Pput_4975                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4976 | 148550178 | tRNA (guanine-N(7))-methyltransferase                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4977 | 148550179 | thiazole synthase                                                    | 0.76 | 0.28 | 0.67 | 0.006 | 0.012 | 0.011 |
| Pput_4978 | 148550180 | sulfur carrier protein ThiS                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4979 | 148550181 | hypothetical protein Pput_4979                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4980 | 148550182 | monofunctional biosynthetic peptidoglycan transglycosylase           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4981 | 148550183 | RNA polymerase factor sigma-32                                       | 0    | 0    | 0.25 | 0.000 | 0.000 | 0.004 |
| Pput_4982 | 148550184 | hypothetical protein Pput_4982                                       | 0.21 | 0    | 0.21 | 0.002 | 0.000 | 0.003 |
| Pput_4983 | 148550185 | cell division ATP-binding protein FtsE                               | 0.54 | 0.33 | 0.7  | 0.004 | 0.014 | 0.011 |
| Pput_4984 | 148550186 | signal recognition particle-docking protein FtsY                     | 1.21 | 0.07 | 0.56 | 0.009 | 0.003 | 0.009 |
| Pput_4985 | 148550187 | peptidase M16 domain-containing protein                              | 0.15 | 0    | 0.5  | 0.001 | 0.000 | 0.008 |
| Pput_4986 | 148550188 | peptidase M16 domain-containing protein                              | 0.23 | 0    | 0.39 | 0.002 | 0.000 | 0.006 |
| Pput_4987 | 148550189 | putative methyltransferase                                           | 0    | 0    | 1.2  | 0.000 | 0.000 | 0.019 |
| Pput_4988 | 148550190 | peptidase M16 domain-containing protein                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4989 | 148550191 | peptidase M16 domain-containing protein                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4990 | 148550192 | alpha/beta hydrolase fold                                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4991 | 148550193 | transposase, IS111A/IS1328/IS1533                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4992 | 148550194 | rhodanese domain-containing protein                                  | 2.02 | 0.41 | 1.93 | 0.015 | 0.018 | 0.031 |
| Pput_4993 | 148550195 | TetR family transcriptional regulator                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4994 | 148550196 | aldehyde dehydrogenase                                               | 0    | 0.15 | 0    | 0.000 | 0.007 | 0.000 |
| Pput_4995 | 148550197 | hypothetical protein Pput_4995                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4996 | 148550198 | glucose-methanol-choline oxidoreductase                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4997 | 148550199 | phosphopantetheine adenylyltransferase                               | 5.45 | 0.48 | 1.73 | 0.041 | 0.021 | 0.028 |
| Pput_4998 | 148550200 | 4Fe-4S ferredoxin iron-sulfur binding domain-containing protein      | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_4999 | 148550201 | formamidopyrimidine-DNA glycosylase                                  | 0    | 0    | 0.54 | 0.000 | 0.000 | 0.009 |
| Pput_5000 | 148550202 | putative signal transduction protein                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5001 | 148550203 | hypothetical protein Pput_5001                                       | 0    | 0.27 | 0.26 | 0.000 | 0.012 | 0.004 |
| Pput_5002 | 148550204 | dihydroxy-acid dehydratase                                           | 2.96 | 0.39 | 1.53 | 0.022 | 0.017 | 0.024 |
| Pput_5003 | 148550205 | hypothetical protein Pput_5003                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5004 | 148550206 | sodium:dicarboxylate symporter                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5005 | 148550207 | dihydrofolate reductase                                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5006 | 148550208 | hypothetical protein Pput_5006                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5007 | 148550209 | GTP-binding protein, HSR1-related                                    | 0.22 | 0.15 | 0.57 | 0.002 | 0.007 | 0.009 |
| Pput_5008 | 148550210 | extracellular solute-binding protein                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5009 | 148550211 | binding-protein-dependent transport systems inner membrane component | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5010 | 148550212 | ABC transporter related                                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5011 | 148550213 | LysR family transcriptional regulator                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5012 | 148550214 | heavy metal translocating P-type ATPase                              | 0    | 0    | 0.15 | 0.000 | 0.000 | 0.002 |
| Pput_5013 | 148550215 | MerR family transcriptional regulator                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5014 | 148550216 | thymidylate synthase-like protein                                    | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5015 | 148550217 | AAA ATPase                                                           | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5016 | 148550218 | hypothetical protein Pput_5016                                       | 0    | 0    | 0.13 | 0.000 | 0.000 | 0.002 |
| Pput_5017 | 148550219 | hypothetical protein Pput_5017                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5018 | 148550220 | hypothetical protein Pput_5018                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5019 | 148550221 | hypothetical protein Pput_5019                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5020 | 148550222 | hypothetical protein Pput_5020                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5021 | 148550223 | 3-isopropylmalate dehydratase, small subunit                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5022 | 148550224 | 3-isopropylmalate dehydratase, large subunit                         | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5023 | 148550225 | major facilitator transporter                                        | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5024 | 148550226 | pyruvate carboxyltransferase                                         | 0.24 | 0    | 0    | 0.002 | 0.000 | 0.000 |
| Pput_5025 | 148550227 | L-carnitine dehydratase/bile acid-inducible protein F                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5026 | 148550228 | LysR family transcriptional regulator                                | 0.24 | 0    | 0.46 | 0.002 | 0.000 | 0.007 |
| Pput_5027 | 148550229 | hypothetical protein Pput_5027                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5028 | 148550230 | hypothetical protein Pput_5028                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5029 | 148550231 | hypothetical protein Pput_5029                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5030 | 148550232 | DNA-directed DNA polymerase                                          | 0.16 | 0    | 0    | 0.001 | 0.000 | 0.000 |
| Pput_5031 | 148550233 | putative prophage repressor                                          | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5032 | 148550234 | hypothetical protein Pput_5032                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5034 | 148550235 | hypothetical protein Pput_5034                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5035 | 148550236 | hypothetical protein Pput_5035                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5037 | 148550237 | hypothetical protein Pput_5037                                       | 2.02 | 0    | 0    | 0.015 | 0.000 | 0.000 |

|           |           |                                                                      |      |      |      |       |       |       |
|-----------|-----------|----------------------------------------------------------------------|------|------|------|-------|-------|-------|
| Pput_5038 | 148550238 | hypothetical protein Pput_5038                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5039 | 148550239 | hypothetical protein Pput_5039                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5040 | 148550240 | hypothetical protein Pput_5040                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5041 | 148550241 | hypothetical protein Pput_5041                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5042 | 148550242 | hypothetical protein Pput_5042                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5043 | 148550243 | thymidylate synthase                                                 | 0.75 | 0    | 0    | 0.006 | 0.000 | 0.000 |
| Pput_5044 | 148550244 | hypothetical protein Pput_5044                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5045 | 148550245 | hypothetical protein Pput_5045                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5046 | 148550246 | phage integrase family protein                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5047 | 148550247 | phage integrase family protein                                       | 0    | 0    | 0.16 | 0.000 | 0.000 | 0.003 |
| Pput_5048 | 148550248 | thymidylate synthase                                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5049 | 148550249 | prolipoprotein diacylglycerol transferase                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5050 | 148550250 | hypothetical protein Pput_5050                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5051 | 148550251 | hypothetical protein Pput_5051                                       | 0.49 | 0    | 0    | 0.004 | 0.000 | 0.000 |
| Pput_5052 | 148550252 | phosphoenolpyruvate-protein phosphotransferase PtsP                  | 0.72 | 0.24 | 1.37 | 0.005 | 0.011 | 0.022 |
| Pput_5053 | 148550253 | dinucleoside polyphosphate hydrolase                                 | 0    | 0    | 0.45 | 0.000 | 0.000 | 0.007 |
| Pput_5054 | 148550254 | HAD family hydrolase                                                 | 0    | 0    | 0.3  | 0.000 | 0.000 | 0.005 |
| Pput_5055 | 148550255 | hypothetical protein Pput_5055                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5056 | 148550256 | threonine dehydratase                                                | 0.28 | 0.14 | 0    | 0.002 | 0.006 | 0.000 |
| Pput_5057 | 148550257 | ribose-5-phosphate isomerase A                                       | 1.46 | 0    | 0    | 0.011 | 0.000 | 0.000 |
| Pput_5058 | 148550258 | SdiA-regulated domain-containing protein                             | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5059 | 148550259 | SdiA-regulated domain-containing protein                             | 1.12 | 0.24 | 0    | 0.008 | 0.011 | 0.000 |
| Pput_5060 | 148550260 | fumarylacetoacetate (FAA) hydrolase                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5061 | 148550261 | FAD linked oxidase domain-containing protein                         | 0    | 0    | 0.22 | 0.000 | 0.000 | 0.004 |
| Pput_5062 | 148550262 | D-3-phosphoglycerate dehydrogenase                                   | 4.8  | 0.76 | 2.85 | 0.036 | 0.033 | 0.046 |
| Pput_5063 | 148550263 | hypothetical protein Pput_5063                                       | 0.98 | 0    | 0    | 0.007 | 0.000 | 0.000 |
| Pput_5064 | 148550264 | hypothetical protein Pput_5064                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5065 | 148550265 | hypothetical protein Pput_5065                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5066 | 148550266 | 2OG-Fe(II) oxygenase                                                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5067 | 148550267 | hypothetical protein Pput_5067                                       | 0.48 | 0    | 0.3  | 0.004 | 0.000 | 0.005 |
| Pput_5068 | 148550268 | lysophospholipase-like protein                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5069 | 148550269 | hypothetical protein Pput_5069                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5070 | 148550270 | hexapeptide repeat-containing transferase                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5071 | 148550271 | peptidase S45, penicillin amidase                                    | 0    | 0    | 0.09 | 0.000 | 0.000 | 0.001 |
| Pput_5072 | 148550272 | NLPA lipoprotein                                                     | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5073 | 148550273 | sigma-54 factor interaction domain-containing protein                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5074 | 148550274 | hypothetical protein Pput_5074                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5075 | 148550275 | sulfate ABC transporter, ATPase subunit                              | 0.31 | 0.47 | 0.65 | 0.002 | 0.021 | 0.010 |
| Pput_5076 | 148550276 | sulfate ABC transporter, inner membrane subunit CysW                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5077 | 148550277 | sulfate ABC transporter, inner membrane subunit CysT                 | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5078 | 148550278 | sulfate ABC transporter, periplasmic sulfate-binding protein         | 0.48 | 0    | 0    | 0.004 | 0.000 | 0.000 |
| Pput_5079 | 148550279 | hypothetical protein Pput_5079                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5080 | 148550280 | acriflavin resistance protein                                        | 0    | 0    | 0.42 | 0.000 | 0.000 | 0.007 |
| Pput_5081 | 148550281 | RND family efflux transporter MFP subunit                            | 0    | 0    | 0.21 | 0.000 | 0.000 | 0.003 |
| Pput_5082 | 148550282 | RND family efflux transporter MFP subunit                            | 0.21 | 0    | 0.53 | 0.002 | 0.000 | 0.008 |
| Pput_5083 | 148550283 | hypothetical protein Pput_5083                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5084 | 148550284 | ornithine carbamoyltransferase                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5085 | 148550285 | binding-protein-dependent transport systems inner membrane component | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5086 | 148550286 | spermidine/putrescine ABC transporter ATPase subunit                 | 0    | 0.8  | 1.4  | 0.000 | 0.035 | 0.022 |
| Pput_5087 | 148550287 | extracellular solute-binding protein                                 | 0.57 | 0    | 0    | 0.004 | 0.000 | 0.000 |
| Pput_5088 | 148550288 | extracellular solute-binding protein                                 | 6.69 | 0    | 4.22 | 0.051 | 0.000 | 0.067 |
| Pput_5089 | 148550289 | putative aminotransferase                                            | 0    | 0    | 0.22 | 0.000 | 0.000 | 0.004 |
| Pput_5090 | 148550290 | glutamate--putrescine ligase                                         | 1.09 | 0.24 | 0.22 | 0.008 | 0.011 | 0.004 |
| Pput_5091 | 148550291 | glutamate--putrescine ligase                                         | 0.3  | 0.07 | 0.3  | 0.002 | 0.003 | 0.005 |
| Pput_5092 | 148550292 | N-acetylglutamate synthase                                           | 0.46 | 0.25 | 0.62 | 0.003 | 0.011 | 0.010 |
| Pput_5093 | 148550293 | acetylornithine deacetylase                                          | 0    | 0.29 | 0.47 | 0.000 | 0.013 | 0.008 |
| Pput_5094 | 148550294 | adenylate cyclase                                                    | 0.46 | 0    | 0    | 0.003 | 0.000 | 0.000 |
| Pput_5095 | 148550295 | AsnC family transcriptional regulator                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5096 | 148550296 | hypothetical protein Pput_5096                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5097 | 148550297 | type II secretion system protein E                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5098 | 148550298 | hypothetical protein Pput_5098                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5099 | 148550299 | glycine dehydrogenase                                                | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5100 | 148550300 | glycine cleavage system protein H                                    | 1.63 | 0    | 0    | 0.012 | 0.000 | 0.000 |
| Pput_5101 | 148550301 | glycine cleavage system aminomethyltransferase T                     | 0    | 0.31 | 0.78 | 0.000 | 0.014 | 0.012 |
| Pput_5102 | 148550302 | binding-protein-dependent transport systems inner membrane component | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5103 | 148550303 | extracellular solute-binding protein                                 | 0.47 | 0    | 0    | 0.004 | 0.000 | 0.000 |
| Pput_5104 | 148550304 | 2-octaprenyl-3-methyl-6-methoxy-1,4-benzoquinol hydroxylase          | 0    | 0.5  | 1.07 | 0.000 | 0.022 | 0.017 |
| Pput_5105 | 148550305 | hypothetical protein Pput_5105                                       | 0.47 | 0    | 0    | 0.004 | 0.000 | 0.000 |
| Pput_5106 | 148550306 | 2-octaprenyl-6-methoxyphenyl hydroxylase                             | 0    | 0.18 | 0.63 | 0.000 | 0.008 | 0.010 |
| Pput_5107 | 148550307 | peptidase M24                                                        | 0.76 | 0.34 | 0.68 | 0.006 | 0.015 | 0.011 |
| Pput_5108 | 148550308 | hypothetical protein Pput_5108                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5109 | 148550309 | hypothetical protein Pput_5109                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5110 | 148550310 | hypothetical protein Pput_5110                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5111 | 148550311 | 5-formyltetrahydrofolate cyclo-ligase                                | 0.35 | 0    | 0.72 | 0.003 | 0.000 | 0.012 |
| Pput_5112 | 148550312 | hypothetical protein Pput_5112                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5113 | 148550313 | hypothetical protein Pput_5113                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5114 | 148550314 | secretion protein HlyD family protein                                | 0    | 0.23 | 0.97 | 0.000 | 0.010 | 0.016 |
| Pput_5115 | 148550315 | ABC transporter related                                              | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5116 | 148550316 | ABC-2 type transporter                                               | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5117 | 148550317 | hypothetical protein Pput_5117                                       | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5118 | 148550318 | flagellar basal body-associated protein FliL-like protein            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5119 | 148550319 | alcohol dehydrogenase                                                | 0.24 | 0.24 | 0    | 0.002 | 0.011 | 0.000 |
| Pput_5120 | 148550320 | ChaC family protein                                                  | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5121 | 148550321 | CDP-6-deoxy-delta-3,4-glucoseen reductase                            | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5122 | 148550322 | UbiD family decarboxylase                                            | 0.39 | 0    | 0.43 | 0.003 | 0.000 | 0.007 |
| Pput_5123 | 148550323 | transcription termination factor Rho                                 | 5.67 | 1.69 | 4.12 | 0.043 | 0.074 | 0.066 |
| Pput_5124 | 148550324 | thioredoxin                                                          | 9.75 | 0    | 1.37 | 0.074 | 0.000 | 0.022 |
| Pput_5125 | 148550325 | Ppx/GppA phosphatase                                                 | 1.02 | 0.38 | 1.59 | 0.008 | 0.017 | 0.025 |
| Pput_5126 | 148550326 | polyphosphate kinase                                                 | 0.42 | 0.14 | 0.91 | 0.003 | 0.006 | 0.015 |

|           |           |                                                                                      |       |      |       |       |       |       |
|-----------|-----------|--------------------------------------------------------------------------------------|-------|------|-------|-------|-------|-------|
| Pput_5127 | 148550327 | hypothetical protein Pput_5127                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5128 | 148550328 | sterol desaturase-like protein                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5129 | 148550329 | isoprenoid biosynthesis protein with amidotransferase-like domain                    | 0.73  | 0    | 0.48  | 0.006 | 0.000 | 0.008 |
| Pput_5130 | 148550330 | hypothetical protein Pput_5130                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5131 | 148550331 | adenylate cyclase                                                                    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5132 | 148550332 | nucleoside diphosphate kinase regulator                                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5133 | 148550333 | hypothetical protein Pput_5133                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5134 | 148550334 | frataxin-like protein                                                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5135 | 148550335 | hypothetical protein Pput_5135                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5136 | 148550336 | diaminopimelate decarboxylase                                                        | 0     | 0.27 | 0.37  | 0.000 | 0.012 | 0.006 |
| Pput_5137 | 148550337 | diaminopimelate epimerase                                                            | 0.26  | 0    | 0.54  | 0.002 | 0.000 | 0.009 |
| Pput_5138 | 148550338 | hypothetical protein Pput_5138                                                       | 0.59  | 0.5  | 0     | 0.004 | 0.022 | 0.000 |
| Pput_5139 | 148550339 | site-specific tyrosine recombinase XerC                                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5140 | 148550340 | HAD family hydrolase                                                                 | 0.83  | 0.32 | 1.21  | 0.006 | 0.014 | 0.019 |
| Pput_5141 | 148550341 | hypothetical protein Pput_5141                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5142 | 148550342 | ammonium transporter                                                                 | 0     | 0    | 0.65  | 0.000 | 0.000 | 0.010 |
| Pput_5143 | 148550343 | nitrogen regulatory protein P-II                                                     | 7.26  | 1.5  | 5.63  | 0.055 | 0.066 | 0.090 |
| Pput_5144 | 148550344 | hypothetical protein Pput_5144                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5145 | 148550345 | hypothetical protein Pput_5145                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5146 | 148550346 | Sel1 domain-containing protein                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5147 | 148550347 | ATPase with chaperone activity-like protein                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5148 | 148550348 | hypothetical protein Pput_5148                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5149 | 148550349 | Mg chelatase, subunit ChlI                                                           | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5150 | 148550350 | response regulator receiver protein                                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5151 | 148550351 | response regulator receiver protein                                                  | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5152 | 148550352 | ATPase domain-containing protein                                                     | 0.08  | 0    | 0     | 0.001 | 0.000 | 0.000 |
| Pput_5153 | 148550353 | isochorismatase hydrolase                                                            | 0.53  | 0    | 0     | 0.004 | 0.000 | 0.000 |
| Pput_5154 | 148550354 | helix-turn-helix domain-containing protein                                           | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5155 | 148550355 | AraC family transcriptional regulator                                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5156 | 148550356 | potassium efflux system protein                                                      | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5157 | 148550357 | hypothetical protein Pput_5157                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5158 | 148550358 | isochorismatase hydrolase                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5159 | 148550359 | LysR family transcriptional regulator                                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5160 | 148550360 | outer membrane porin                                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5161 | 148550361 | protein of unknown function DUF894, DitE                                             | 0     | 0.06 | 0     | 0.000 | 0.003 | 0.000 |
| Pput_5162 | 148550362 | amidohydrolase 3                                                                     | 0.32  | 0.05 | 0.73  | 0.002 | 0.002 | 0.012 |
| Pput_5163 | 148550363 | alpha/beta hydrolase fold                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5164 | 148550364 | hypothetical protein Pput_5164                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5165 | 148550365 | isochorismatase hydrolase                                                            | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5166 | 148550366 | cyclic nucleotide-regulated small mechanosensitive ion channel                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5167 | 148550367 | FAD dependent oxidoreductase                                                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5168 | 148550368 | aldehyde dehydrogenase                                                               | 0.31  | 0.22 | 1.06  | 0.002 | 0.010 | 0.017 |
| Pput_5169 | 148550369 | LysR family transcriptional regulator                                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5170 | 148550370 | hypothetical protein Pput_5170                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5171 | 148550371 | LysR family transcriptional regulator                                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5172 | 148550372 | multidrug efflux protein NorA                                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5173 | 148550373 | diguanylate cyclase/phosphodiesterase                                                | 0     | 0.12 | 0     | 0.000 | 0.005 | 0.000 |
| Pput_5174 | 148550374 | ATP-dependent DNA helicase Rep                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5175 | 148550375 | xanthine phosphoribosyltransferase                                                   | 3.81  | 0.99 | 1.36  | 0.029 | 0.043 | 0.022 |
| Pput_5176 | 148550376 | Acetyl-CoA hydrolase-like protein                                                    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5177 | 148550377 | cytochrome c5                                                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5178 | 148550378 | XRE family transcriptional regulator                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5179 | 148550379 | alanine racemase                                                                     | 0     | 0.2  | 0.44  | 0.000 | 0.009 | 0.007 |
| Pput_5180 | 148550380 | D-amino acid dehydrogenase small subunit                                             | 0.16  | 0.25 | 0.24  | 0.001 | 0.011 | 0.004 |
| Pput_5181 | 148550381 | AsnC family transcriptional regulator                                                | 1.29  | 0.45 | 0.6   | 0.010 | 0.020 | 0.010 |
| Pput_5182 | 148550382 | hypothetical protein Pput_5182                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5183 | 148550383 | FAD dependent oxidoreductase                                                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5184 | 148550384 | hypothetical protein Pput_5184                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5185 | 148550385 | GntR family transcriptional regulator                                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5186 | 148550386 | phospholipase D/transphosphatidylase                                                 | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5187 | 148550387 | major facilitator transporter                                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5188 | 148550388 | aldehyde dehydrogenase                                                               | 1.62  | 0.29 | 0.66  | 0.012 | 0.013 | 0.011 |
| Pput_5189 | 148550389 | protein of unknown function DUF861, cupin_3                                          | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5190 | 148550390 | hypothetical protein Pput_5190                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5191 | 148550391 | 50S ribosomal protein L33                                                            | 9.51  | 0    | 0     | 0.072 | 0.000 | 0.000 |
| Pput_5192 | 148550392 | 50S ribosomal protein L28                                                            | 22.89 | 8.38 | 22.19 | 0.173 | 0.367 | 0.355 |
| Pput_5193 | 148550393 | extracellular solute-binding protein                                                 | 0.99  | 0    | 1.2   | 0.007 | 0.000 | 0.019 |
| Pput_5194 | 148550394 | DNA repair protein RadC                                                              | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5195 | 148550395 | bifunctional phosphopantothienoylcysteine decarboxylase/phosphopantothenate synthase | 0.37  | 0.73 | 1.2   | 0.003 | 0.032 | 0.019 |
| Pput_5196 | 148550396 | deoxyuridine 5'-triphosphate nucleotidohydrolase                                     | 1.39  | 0    | 0.79  | 0.011 | 0.000 | 0.013 |
| Pput_5197 | 148550397 | phosphomannomutase                                                                   | 0.15  | 0    | 0     | 0.001 | 0.000 | 0.000 |
| Pput_5198 | 148550398 | acetylglutamate kinase                                                               | 6.58  | 0.25 | 0.52  | 0.050 | 0.011 | 0.008 |
| Pput_5199 | 148550399 | orotate phosphoribosyltransferase                                                    | 2.07  | 0    | 1.68  | 0.016 | 0.000 | 0.027 |
| Pput_5200 | 148550400 | exodeoxyribonuclease III Xth                                                         | 0.61  | 0.43 | 0.7   | 0.005 | 0.019 | 0.011 |
| Pput_5201 | 148550401 | hypothetical protein Pput_5201                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5202 | 148550402 | ribonuclease PH                                                                      | 0.66  | 0    | 0     | 0.005 | 0.000 | 0.000 |
| Pput_5203 | 148550403 | hypothetical protein Pput_5203                                                       | 1.98  | 1.44 | 4.59  | 0.015 | 0.063 | 0.073 |
| Pput_5204 | 148550404 | guanylate kinase                                                                     | 0.52  | 0.36 | 1.1   | 0.004 | 0.016 | 0.018 |
| Pput_5206 | 148550406 | amino acid permease-associated region                                                | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5207 | 148550407 | peptidase C26                                                                        | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5208 | 148550408 | glutamate--putrescine ligase                                                         | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5209 | 148550409 | LysR family transcriptional regulator                                                | 0.2   | 0    | 0.5   | 0.002 | 0.000 | 0.008 |
| Pput_5210 | 148550410 | DNA-directed RNA polymerase subunit omega                                            | 1.41  | 0    | 1.82  | 0.011 | 0.000 | 0.029 |
| Pput_5211 | 148550411 | (p)ppGpp synthetase I, SpoT/RelA                                                     | 1.39  | 0.2  | 0.53  | 0.011 | 0.009 | 0.008 |
| Pput_5212 | 148550412 | putative endoribonuclease L-PSP                                                      | 19.42 | 0    | 1.15  | 0.147 | 0.000 | 0.018 |
| Pput_5213 | 148550413 | hypothetical protein Pput_5213                                                       | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5214 | 148550414 | NAD-dependent epimerase/dehydratase                                                  | 0     | 0    | 0.5   | 0.000 | 0.000 | 0.008 |
| Pput_5215 | 148550415 | TonB-system energizer ExbB type-1                                                    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5216 | 148550416 | biopolymer transport protein ExbD                                                    | 0     | 0    | 0     | 0.000 | 0.000 | 0.000 |

|           |           |                                                                      |       |       |       |       |       |       |
|-----------|-----------|----------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|
| Pput_5217 | 148550417 | TonB family protein                                                  | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5218 | 148550418 | LysR family transcriptional regulator                                | 1.57  | 0.37  | 1.44  | 0.012 | 0.016 | 0.023 |
| Pput_5219 | 148550419 | ATP-dependent DNA helicase RecG                                      | 0.15  | 0     | 0.15  | 0.001 | 0.000 | 0.002 |
| Pput_5220 | 148550420 | putative signal transduction protein                                 | 0.32  | 0.15  | 0.32  | 0.002 | 0.007 | 0.005 |
| Pput_5221 | 148550421 | hypothetical protein Pput_5221                                       | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5222 | 148550422 | histone family protein DNA-binding protein                           | 42.21 | 11.82 | 10.17 | 0.320 | 0.518 | 0.163 |
| Pput_5223 | 148550423 | FAD-dependent pyridine nucleotide-disulphide oxidoreductase          | 0.28  | 0     | 0     | 0.002 | 0.000 | 0.000 |
| Pput_5224 | 148550424 | rubredoxin-type Fe(Cys)4 protein                                     | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5225 | 148550425 | chorismate lyase                                                     | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5226 | 148550426 | 4-hydroxybenzoate octaprenyltransferase                              | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5227 | 148550427 | hypothetical protein Pput_5227                                       | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5228 | 148550428 | two component transcriptional regulator                              | 0     | 0     | 0.32  | 0.000 | 0.000 | 0.005 |
| Pput_5229 | 148550429 | PAS/PAC sensor signal transduction histidine kinase                  | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5230 | 148550430 | hypothetical protein Pput_5230                                       | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5231 | 148550431 | peptidase M23B                                                       | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5232 | 148550432 | response regulator receiver protein                                  | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5233 | 148550433 | phosphate uptake regulator, PhoU                                     | 2.12  | 0.28  | 1.94  | 0.016 | 0.012 | 0.031 |
| Pput_5234 | 148550434 | phosphate ABC transporter, ATPase subunit                            | 1.22  | 0.26  | 0.38  | 0.009 | 0.011 | 0.006 |
| Pput_5235 | 148550435 | phosphate ABC transporter, inner membrane subunit PstA               | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5236 | 148550436 | binding-protein-dependent transport systems inner membrane component | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5237 | 148550437 | phosphate binding protein                                            | 2.7   | 0     | 0     | 0.020 | 0.000 | 0.000 |
| Pput_5238 | 148550438 | major facilitator transporter                                        | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5239 | 148550439 | thioesterase superfamily protein                                     | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5240 | 148550440 | aldose 1-epimerase                                                   | 1.35  | 0     | 0.97  | 0.010 | 0.000 | 0.016 |
| Pput_5241 | 148550441 | hypothetical protein Pput_5241                                       | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5242 | 148550442 | transglycosylase-associated protein                                  | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5243 | 148550443 | phosphoribosylaminoimidazole carboxylase ATPase subunit              | 0.64  | 0.2   | 1.32  | 0.005 | 0.009 | 0.021 |
| Pput_5244 | 148550444 | phosphoribosylaminoimidazole carboxylase, catalytic subunit          | 5.98  | 0     | 0.74  | 0.045 | 0.000 | 0.012 |
| Pput_5245 | 148550445 | hypothetical protein Pput_5245                                       | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5246 | 148550446 | LysR family transcriptional regulator                                | 0.63  | 0     | 0     | 0.005 | 0.000 | 0.000 |
| Pput_5247 | 148550447 | aspartate ammonia-lyase                                              | 0.94  | 0     | 0     | 0.007 | 0.000 | 0.000 |
| Pput_5248 | 148550448 | helix-turn-helix domain-containing protein                           | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5249 | 148550449 | histone deacetylase superfamily protein                              | 0     | 0     | 0.31  | 0.000 | 0.000 | 0.005 |
| Pput_5250 | 148550450 | extracellular solute-binding protein                                 | 0.42  | 0     | 0.61  | 0.003 | 0.000 | 0.010 |
| Pput_5251 | 148550451 | GntR family transcriptional regulator                                | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5252 | 148550452 | FMN-binding negative transcriptional regulator                       | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5253 | 148550453 | GCN5-related N-acetyltransferase                                     | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5254 | 148550454 | GCN5-related N-acetyltransferase                                     | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5255 | 148550455 | pyruvate carboxylase subunit B                                       | 8.77  | 0.47  | 2.8   | 0.066 | 0.021 | 0.045 |
| Pput_5256 | 148550456 | acetyl-CoA carboxylase subunit A                                     | 3.04  | 0.99  | 2.08  | 0.023 | 0.043 | 0.033 |
| Pput_5257 | 148550457 | LysR family transcriptional regulator                                | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5258 | 148550458 | RpiR family transcriptional regulator                                | 0.38  | 0     | 0.52  | 0.003 | 0.000 | 0.008 |
| Pput_5259 | 148550459 | glucose-6-phosphate 1-dehydrogenase                                  | 0.44  | 0     | 0.22  | 0.003 | 0.000 | 0.004 |
| Pput_5260 | 148550460 | DNA-dependent helicase II                                            | 0     | 0.14  | 0.56  | 0.000 | 0.006 | 0.009 |
| Pput_5261 | 148550461 | import inner membrane translocase, subunit Tim44                     | 0.25  | 0.4   | 0.37  | 0.002 | 0.018 | 0.006 |
| Pput_5262 | 148550462 | hypothetical protein Pput_5262                                       | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5263 | 148550463 | sodium/hydrogen exchanger                                            | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5264 | 148550464 | thioesterase superfamily protein                                     | 1.83  | 0     | 0     | 0.014 | 0.000 | 0.000 |
| Pput_5265 | 148550465 | pyridoxamine kinase                                                  | 0     | 0     | 0.24  | 0.000 | 0.000 | 0.004 |
| Pput_5266 | 148550466 | hypothetical protein Pput_5266                                       | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5267 | 148550467 | cobalamin synthesis protein, P47K                                    | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5268 | 148550468 | hypothetical protein Pput_5268                                       | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5269 | 148550469 | cobalamin synthesis protein, P47K                                    | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5270 | 148550470 | hypothetical protein Pput_5270                                       | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5271 | 148550471 | hypothetical protein Pput_5271                                       | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5272 | 148550472 | cardiolipin synthetase                                               | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5273 | 148550473 | cyclopropane-fatty-acyl-phospholipid synthase                        | 0.7   | 0     | 0.32  | 0.005 | 0.000 | 0.005 |
| Pput_5274 | 148550474 | dihydroliipoamide dehydrogenase                                      | 0.24  | 0.4   | 0.24  | 0.002 | 0.018 | 0.004 |
| Pput_5275 | 148550475 | transketolase, central region                                        | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5276 | 148550476 | transketolase domain-containing protein                              | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5277 | 148550477 | major facilitator transporter                                        | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5278 | 148550478 | short-chain dehydrogenase/reductase SDR                              | 0.32  | 0.32  | 1.03  | 0.002 | 0.014 | 0.016 |
| Pput_5279 | 148550479 | LysR family transcriptional regulator                                | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5280 | 148550480 | methyltransferase type 12                                            | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5281 | 148550481 | outer membrane porin                                                 | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5282 | 148550482 | dihydrodipicolinate synthetase                                       | 0.35  | 0     | 0     | 0.003 | 0.000 | 0.000 |
| Pput_5283 | 148550483 | major facilitator transporter                                        | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5284 | 148550484 | hypothetical protein Pput_5284                                       | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5285 | 148550485 | hypothetical protein Pput_5285                                       | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5286 | 148550486 | two component transcriptional regulator                              | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5287 | 148550487 | histidine kinase                                                     | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5288 | 148550488 | regulatory protein, IclR                                             | 0.74  | 0     | 0     | 0.006 | 0.000 | 0.000 |
| Pput_5289 | 148550489 | 3-oxoacid CoA-transferase, A subunit                                 | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5290 | 148550490 | 3-oxoacid CoA-transferase, B subunit                                 | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5291 | 148550491 | glucosamine--fructose-6-phosphate aminotransferase                   | 0.24  | 0.11  | 0.17  | 0.002 | 0.005 | 0.003 |
| Pput_5292 | 148550492 | DeoR family transcriptional regulator                                | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5293 | 148550493 | UDP-N-acetylglucosamine pyrophosphorylase                            | 0.25  | 0.16  | 0.4   | 0.002 | 0.007 | 0.006 |
| Pput_5294 | 148550494 | F0F1 ATP synthase subunit epsilon                                    | 4.99  | 1.03  | 1.22  | 0.038 | 0.045 | 0.020 |
| Pput_5295 | 148550495 | F0F1 ATP synthase subunit beta                                       | 33.93 | 2.99  | 10.1  | 0.257 | 0.131 | 0.161 |
| Pput_5296 | 148550496 | F0F1 ATP synthase subunit gamma                                      | 6.05  | 0.97  | 8.95  | 0.046 | 0.042 | 0.143 |
| Pput_5297 | 148550497 | F0F1 ATP synthase subunit alpha                                      | 24.21 | 2.91  | 16.11 | 0.183 | 0.127 | 0.258 |
| Pput_5298 | 148550498 | F0F1 ATP synthase subunit delta                                      | 1.92  | 0.73  | 1.17  | 0.015 | 0.032 | 0.019 |
| Pput_5299 | 148550499 | F0F1 ATP synthase subunit B                                          | 39.83 | 6.81  | 30.96 | 0.302 | 0.298 | 0.495 |
| Pput_5300 | 148550500 | F0F1 ATP synthase subunit C                                          | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5301 | 148550501 | F0F1 ATP synthase subunit A                                          | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5302 | 148550502 | F0F1 ATP synthase subunit I                                          | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5303 | 148550503 | parB-like partition protein                                          | 0.94  | 0.94  | 1.28  | 0.007 | 0.041 | 0.020 |
| Pput_5304 | 148550504 | cobyrinic acid a,c-diamide synthase                                  | 0     | 0     | 0     | 0.000 | 0.000 | 0.000 |
| Pput_5305 | 148550505 | 16S rRNA methyltransferase GidB                                      | 0.34  | 0     | 0.55  | 0.003 | 0.000 | 0.009 |

|           |                                                                            |      |      |      |       |       |       |
|-----------|----------------------------------------------------------------------------|------|------|------|-------|-------|-------|
| Pput_5306 | 148550506 tRNA uridine 5-carboxymethylaminomethyl modification enzyme GidA | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5307 | 148550507 hypothetical protein Pput_5307                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5308 | 148550508 tRNA modification GTPase TrmE                                    | 0.32 | 0.34 | 1.01 | 0.002 | 0.015 | 0.016 |
| Pput_5309 | 148550509 putative inner membrane protein translocase component YidC       | 1.18 | 0.19 | 0.93 | 0.009 | 0.008 | 0.015 |
| Pput_5310 | 148550510 hypothetical protein Pput_5310                                   | 0    | 0    | 0    | 0.000 | 0.000 | 0.000 |
| Pput_5311 | 148550511 ribonuclease P                                                   | 0.78 | 0    | 0    | 0.006 | 0.000 | 0.000 |

