HOKKAIDO UNIVERSITY

Title	A Codon-Optimized Bacterial Antibiotic Gene Used as Selection Marker for Stable Nuclear Transformation in the Marine Red Alga Pyropia yezoensis
Author(s)	Uji, Toshiki; Hirata, Ryo; Fukuda, Satoru et al.
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   1  ATGACACAAGAATCCCTGTTACTTCTCGACCGTATTGATTCGGATGATTCCTACGCGAGCCTGCGGAACGACCAGGAATTCTGGGAGCCGCTGGCCCGCC  100
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       M  T  Q  E  S  L  L  L  L  D  R  I  D  S  D  D  S  Y  A  S  L  R  N  D  Q  E  F  W  E  P  L  A  R

 101  GAGCCCTGGAGGAGCTCGGGCTGCCGGTGCCGCCGGTGCTGCGGGTGCCCGGCGAGAGCACCAACCCCGTACTGGTCGGCGAGCCCGGCCCGGTGATCAA  200
 101  GCGCCCTGGAGGAGCTCGGGCTGCCGGTGCCGCCGGTGCTGCGGGTGCCCGGCGAGAGCACCAACCCCGTGCTGGTCGGCGAGCCCGGCCCGGTGATCAA  200
       R  A  L  E  E  L  G  L  P  V  P  P  V  L  R  V  P  G  E  S  T  N  P  V  L  V  G  E  P  G  P  V  I  K

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         L  F  G  E  H  W  C  G  P  E  S  L  A  S  E  S  E  A  Y  A  V  L  A  D  A  P  V  P  V  P  R  L  L

 301  GGCCGCGGCGAGCTGCGGCCCGGCACCGGAGCCTGGCCGTGGCCCTACCTGGTGATGAGCCGGATGACCGGCACCACCTGGCGGTCCGCGATGGACGGCA  400
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       G  R  G  E  L  R  P  G  T  G  A  W  P  W  P  Y  L  V  M  S  R  M  T  G  T  T  W  R  S  A  M  D  G

 401  CGACCGACCGGAACGCGCTGCTCGCCCTGGCCCGCGAACTCGGCCGGGTGCTCGGCCGGCTGCACAGGGTGCCGCTGACCGGGAACACCGTGCTCACCCC  500
 401  CGACCGACCGGAACGCGCTGCTCGCCCTGGCCCGCGAGCTCGGCCGGGTGCTCGGCCGGCTGCACCGGGTGCCGCTGACCGGGAACACCGTGCTCACCCC  500
       T  T  D  R  N  A  L  L  A  L  A  R  E  L  G  R  V  L  G  R  L  H  R  V  P  L  T  G  N  T  V  L  T  P

 501  CCATTCCGAGGTCTTCCCGGAACTGCTGCGGGAACGCCGCGCGGCGACCGTCGAGGACCACCGCGGGTGGGGCTACCTCTCGCCCCGGCTGCTGGACCGC  600
 501  CCACTCCGAGGTCTTCCCGGAGCTGCTGCGGGAGCGCCGCGCGGCGACCGTCGAGGACCACCGCGGGTGGGGCTACCTCTCGCCCCGGCTGCTGGACCGC  600
         H  S  E  V  F  P  E  L  L  R  E  R  R  A  A  T  V  E  D  H  R  G  W  G  Y  L  S  P  R  L  L  D  R

 601  CTGGAGGACTGGCTGCCGGACGTGGACACGCTGCTGGCCGGCCGCGAACCCCGGTTCGTCCACGGCGACCTGCACGGGACCAACATCTTCGTGGACCTGG  700
 601  CTGGAGGACTGGCTGCCGGACGTGGACACGCTGCTGGCCGGCCGCGAGCCCCGGTTCGTCCACGGCGACCTGCACGGGACCAACATCTTCGTGGACCTGG  700
       L  E  D  W  L  P  D  V  D  T  L  L  A  G  R  E  P  R  F  V  H  G  D  L  H  G  T  N  I  F  V  D  L

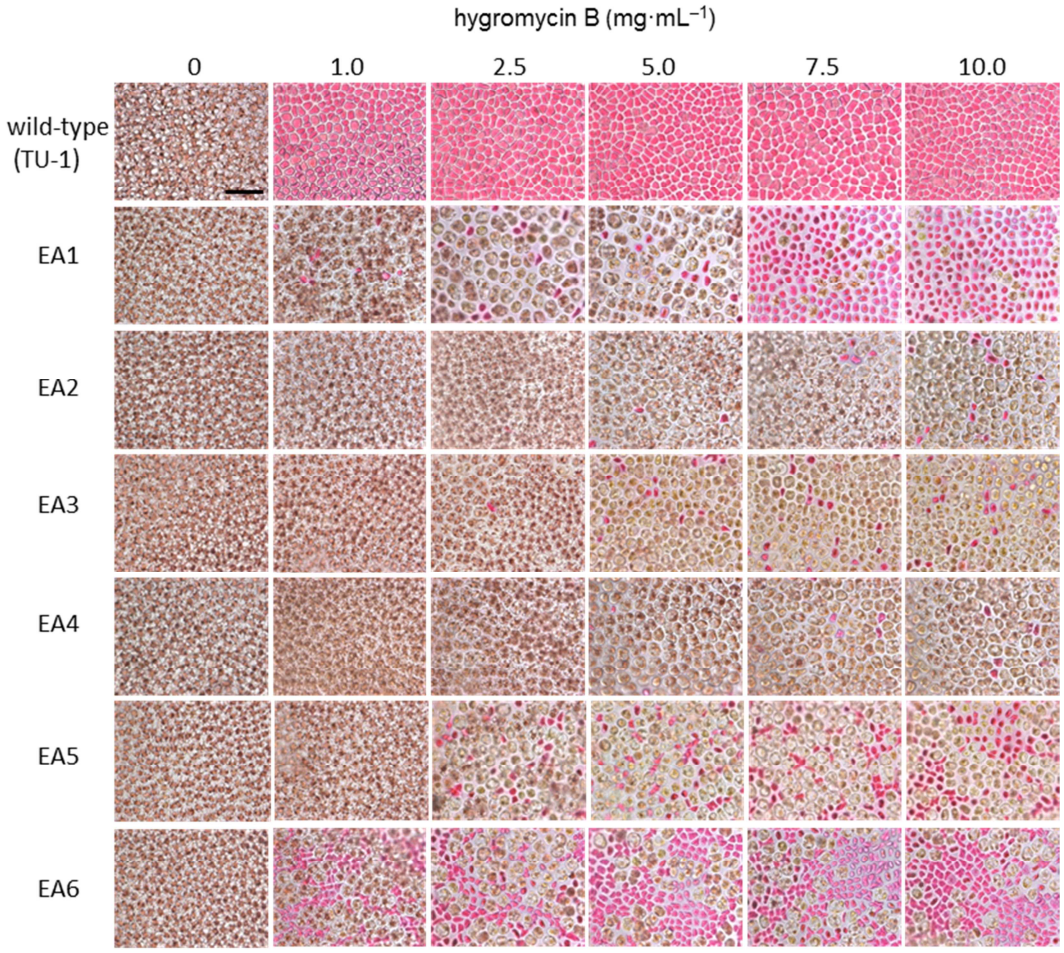
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 701  CCGCGACCGAGGTCACCGGGATCGTCGACTTCACCGACGTCTACGCGGGCGACTCCCGCTACAGCCTGGTGCAGCTGCACCTCAACGCCTTCCGGGGCGA  800
       A  A  T  E  V  T  G  I  V  D  F  T  D  V  Y  A  G  D  S  R  Y  S  L  V  Q  L  H  L  N  A  F  R  G  D

 801  CCGCGAGATCCTGGCCGCGCTGCTCGACGGGGCGCAGTGGAAGCGGACCGAGGACTTCGCCCGCGAACTGCTCGCCTTCACCTTCCTGCACGACTTCGAG  900
 801  CCGCGAGATCCTGGCCGCGCTGCTCGACGGGGCGCAGTGGAAGCGGACCGAGGACTTCGCCCGCGAGCTGCTCGCCTTCACCTTCCTGCACGACTTCGAG  900
         R  E  I  L  A  A  L  L  D  G  A  Q  W  K  R  T  E  D  F  A  R  E  L  L  A  F  T  F  L  H  D  F  E

 901  GTGTTCGAGGAGACCCCGCTGGATCTCTCCGGCTTCACCGATCCGGAGGAACTGGCGCAGTTCCTCTGGGGGCCGCCGGACACCGCCCCCGGCGCCTGAT 1000
 901  GTGTTCGAGGAGACCCCGCTGGACCTCTCCGGCTTCACCGACCCGGAGGAGCTGGCGCAGTTCCTCTGGGGGCCGCCGGACACCGCCCCCGGCGCCTGAT 1000
       V  F  E  E  T  P  L  D  L  S  G  F  T  D  P  E  E  L  A  Q  F  L  W  G  P  P  D  T  A  P  G  A  *

1001  AA  1002
1001  AA  1002
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Supplemental Fig. 1



Supplemental Fig. 2