Figure S1, Fu et al.

```
DNA:   atgagcaagggcgaggagctgttcaccggggtggtgcccatcctggtcgagctggacggc 60
A.A.:  ·M··S··K··G··E··E··L··F··T··G··V··V··P··I··L··V··E··L··D··G· 20
                                                                 ↓
                                                                 D

DNA:   gacgtaaacggccacaagttcagcgtgtccggcgagggcgagggcgatgccacctacggc 120
A.A.:  ·D··V··N··G··H··K··F··S··V··S··G··E··G··E··G··D··A··T··Y··G· 40
                                     ↓     ↓     ↓              ↓
                                     D     D     S              D

DNA:   aagctgaccctgaagttcatctgcaccaccggcaagctgcccgtgccctggcccaccctc 180
A.A.:  ·K··L··T··L··K··F··I··C··T··T··G··K··L··P··V··P··W··P··T··L· 60
                                                  ↓  ↙↘
                                                  L  *  *

DNA:   gtgaccaccctgacctacggcgtgcagtgcttcagccgctaccccgaccacatgaagcag 240
A.A.:  ·V··T··T··L··T··Y··G··V··Q··C··F··S··R··Y··P··D··H··M··K··Q· 80
          ↓        ↓     ↙↘     ↓  ↓
          I        I     S  D   *  Y

DNA:   cacgacttcttcaagtccgccatgcccgaaggctacgtccaggagcgcaccatcttcttc 300
A.A.:  ·H··D··F··F··K··S··A··M··P··E··G··Y··V··Q··E··R··T··I··F··F· 100
                                     ↙↘        ↓     ↙↘
                                     S  D      *     C  H

DNA:   aaggacgacggcaactacaagacccgcgccgaggtgaagttcgagggcgacaccctggtg 360
A.A.:  ·K··D··D··G··N··Y··K··T··R··A··E··V··K··F··E··G··D··T··L··V· 120
                                  ↓     ↓
                                  V     M

DNA:   aaccgcatcgagctgaagggcatcgacttcaaggaggacggcaacatcctggggcacaag 420
A.A.:  ·N··R··I··E··L··K··G··I··D··F··K··E··D··G··N··I··L··G··H··K· 140
                          ↓
                          D

DNA:   ctggagtacaactacaacagccacaacgtctatatcatggccgacaagcagaagaacggc 480
A.A.:  ·L··E··Y··N··Y··N··S··H··N··V··Y··I··M··A··D··K··Q··K··N··G· 160
                                                       ↓
                                                       *

DNA:   atcaaggtgaacttcaagatccgccacaacatcgaggacggcagcgtgcagctcgccgac 540
A.A.:  ·I··K··V··N··F··K··I··R··H··N··I··E··D··G··S··V··Q··L··A··D· 180
                                                       ↓
                                                       *

DNA:   cactaccagcagaacacccccatcggcgacggccccgtgctgctgcccgacaaccactac 600
A.A.:  ·H··Y··Q··Q··N··T··P··I··G··D··G··P··V··L··L··P··D··N··H··Y· 200
            ↓  ↓
            *  *

DNA:   ctgagcacccagtccgccctgagcaaagaccccaacgagaagcgcgatcacatggtcctg 660
A.A.:  ·L··S··T··Q··S··A··L··S··K··D··P··N··E··K··R··D··H··M··V··L· 220
                    ↓
                    F

DNA:   ctggagttcgtgaccgccgccgggatcactctcggcatggacgagctgtacaagtaa 717
A.A.:  ·L··E··F··V··T··A··A··G··I··T··L··G··M··D··E··L··Y··K··*· 238
          ↓
          K
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Figure S1*: GFP* DNA and amino acid sequences showing mutations retrieved in this study (yellow highlights) and resulting amino acid changes (black arrowheads). The 23 most highly conserved amino acids in GFP-like proteins are indicated in red letters (Ong *et al*. 2011). Two glutamine residues that were not mutated in our screens (Q80 and Q204) are shown in blue.

Ong, W.J., S. Alvarez, I.E. Leroux, R.S. Shahid, A.A. Samma, P. Peshkepija, A.L. Morgan, S. Mulcahy and M. Zimmer, 2011 Function and structure of GFP-like proteins in the protein data bank. Mol. Biosyst. 7: 984-992.