

Supplementary Table S1. Surface exposed amino acid monitored by Beta factor as shown in green in color.

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|-----|---|------|---------|---------|---------|-------|------|
| GLN | A | 965 | 206.9 | 223.59 | 213.8 | 15.84 | 2.49 |
| GLN | A | 913 | 212.628 | 221.002 | 147.701 | 16.99 | 2.24 |
| PRO | A | 1090 | 200.141 | 208.24 | 145.755 | 14.49 | 2.16 |
| SER | A | 1123 | 198.928 | 198.067 | 142.895 | 16.54 | 2.01 |
| ILE | A | 788 | 230.951 | 227.055 | 171.865 | 7.92 | 1.35 |
| ASN | A | 914 | 205.452 | 225.325 | 145.675 | 17.09 | 1.33 |
| ALA | A | 701 | 183.307 | 222.065 | 171.734 | 15.76 | 1.29 |
| GLU | A | 702 | 176.789 | 218.647 | 170.545 | 16.22 | 1.29 |
| SER | A | 758 | 223.878 | 207.111 | 211.394 | 16.99 | 1.29 |
| TYR | A | 904 | 219.875 | 222.057 | 152.877 | 17.33 | 1.29 |
| ASN | A | 703 | 184.728 | 222.351 | 165.388 | 18.09 | 1.27 |
| ASP | A | 796 | 220.654 | 236.008 | 156.463 | 15.26 | 1.24 |
| TYR | A | 707 | 184.367 | 207.847 | 156.949 | 17.6 | 1.21 |
| SER | A | 758 | 224.478 | 208.452 | 213.933 | 8.18 | 1.16 |
| PHE | A | 43 | 209.724 | 243.035 | 221.619 | 8.9 | 1.15 |
| LYS | A | 790 | 233.473 | 235.937 | 168.221 | 18.91 | 1.15 |
| VAL | A | 1094 | 195.011 | 213.091 | 149.982 | 23.06 | 1.14 |
| TYR | A | 200 | 202.35 | 237.532 | 240.866 | 17.7 | 1.09 |
| GLN | A | 1002 | 207.824 | 213.128 | 214.699 | 18.71 | 1.09 |
| SER | A | 383 | 193.393 | 208.265 | 239.378 | 8.33 | 1.08 |
| ARG | A | 983 | 217.832 | 226.012 | 236.813 | 16.28 | 1.05 |
| PHE | A | 565 | 181.124 | 195.504 | 223.28 | 16.13 | 1.02 |
| ASP | A | 568 | 183.682 | 202.019 | 213.585 | 17.08 | 1.01 |
| GLY | A | 669 | 182.615 | 218.177 | 189.272 | 9.1 | 0.95 |
| LYS | A | 854 | 217.015 | 238.134 | 211.144 | 19.69 | 0.95 |
| GLN | A | 895 | 230.077 | 227.463 | 155.12 | 18.66 | 0.95 |
| GLN | A | 1005 | 213.652 | 211.602 | 212.126 | 16.59 | 0.93 |
| ASN | A | 370 | 189.208 | 213.361 | 254.718 | 15.55 | 0.91 |
| LEU | A | 864 | 228.978 | 227.668 | 188.24 | 16.54 | 0.91 |
| ALA | A | 668 | 183.568 | 217.488 | 191.81 | 9.19 | 0.9 |
| PRO | A | 863 | 227.049 | 228.169 | 191.168 | 16.15 | 0.86 |
| ASN | A | 1074 | 184.757 | 221.391 | 154.156 | 17.15 | 0.85 |
| LYS | A | 417 | 214.635 | 190.144 | 255.125 | 19.88 | 0.77 |
| GLN | A | 787 | 232.766 | 223.886 | 167.537 | 16.9 | 0.74 |
| ASP | A | 985 | 220.054 | 222.41 | 236.626 | 9.42 | 0.71 |

| | | | | | | | |
|-----|---|------|---------|---------|---------|-------|------|
| TYR | A | 396 | 187.54 | 191.018 | 242.224 | 14.07 | 0.68 |
| ARG | A | 1107 | 198.158 | 213.26 | 153.142 | 15.64 | 0.61 |
| ARG | A | 1039 | 208.399 | 212.127 | 174.062 | 18.66 | 0.6 |
| LYS | A | 1045 | 195.992 | 224.017 | 167.593 | 20.13 | 0.59 |
| GLN | A | 755 | 222.399 | 207.917 | 220.57 | 17.11 | 0.57 |
| PHE | A | 970 | 207.884 | 221.24 | 222.3 | 9.12 | 0.57 |
| GLU | A | 1031 | 214.171 | 212.613 | 172.972 | 16.07 | 0.57 |
| SER | A | 383 | 194.611 | 210.848 | 239 | 18.24 | 0.55 |
| ARG | A | 355 | 191.634 | 190.221 | 243.271 | 19.35 | 0.51 |
| ASN | A | 978 | 221.932 | 230.788 | 224.544 | 19.24 | 0.51 |
| GLU | A | 918 | 205.767 | 228.049 | 144.273 | 17.25 | 0.49 |
| TYR | A | 904 | 218.739 | 221.882 | 153.58 | 6.26 | 0.44 |
| TYR | A | 789 | 229.086 | 226.952 | 166.796 | 14.4 | 0.39 |
| ASN | A | 703 | 181.576 | 220.857 | 168.722 | 9.68 | 0.38 |
| ILE | A | 788 | 231.022 | 229.541 | 170.188 | 17.4 | 0.37 |
| THR | A | 547 | 183.854 | 208.339 | 225.799 | 17.16 | 0.36 |
| ILE | A | 896 | 222.096 | 228.806 | 156.893 | 15 | 0.36 |
| GLU | A | 1031 | 212.794 | 213.04 | 171.427 | 16.07 | 0.36 |
| ALA | A | 713 | 188.818 | 218.013 | 153.902 | 9.3 | 0.33 |
| ARG | A | 1039 | 208.63 | 212.25 | 171.784 | 9.42 | 0.33 |
| ALA | A | 890 | 227.156 | 214.702 | 165.465 | 17.04 | 0.31 |
| PRO | A | 1079 | 190.443 | 205.84 | 147.467 | 16.19 | 0.23 |
| PHE | A | 1121 | 200.522 | 203.821 | 144.984 | 14.32 | 0.23 |
| TYR | A | 707 | 184.817 | 210.012 | 157.821 | 14.63 | 0.22 |
| THR | A | 912 | 207.254 | 220.873 | 147.544 | 22.87 | 0.22 |
| TYR | A | 917 | 213.965 | 228.82 | 149.982 | 15.02 | 0.22 |
| VAL | A | 1040 | 200.536 | 215.385 | 168.426 | 24.07 | 0.22 |
| GLN | A | 1010 | 207.126 | 215.402 | 203.308 | 19.38 | 0.2 |
| ASN | A | 370 | 187.809 | 214.449 | 250.423 | 17.51 | 0.19 |
| GLN | A | 895 | 225.645 | 225.719 | 155.771 | 16.64 | 0.19 |
| PHE | A | 898 | 219.434 | 230.733 | 156.175 | 10.2 | 0.19 |
| SER | A | 1030 | 217.429 | 217.459 | 170.006 | 17.42 | 0.19 |
| TYR | A | 421 | 214.435 | 187.518 | 250.273 | 18.44 | 0.17 |
| ASN | A | 703 | 182.792 | 219.007 | 166.551 | 15.98 | 0.17 |
| ALA | A | 27 | 171.646 | 251.874 | 224.877 | 19.82 | 0 |