

**Figure S1. Correlation between number of interface and surface residues.**



**Figure S2. Distribution of the number of contiguous patches of predicted interfacial residues.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PDB ID | Query Protein Name  [Chain ID in PDB] | Name of Binding protein 1 [Chain ID in PDB]  **Table S1. PredUs2.0 performance for 25 proteins in the HET-TRI set.** | Name of Binding Protein 2 [Chain ID in PDB] | Number of continuous patches in prediction | Predicted interface size | Interface 1 | | | Interface 2 | | | Combined Interfaces | |
| Real interface size | Precision | Recall | Real interface size | precision | Recall | Precision | Recall |
| 4bj6 | RAP1 [C] | RAP1-interacting factor 2 [B] | RAP1-interacting factor 2 [D] | 3 | 27 | 24 | 0.15 | 0.17 | 25 | 0.22 | 0.24 | 0.37 | 0.20 |
| 3stb | RNA-editing complex protein MP42 [C] | single domain antibody VHH [B] | MP18 RNA editing complex protein [D] | 3 | 25 | 25 | 0.32 | 0.32 | 50 | 0.72 | 0.36 | 0.92 | 0.34 |
| 4wjg | Haptoglobin [C] | Hemoglobin subunit alpha [A] | Haptoglobin-hemoglobin receptor [E] | 3 | 32 | 29 | 0.31 | 0.34 | 25 | 0.00 | 0.00 | 0.31 | 0.19 |
| 1pyt | PROCARBOXYPEPTIDASE A [A] | PROCARBOXYPEPTIDASE A [B] | PROPROTEINASE E [C] | 2 | 24 | 35 | 0.75 | 0.51 | 32 | 0.29 | 0.22 | 0.92 | 0.35 |
| 3u28 | H/ACA ribonucleoprotein complex subunit 4 [A] | H/ACA ribonucleoprotein complex subunit 3 [B] | H/ACA ribonucleoprotein complex subunit 1 [C] | 2 | 33 | 41 | 0.27 | 0.22 | 27 | 0.33 | 0.41 | 0.61 | 0.29 |
| 4i6m | Actin-like protein ARP9 [B] | Actin-like protein ARP9 [C] | Regulator of Ty1 transposition protein 102 [D] | 4 | 35 | 34 | 0.23 | 0.24 | 55 | 0.11 | 0.07 | 0.34 | 0.13 |
| 2vpx | NRFC protein [F] | Thiosulfate reductase [E] | Hypothetical membrane spanning protein [G] | 2 | 29 | 52 | 0.69 | 0.38 | 61 | 0.31 | 0.15 | 0.83 | 0.24 |
| 3din | Preprotein translocase subunit SecY [F] | Preprotein translocase subunit secE [G] | Preprotein translocase subunit SecG [H] | 5 | 37 | 54 | 0.05 | 0.04 | 42 | 0.00 | 0.00 | 0.05 | 0.02 |
| 4dbl | Vitamin B12 import system permease protein BtuC [B] | Vitamin B12 import ATP-binding protein BtuD [D] | Vitamin B12-binding protein [E] | 2 | 33 | 30 | 0.15 | 0.17 | 38 | 0.30 | 0.26 | 0.45 | 0.22 |
| 3mhs | Ubiquitin carboxyl-terminal hydrolase 8 [A] | Protein SUS1 [B] | Ubiquitin [D] | 5 | 37 | 39 | 0.03 | 0.03 | 69 | 0.24 | 0.13 | 0.27 | 0.09 |
| 3pbp | Nucleoporin NUP82 [D] | Nucleoporin NUP116/NSP116 [E] | Nucleoporin NUP159 [F] | 3 | 36 | 35 | 0.39 | 0.40 | 40 | 0.11 | 0.10 | 0.50 | 0.25 |
| 4xt1 | G-protein coupled receptor homolog US28 [A] | Fractalkine [B] | nanobody 7 [C] | 4 | 33 | 45 | 0.15 | 0.11 | 37 | 0.12 | 0.11 | 0.27 | 0.11 |
| 4hr6 | Lectin (beta) [B] | Lectin (alpha) [A] | Lectin (SGSL) [C] | 1 | 29 | 68 | 0.59 | 0.25 | 49 | 0.86 | 0.51 | 1.00 | 0.30 |
| 3cxh | Cytochrome c1, heme protein, mitochondrial [D] | Cytochrome b [C] | Cytochrome b-c1 complex subunit 6 [F] | 1 | 32 | 50 | 0.44 | 0.28 | 43 | 0.09 | 0.07 | 0.53 | 0.18 |
| 4i5l | Serine/threonine-protein phosphatase 2A regulatory subunit A alpha isoform [D] | Serine/threonine-protein phosphatase 2A regulatory subunit B'' subunit beta [E] | Serine/threonine-protein phosphatase 2A catalytic subunit alpha isoform [F] | 3 | 39 | 54 | 0.28 | 0.20 | 34 | 0.38 | 0.44 | 0.67 | 0.30 |
| 3cfi | Pseudopilin EpsJ [E] | Pseudopilin EpsI [D] | Nanobody NBEPSIJ\_11 [F] | 5 | 27 | 23 | 0.26 | 0.30 | 27 | 0.19 | 0.19 | 0.44 | 0.24 |
| 3se4 | Interferon omega-1 [B] | nterferon alpha/beta receptor 1 [A] | Interferon alpha/beta receptor 2 [C] | 2 | 27 | 27 | 0.04 | 0.04 | 27 | 0.56 | 0.56 | 0.59 | 0.30 |
| 4tma | DNA gyrase subunit B [F] | DNA gyrase subunit A [G] | DNA gyrase inhibitor YacG [J] | 2 | 35 | 47 | 0.20 | 0.15 | 40 | 0.51 | 0.45 | 0.71 | 0.29 |
| 4u1e | Eukaryotic translation initiation factor 3 subunit [I] | Eukaryotic translation initiation factor 3 subunit [B] | Eukaryotic translation initiation factor 3 subunit [G] | 1 | 32 | 36 | 0.13 | 0.11 | 58 | 0.59 | 0.33 | 0.69 | 0.24 |
| 1t0j | voltage-gated calcium channel subunit beta2a [B] | voltage-gated calcium channel subunit beta2a [A] | Voltage-dependent L-type calcium channel alpha-1C subunit [C] | 4 | 28 | 34 | 0.29 | 0.24 | 29 | 0.21 | 0.21 | 0.50 | 0.22 |
| 3v79 | Recombining binding protein suppressor of hairless [C] | Neurogenic locus notch homolog protein 1 [K] | Mastermind-like protein 1 [M] | 3 | 36 | 39 | 0.42 | 0.38 | 31 | 0.08 | 0.10 | 0.50 | 0.26 |
| 4c92 | U6 SNRNA-ASSOCIATED SM-LIKE PROTEIN LSM4 [D] | SM-LIKE PROTEIN LSM1 [A] | U6 SNRNA-ASSOCIATED SM-LIKE PROTEIN LSM7 [G] | 1 | 23 | 31 | 0.61 | 0.45 | 24 | 0.30 | 0.29 | 0.91 | 0.40 |
| 1ldk | CULLIN HOMOLOG frangment (15-410) [A] | CULLIN HOMOLOG fragment (411-776) [B] | CYCLIN A/CDK2-associate protein P19 [D] | 2 | 34 | 29 | 0.12 | 0.14 | 19 | 0.47 | 0.84 | 0.59 | 0.42 |
| 4oe8 | Interleukin-23 subunit alpha [B] | Interleukin-12 subunit beta [A] | alphabody MB23 [C] | 1 | 28 | 41 | 0.57 | 0.39 | 30 | 0.39 | 0.37 | 0.89 | 0.36 |
| 4ii2 | Ubiquitin-activating enzyme E1 1 [A] | Ubiquitin-60S ribosomal protein L40 [B] | Ubiquitin-conjugating enzyme E2 4 [C] | 2 | 45 | 66 | 0.16 | 0.11 | 57 | 0.22 | 0.18 | 0.38 | 0.14 |
| Average | | | | 2.64 |  |  | 0.30 | 0.24 |  | 0.31 | 0.26 | 0.57 | 0.24 |

**Table S2. Performance of PredUs 2.0 on DB34 using the dynamic cutoff.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BM4 structure | Number of real interface residues | Number of predicted interface residues with dynamic cutoff | Precision | Recall |
| 1A2K\_l\_u.pdb | 19 | 29 | 0.54 | 0.76 |
| 1A2K\_r\_u.pdb | 26 | 30 | 0.30 | 0.26 |
| 1ACB\_l\_u.pdb | 20 | 22 | 0.43 | 0.41 |
| 1ACB\_r\_u.pdb | 11 | 26 | 0.17 | 0.44 |
| 1AK4\_l\_u.pdb | 10 | 24 | 0.40 | 0.98 |
| 1AK4\_r\_u.pdb | 19 | 25 | 0.38 | 0.51 |
| 1AKJ\_l\_u.pdb | 39 | 30 | 0.58 | 0.42 |
| 1AKJ\_r\_u.pdb | 32 | 35 | 0.11 | 0.06 |
| 1ATN\_l\_u.pdb | 25 | 30 | 0.42 | 0.44 |
| 1ATN\_r\_u.pdb | 23 | 32 | 0.18 | 0.25 |
| 1AVX\_l\_u.pdb | 20 | 26 | 0.62 | 0.84 |
| 1AVX\_r\_u.pdb | 30 | 29 | 0.75 | 0.67 |
| 1AY7\_l\_u.pdb | 17 | 23 | 0.53 | 0.69 |
| 1AY7\_r\_u.pdb | 19 | 25 | 0.57 | 0.72 |
| 1AZS\_l\_u.pdb | 25 | 33 | 0.55 | 0.72 |
| 1AZS\_r\_u.pdb | 20 | 32 | 0.03 | 0.04 |
| 1B6C\_l\_u.pdb | 24 | 33 | 0.32 | 0.39 |
| 1B6C\_r\_u.pdb | 25 | 24 | 0.85 | 0.77 |
| 1BKD\_l\_u.pdb | 40 | 27 | 0.71 | 0.46 |
| 1BKD\_r\_u.pdb | 49 | 37 | 0.35 | 0.26 |
| 1BUH\_l\_u.pdb | 20 | 23 | 0.40 | 0.44 |
| 1BUH\_r\_u.pdb | 16 | 32 | 0.08 | 0.10 |
| 1BVN\_l\_u.pdb | 27 | 22 | 0.75 | 0.55 |
| 1BVN\_r\_u.pdb | 39 | 35 | 0.45 | 0.36 |
| 1CGI\_l\_u.pdb | 21 | 21 | 0.78 | 0.74 |
| 1CGI\_r\_u.pdb | 37 | 30 | 0.49 | 0.35 |
| 1CLV\_l\_u.pdb | 23 | 18 | 0.86 | 0.61 |
| 1CLV\_r\_u.pdb | 36 | 35 | 0.13 | 0.09 |
| 1D6R\_l\_u.pdb | 17 | 22 | 0.71 | 0.84 |
| 1D6R\_r\_u.pdb | 29 | 29 | 0.55 | 0.55 |
| 1DE4\_l\_u.pdb | 29 | 46 | 0.03 | 0.02 |
| 1DE4\_r\_u.pdb | 27 | 35 | 0.31 | 0.33 |
| 1DFJ\_l\_u.pdb | 49 | 35 | 0.67 | 0.45 |
| 1DFJ\_r\_u.pdb | 41 | 26 | 0.64 | 0.35 |
| 1E6E\_l\_u.pdb | 29 | 24 | 0.86 | 0.65 |
| 1E6E\_r\_u.pdb | 35 | 36 | 0.50 | 0.45 |
| 1E96\_l\_u.pdb | 18 | 28 | 0.27 | 0.36 |
| 1E96\_r\_u.pdb | 18 | 28 | 0.27 | 0.36 |
| 1EAW\_l\_u.pdb | 22 | 21 | 0.49 | 0.43 |
| 1EAW\_r\_u.pdb | 29 | 30 | 0.80 | 0.83 |
| 1EER\_l\_u.pdb | 47 | 36 | 0.50 | 0.38 |
| 1EER\_r\_u.pdb | 44 | 28 | 0.54 | 0.34 |
| 1EFN\_l\_u.pdb | 16 | 21 | 0.59 | 0.73 |
| 1EFN\_r\_u.pdb | 13 | 24 | 0.25 | 0.46 |
| 1EWY\_l\_u.pdb | 22 | 24 | 0.68 | 0.70 |
| 1EWY\_r\_u.pdb | 23 | 32 | 0.33 | 0.41 |
| 1EZU\_l\_u.pdb | 33 | 33 | 0.33 | 0.27 |
| 1EZU\_r\_u.pdb | 40 | 29 | 0.64 | 0.42 |
| 1F34\_l\_u.pdb | 29 | 26 | 0.68 | 0.55 |
| 1F34\_r\_u.pdb | 49 | 32 | 0.35 | 0.22 |
| 1F51\_l\_u.pdb | 33 | 25 | 0.43 | 0.26 |
| 1F51\_r\_u.pdb | 38 | 34 | 0.26 | 0.17 |
| 1F6M\_l\_u.pdb | 29 | 24 | 0.90 | 0.69 |
| 1F6M\_r\_u.pdb | 29 | 33 | 0.03 | 0.04 |
| 1FAK\_l\_u.pdb | 51 | 29 | 0.71 | 0.35 |
| 1FAK\_r\_u.pdb | 44 | 34 | 0.50 | 0.32 |
| 1FC2\_l\_u.pdb | 20 | 36 | 0.28 | 0.41 |
| 1FC2\_r\_u.pdb | 14 | 21 | 0.41 | 0.53 |
| 1FCC\_l\_u.pdb | 14 | 21 | 0.48 | 0.70 |
| 1FCC\_r\_u.pdb | 19 | 36 | 0.30 | 0.50 |
| 1FFW\_l\_u.pdb | 16 | 22 | 0.46 | 0.61 |
| 1FFW\_r\_u.pdb | 16 | 26 | 0.17 | 0.22 |
| 1FLE\_l\_u.pdb | 21 | 20 | 0.85 | 0.81 |
| 1FLE\_r\_u.pdb | 24 | 29 | 0.70 | 0.82 |
| 1FQ1\_l\_u.pdb | 23 | 32 | 0.45 | 0.59 |
| 1FQ1\_r\_u.pdb | 23 | 27 | 0.26 | 0.30 |
| 1FQJ\_l\_u.pdb | 26 | 26 | 0.64 | 0.58 |
| 1FQJ\_r\_u.pdb | 24 | 28 | 0.54 | 0.63 |
| 1GCQ\_l\_u.pdb | 19 | 22 | 0.47 | 0.50 |
| 1GCQ\_r\_u.pdb | 15 | 30 | 0.17 | 0.33 |
| 1GHQ\_l\_u.pdb | 12 | 27 | 0.01 | 0.01 |
| 1GHQ\_r\_u.pdb | 14 | 31 | 0.00 | 0.00 |
| 1GL1\_l\_u.pdb | 21 | 18 | 0.67 | 0.56 |
| 1GL1\_r\_u.pdb | 28 | 29 | 0.74 | 0.72 |
| 1GLA\_l\_u.pdb | 21 | 26 | 0.59 | 0.69 |
| 1GLA\_r\_u.pdb | 18 | 35 | 0.22 | 0.36 |
| 1GP2\_l\_u.pdb | 39 | 35 | 0.76 | 0.65 |
| 1GP2\_r\_u.pdb | 21 | 33 | 0.48 | 0.68 |
| 1GPW\_l\_u.pdb | 23 | 28 | 0.56 | 0.62 |
| 1GPW\_r\_u.pdb | 39 | 30 | 0.20 | 0.15 |
| 1GRN\_l\_u.pdb | 29 | 28 | 0.35 | 0.27 |
| 1GRN\_r\_u.pdb | 25 | 28 | 0.44 | 0.46 |
| 1GXD\_l\_u.pdb | 27 | 29 | 0.57 | 0.57 |
| 1GXD\_r\_u.pdb | 33 | 40 | 0.20 | 0.18 |
| 1H1V\_l\_u.pdb | 18 | 39 | 0.18 | 0.38 |
| 1H1V\_r\_u.pdb | 31 | 34 | 0.32 | 0.29 |
| 1H9D\_l\_u.pdb | 30 | 26 | 0.28 | 0.21 |
| 1H9D\_r\_u.pdb | 30 | 25 | 0.74 | 0.58 |
| 1HCF\_l\_u.pdb | 28 | 24 | 0.29 | 0.25 |
| 1HCF\_r\_u.pdb | 24 | 30 | 0.27 | 0.33 |
| 1HE1\_l\_u.pdb | 22 | 22 | 0.57 | 0.50 |
| 1HE1\_r\_u.pdb | 27 | 26 | 0.62 | 0.59 |
| 1HE8\_l\_u.pdb | 20 | 27 | 0.56 | 0.75 |
| 1HE8\_r\_u.pdb | 16 | 41 | 0.03 | 0.05 |
| 1HIA\_l\_u.pdb | 18 | 21 | 0.74 | 0.80 |
| 1HIA\_r\_u.pdb | 8 | 22 | 0.23 | 0.62 |
| 1I2M\_l\_u.pdb | 48 | 34 | 0.76 | 0.48 |
| 1I2M\_r\_u.pdb | 32 | 29 | 0.33 | 0.25 |
| 1I4D\_l\_u.pdb | 22 | 28 | 0.52 | 0.60 |
| 1I4D\_r\_u.pdb | 27 | 36 | 0.41 | 0.48 |
| 1IB1\_l\_u.pdb | 29 | 27 | 0.11 | 0.10 |
| 1IB1\_r\_u.pdb | 45 | 37 | 0.46 | 0.32 |
| 1IBR\_l\_u.pdb | 57 | 36 | 0.38 | 0.20 |
| 1IBR\_r\_u.pdb | 43 | 28 | 0.74 | 0.43 |
| 1IJK\_l\_u.pdb | 19 | 28 | 0.30 | 0.40 |
| 1IJK\_r\_u.pdb | 21 | 31 | 0.31 | 0.40 |
| 1IRA\_l\_u.pdb | 44 | 26 | 0.48 | 0.25 |
| 1IRA\_r\_u.pdb | 53 | 34 | 0.48 | 0.28 |
| 1J2J\_l\_u.pdb | 15 | 19 | 0.65 | 0.78 |
| 1J2J\_r\_u.pdb | 18 | 27 | 0.52 | 0.78 |
| 1JIW\_l\_u.pdb | 20 | 24 | 0.10 | 0.07 |
| 1JIW\_r\_u.pdb | 38 | 32 | 0.59 | 0.43 |
| 1JK9\_l\_u.pdb | 32 | 27 | 0.79 | 0.63 |
| 1JK9\_r\_u.pdb | 24 | 30 | 0.44 | 0.53 |
| 1JMO\_l\_u.pdb | 42 | 30 | 0.25 | 0.14 |
| 1JMO\_r\_u.pdb | 29 | 33 | 0.34 | 0.37 |
| 1JTG\_l\_u.pdb | 40 | 28 | 0.84 | 0.54 |
| 1JTG\_r\_u.pdb | 35 | 30 | 0.70 | 0.60 |
| 1JWH\_l\_u.pdb | 27 | 32 | 0.01 | 0.01 |
| 1JWH\_r\_u.pdb | 17 | 34 | 0.30 | 0.58 |
| 1JZD\_l\_u.pdb | 28 | 25 | 0.70 | 0.57 |
| 1JZD\_r\_u.pdb | 28 | 36 | 0.44 | 0.57 |
| 1K5D\_l\_u.pdb | 37 | 32 | 0.38 | 0.31 |
| 1K5D\_r\_u.pdb | 34 | 33 | 0.27 | 0.19 |
| 1K74\_l\_u.pdb | 31 | 32 | 0.29 | 0.28 |
| 1K74\_r\_u.pdb | 30 | 30 | 0.65 | 0.61 |
| 1KAC\_l\_u.pdb | 26 | 25 | 0.68 | 0.65 |
| 1KAC\_r\_u.pdb | 20 | 28 | 0.13 | 0.12 |
| 1KKL\_l\_u.pdb | 26 | 23 | 0.76 | 0.62 |
| 1KKL\_r\_u.pdb | 24 | 37 | 0.22 | 0.33 |
| 1KLU\_l\_u.pdb | 13 | 30 | 0.24 | 0.54 |
| 1KLU\_r\_u.pdb | 24 | 35 | 0.22 | 0.26 |
| 1KTZ\_l\_u.pdb | 15 | 24 | 0.43 | 0.64 |
| 1KTZ\_r\_u.pdb | 12 | 24 | 0.31 | 0.66 |
| 1KXP\_l\_u.pdb | 55 | 37 | 0.60 | 0.39 |
| 1KXP\_r\_u.pdb | 41 | 34 | 0.39 | 0.31 |
| 1LFD\_l\_u.pdb | 16 | 21 | 0.58 | 0.79 |
| 1LFD\_r\_u.pdb | 18 | 25 | 0.55 | 0.73 |
| 1M10\_l\_u.pdb | 36 | 31 | 0.28 | 0.20 |
| 1M10\_r\_u.pdb | 34 | 28 | 0.41 | 0.29 |
| 1MAH\_l\_u.pdb | 22 | 22 | 0.66 | 0.60 |
| 1MAH\_r\_u.pdb | 38 | 36 | 0.46 | 0.40 |
| 1ML0\_l\_u.pdb | 30 | 22 | 0.73 | 0.53 |
| 1ML0\_r\_u.pdb | 34 | 41 | 0.37 | 0.44 |
| 1MQ8\_l\_u.pdb | 18 | 27 | 0.48 | 0.72 |
| 1MQ8\_r\_u.pdb | 20 | 29 | 0.31 | 0.45 |
| 1N2C\_l\_u.pdb | 59 | 37 | 0.47 | 0.27 |
| 1N2C\_r\_u.pdb | 56 | 50 | 0.13 | 0.09 |
| 1N8O\_l\_u.pdb | 21 | 27 | 0.61 | 0.73 |
| 1N8O\_r\_u.pdb | 32 | 29 | 0.71 | 0.60 |
| 1NW9\_l\_u.pdb | 30 | 24 | 0.56 | 0.40 |
| 1NW9\_r\_u.pdb | 19 | 27 | 0.39 | 0.55 |
| 1OC0\_l\_u.pdb | 15 | 18 | 0.69 | 0.77 |
| 1OC0\_r\_u.pdb | 18 | 27 | 0.10 | 0.15 |
| 1OFU\_l\_u.pdb | 21 | 32 | 0.51 | 0.75 |
| 1OFU\_r\_u.pdb | 22 | 30 | 0.23 | 0.23 |
| 1OPH\_l\_u.pdb | 24 | 29 | 0.51 | 0.54 |
| 1OPH\_r\_u.pdb | 12 | 27 | 0.33 | 0.80 |
| 1OYV\_l\_u.pdb | 29 | 26 | 0.32 | 0.26 |
| 1OYV\_r\_u.pdb | 33 | 30 | 0.47 | 0.42 |
| 1PPE\_l\_u.pdb | 17 | 18 | 0.79 | 0.81 |
| 1PPE\_r\_u.pdb | 28 | 29 | 0.68 | 0.65 |
| 1PVH\_l\_u.pdb | 14 | 24 | 0.10 | 0.11 |
| 1PVH\_r\_u.pdb | 20 | 26 | 0.32 | 0.41 |
| 1PXV\_l\_u.pdb | 31 | 25 | 0.41 | 0.30 |
| 1PXV\_r\_u.pdb | 33 | 28 | 0.72 | 0.59 |
| 1QA9\_l\_u.pdb | 19 | 28 | 0.45 | 0.60 |
| 1QA9\_r\_u.pdb | 20 | 29 | 0.46 | 0.63 |
| 1R0R\_l\_u.pdb | 17 | 21 | 0.76 | 0.94 |
| 1R0R\_r\_u.pdb | 24 | 30 | 0.51 | 0.60 |
| 1R6Q\_l\_u.pdb | 23 | 24 | 0.20 | 0.06 |
| 1R6Q\_r\_u.pdb | 28 | 26 | 0.32 | 0.26 |
| 1R8S\_l\_u.pdb | 38 | 29 | 0.49 | 0.36 |
| 1R8S\_r\_u.pdb | 30 | 27 | 0.72 | 0.60 |
| 1RLB\_l\_u.pdb | 19 | 25 | 0.35 | 0.44 |
| 1RLB\_r\_u.pdb | 7 | 21 | 0.05 | 0.13 |
| 1RV6\_l\_u.pdb | 23 | 24 | 0.80 | 0.82 |
| 1RV6\_r\_u.pdb | 27 | 31 | 0.35 | 0.33 |
| 1S1Q\_l\_u.pdb | 18 | 22 | 0.64 | 0.77 |
| 1S1Q\_r\_u.pdb | 22 | 27 | 0.00 | 0.00 |
| 1SBB\_l\_u.pdb | 17 | 28 | 0.52 | 0.85 |
| 1SBB\_r\_u.pdb | 18 | 31 | 0.08 | 0.09 |
| 1SYX\_l\_u.pdb | 17 | 21 | 0.59 | 0.68 |
| 1SYX\_r\_u.pdb | 21 | 26 | 0.10 | 0.06 |
| 1T6B\_l\_u.pdb | 25 | 27 | 0.30 | 0.18 |
| 1T6B\_r\_u.pdb | 30 | 40 | 0.38 | 0.50 |
| 1TMQ\_l\_u.pdb | 31 | 25 | 0.71 | 0.51 |
| 1TMQ\_r\_u.pdb | 37 | 35 | 0.40 | 0.32 |
| 1UDI\_l\_u.pdb | 25 | 23 | 0.68 | 0.56 |
| 1UDI\_r\_u.pdb | 34 | 29 | 0.29 | 0.21 |
| 1US7\_l\_u.pdb | 15 | 22 | 0.49 | 0.78 |
| 1US7\_r\_u.pdb | 23 | 29 | 0.38 | 0.48 |
| 1WDW\_l\_u.pdb | 40 | 27 | 0.73 | 0.43 |
| 1WDW\_r\_u.pdb | 41 | 39 | 0.23 | 0.22 |
| 1WQ1\_l\_u.pdb | 38 | 27 | 0.75 | 0.51 |
| 1WQ1\_r\_u.pdb | 44 | 33 | 0.58 | 0.42 |
| 1XD3\_l\_u.pdb | 21 | 22 | 0.59 | 0.62 |
| 1XD3\_r\_u.pdb | 26 | 28 | 0.56 | 0.53 |
| 1XQS\_l\_u.pdb | 29 | 29 | 0.42 | 0.41 |
| 1XQS\_r\_u.pdb | 32 | 31 | 0.63 | 0.57 |
| 1XU1\_l\_u.pdb | 18 | 19 | 0.49 | 0.48 |
| 1XU1\_r\_u.pdb | 25 | 34 | 0.37 | 0.46 |
| 1Y64\_l\_u.pdb | 46 | 34 | 0.27 | 0.18 |
| 1Y64\_r\_u.pdb | 38 | 36 | 0.23 | 0.20 |
| 1YVB\_l\_u.pdb | 19 | 25 | 0.45 | 0.57 |
| 1YVB\_r\_u.pdb | 35 | 30 | 0.78 | 0.64 |
| 1Z0K\_l\_u.pdb | 16 | 20 | 0.57 | 0.59 |
| 1Z0K\_r\_u.pdb | 27 | 28 | 0.66 | 0.64 |
| 1Z5Y\_l\_u.pdb | 19 | 25 | 0.54 | 0.65 |
| 1Z5Y\_r\_u.pdb | 19 | 24 | 0.47 | 0.62 |
| 1ZHH\_l\_u.pdb | 33 | 29 | 0.52 | 0.45 |
| 1ZHH\_r\_u.pdb | 26 | 32 | 0.25 | 0.23 |
| 1ZHI\_l\_u.pdb | 18 | 25 | 0.30 | 0.24 |
| 1ZHI\_r\_u.pdb | 24 | 30 | 0.44 | 0.49 |
| 1ZLI\_l\_u.pdb | 32 | 23 | 0.75 | 0.52 |
| 1ZLI\_r\_u.pdb | 26 | 31 | 0.40 | 0.47 |
| 1ZM4\_l\_u.pdb | 25 | 29 | 0.46 | 0.51 |
| 1ZM4\_r\_u.pdb | 28 | 36 | 0.28 | 0.37 |
| 2A5T\_l\_u.pdb | 31 | 32 | 0.59 | 0.54 |
| 2A5T\_r\_u.pdb | 30 | 31 | 0.36 | 0.36 |
| 2A9K\_l\_u.pdb | 20 | 29 | 0.35 | 0.49 |
| 2A9K\_r\_u.pdb | 29 | 27 | 0.38 | 0.33 |
| 2ABZ\_l\_u.pdb | 20 | 21 | 0.44 | 0.43 |
| 2ABZ\_r\_u.pdb | 22 | 31 | 0.52 | 0.72 |
| 2AJF\_l\_u.pdb | 26 | 29 | 0.62 | 0.69 |
| 2AJF\_r\_u.pdb | 27 | 36 | 0.05 | 0.07 |
| 2AYO\_l\_u.pdb | 30 | 22 | 0.88 | 0.60 |
| 2AYO\_r\_u.pdb | 52 | 33 | 0.71 | 0.43 |
| 2B42\_l\_u.pdb | 38 | 28 | 0.80 | 0.55 |
| 2B42\_r\_u.pdb | 41 | 33 | 0.66 | 0.48 |
| 2B4J\_l\_u.pdb | 15 | 23 | 0.42 | 0.56 |
| 2B4J\_r\_u.pdb | 18 | 28 | 0.38 | 0.66 |
| 2BTF\_l\_u.pdb | 33 | 26 | 0.25 | 0.16 |
| 2BTF\_r\_u.pdb | 26 | 34 | 0.31 | 0.36 |
| 2C0L\_l\_u.pdb | 18 | 25 | 0.30 | 0.37 |
| 2C0L\_r\_u.pdb | 36 | 32 | 0.39 | 0.31 |
| 2CFH\_l\_u.pdb | 29 | 26 | 0.67 | 0.57 |
| 2CFH\_r\_u.pdb | 29 | 28 | 0.66 | 0.60 |
| 2FJU\_l\_u.pdb | 13 | 28 | 0.44 | 0.91 |
| 2FJU\_r\_u.pdb | 21 | 31 | 0.08 | 0.07 |
| 2G77\_l\_u.pdb | 27 | 27 | 0.41 | 0.40 |
| 2G77\_r\_u.pdb | 37 | 33 | 0.28 | 0.24 |
| 2H7V\_l\_u.pdb | 22 | 22 | 0.56 | 0.53 |
| 2H7V\_r\_u.pdb | 20 | 30 | 0.56 | 0.81 |
| 2HLE\_l\_u.pdb | 24 | 26 | 0.82 | 0.86 |
| 2HLE\_r\_u.pdb | 39 | 29 | 0.67 | 0.47 |
| 2HQS\_l\_u.pdb | 26 | 24 | 0.42 | 0.38 |
| 2HQS\_r\_u.pdb | 43 | 35 | 0.26 | 0.21 |
| 2HRK\_l\_u.pdb | 19 | 24 | 0.65 | 0.76 |
| 2HRK\_r\_u.pdb | 19 | 26 | 0.60 | 0.80 |
| 2I9B\_l\_u.pdb | 27 | 26 | 0.54 | 0.46 |
| 2I9B\_r\_u.pdb | 52 | 32 | 0.29 | 0.13 |
| 2IDO\_l\_u.pdb | 23 | 22 | 0.55 | 0.52 |
| 2IDO\_r\_u.pdb | 30 | 28 | 0.32 | 0.30 |
| 2J0T\_l\_u.pdb | 20 | 26 | 0.59 | 0.73 |
| 2J0T\_r\_u.pdb | 31 | 27 | 0.65 | 0.52 |
| 2J7P\_l\_u.pdb | 36 | 31 | 0.55 | 0.47 |
| 2J7P\_r\_u.pdb | 45 | 31 | 0.67 | 0.41 |
| 2MTA\_l\_u.pdb | 19 | 24 | 0.61 | 0.69 |
| 2MTA\_r\_u.pdb | 28 | 36 | 0.15 | 0.16 |
| 2NZ8\_l\_u.pdb | 28 | 28 | 0.80 | 0.76 |
| 2NZ8\_r\_u.pdb | 42 | 33 | 0.35 | 0.24 |
| 2O3B\_l\_u.pdb | 21 | 26 | 0.40 | 0.45 |
| 2O3B\_r\_u.pdb | 32 | 29 | 0.48 | 0.44 |
| 2O8V\_l\_u.pdb | 20 | 24 | 0.67 | 0.80 |
| 2O8V\_r\_u.pdb | 10 | 30 | 0.26 | 0.66 |
| 2OOB\_l\_u.pdb | 13 | 22 | 0.46 | 0.76 |
| 2OOB\_r\_u.pdb | 10 | 19 | 0.26 | 0.50 |
| 2OOR\_l\_u.pdb | 31 | 27 | 0.53 | 0.43 |
| 2OOR\_r\_u.pdb | 30 | 37 | 0.27 | 0.24 |
| 2OT3\_l\_u.pdb | 31 | 27 | 0.67 | 0.58 |
| 2OT3\_r\_u.pdb | 33 | 31 | 0.23 | 0.21 |
| 2OUL\_l\_u.pdb | 30 | 25 | 0.79 | 0.59 |
| 2OUL\_r\_u.pdb | 36 | 30 | 0.79 | 0.61 |
| 2OZA\_l\_u.pdb | 41 | 32 | 0.56 | 0.37 |
| 2OZA\_r\_u.pdb | 76 | 34 | 0.42 | 0.18 |
| 2PCC\_l\_u.pdb | 18 | 25 | 0.29 | 0.24 |
| 2PCC\_r\_u.pdb | 17 | 29 | 0.35 | 0.64 |
| 2SIC\_l\_u.pdb | 18 | 25 | 0.54 | 0.70 |
| 2SIC\_r\_u.pdb | 28 | 30 | 0.50 | 0.46 |
| 2SNI\_l\_u.pdb | 21 | 22 | 0.71 | 0.67 |
| 2SNI\_r\_u.pdb | 25 | 30 | 0.51 | 0.59 |
| 2UUY\_l\_u.pdb | 13 | 21 | 0.64 | 0.96 |
| 2UUY\_r\_u.pdb | 24 | 29 | 0.52 | 0.62 |
| 2VDB\_l\_u.pdb | 23 | 21 | 0.49 | 0.41 |
| 2VDB\_r\_u.pdb | 24 | 38 | 0.05 | 0.01 |
| 2Z0E\_l\_u.pdb | 28 | 25 | 0.51 | 0.39 |
| 2Z0E\_r\_u.pdb | 37 | 32 | 0.38 | 0.32 |
| 3BP8\_l\_u.pdb | 21 | 23 | 0.46 | 0.44 |
| 3BP8\_r\_u.pdb | 25 | 38 | 0.15 | 0.19 |
| 3CPH\_l\_u.pdb | 21 | 27 | 0.68 | 0.84 |
| 3CPH\_r\_u.pdb | 22 | 32 | 0.51 | 0.74 |
| 3D5S\_l\_u.pdb | 21 | 21 | 0.48 | 0.48 |
| 3D5S\_r\_u.pdb | 22 | 31 | 0.18 | 0.09 |
| 3SGQ\_l\_u.pdb | 12 | 20 | 0.52 | 0.81 |
| 3SGQ\_r\_u.pdb | 23 | 28 | 0.58 | 0.68 |
| 4CPA\_l\_u.pdb | 11 | 19 | 0.54 | 0.89 |
| 4CPA\_r\_u.pdb | 24 | 31 | 0.50 | 0.60 |
| 7CEI\_l\_u.pdb | 20 | 26 | 0.43 | 0.54 |
| 7CEI\_r\_u.pdb | 23 | 24 | 0.71 | 0.74 |
| BOYV\_l\_u.pdb | 29 | 26 | 0.24 | 0.27 |
| BOYV\_r\_u.pdb | 33 | 30 | 0.04 | 0.01 |
| Average | 27 | 28 | 0.46 | 0.46 |

**Table S3. List of 2766 structures used to train residue interface propensities.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 4pr5(A:C) | 1lvb(B:D) | 2zit(C:D) | 3shj(C:B) | 4eu2(D:E) | 4ifd(D:G) | 4ifd(A:G) | 4lqq(B:A) |
| 4cqm(N:M) | 3ui2(A:B) | 3n95(C:E) | 4w8p(A:B) | 3r8b(A:B) | 4c56(C:B) | 4rgm(A:C) | 3ln4(A:C) |
| 4oo1(A:D) | 4oo1(C:D) | 3euk(H:L) | 2fts(A:P) | 2xfg(A:B) | 1u7v(A:B) | 4c02(A:B) | 1fyh(A:B) |
| 3gqi(A:B) | 3ab3(B:A) | 2hik(X:Y) | 2hik(M:N) | 3ima(A:B) | 1z56(B:C) | 4wm7(B:C) | 3c4m(A:C) |
| 2a5d(A:B) | 4a1v(D:B) | 3i8e(B:D) | 3am7(A:B) | 3at0(A:B) | 1v1p(A:B) | 2qej(B:C) | 3kls(B:Y) |
| 3rzx(A:B) | 3f7p(B:D) | 2nn6(B:E) | 2nn6(B:H) | 2qi9(B:D) | 4dbl(B:D) | 3mff(A:B) | 4oo1(B:E) |
| 4ifd(A:B) | 4ifd(B:H) | 2wp8(B:J) | 4oo1(E:F) | 4ifd(F:I) | 4oo1(F:J) | 4k39(A:C) | 4cwu(A:U) |
| 1br8(I:P) | 3tz1(A:B) | 3bdm(O:U) | 3un4(P:O) | 3wxr(B:I) | 1iru(B:C) | 4rca(A:B) | 4kr0(A:B) |
| 4bq6(B:F) | 3tiw(B:D) | 3l7z(H:I) | 3zeu(D:E) | 3o8e(C:D) | 3inb(B:C) | 2uud(H:L) | 1cl7(H:I) |
| 2xtj(A:D) | 3etb(G:K) | 4mqt(A:B) | 4xt1(C:A) | 3gi9(H:C) | 4cfh(B:E) | 2qlv(B:C) | 4qw3(T:U) |
| 1f5q(A:B) | 1zvz(A:B) | 4tzo(G:H) | 4tzq(C:D) | 4qt8(A:C) | 4o3t(A:B) | 4ldt(A:C) | 4a49(A:B) |
| 3von(A:C) | 3jw0(B:D) | 2nq2(B:D) | 1pqz(A:B) | 1pyt(A:C) | 4jdh(A:B) | 2vdu(D:F) | 3cfs(B:E) |
| 2btw(A:B) | 4pht(A:X) | 3kcg(H:I) | 4o4b(A:B) | 2hzs(B:I) | 3pja(C:L) | 2qi9(A:F) | 4dbl(B:E) |
| 3nap(A:B) | 3nap(B:C) | 1b35(A:B) | 1b35(B:C) | 1r2b(A:D) | 4p6z(G:B) | 2vbc(A:B) | 1s6c(A:B) |
| 3p3n(A:B) | 3v79(K:C) | 1xv9(A:B) | 3twu(A:B) | 3tg5(A:B) | 3stb(C:D) | 3stb(C:B) | 2hik(A:C) |
| 3fds(A:C) | 2izo(A:C) | 1pjm(A:B) | 1g3n(E:G) | 4gmj(A:B) | 4ct4(C:D) | 1syq(A:B) | 2wby(A:C) |
| 1zuz(A:B) | 2jea(A:B) | 4qiw(J:O) | 4nqc(H:C) | 3a2f(A:B) | 3pl6(B:D) | 4is6(B:C) | 1f3j(B:P) |
| 1jk8(B:C) | 1aqd(K:L) | 1q5r(E:L) | 4j7b(A:B) | 3u85(A:B) | 2arr(A:P) | 2a42(A:B) | 1n6e(I:J) |
| 4qw3(B:C) | 1w3c(B:D) | 3wxr(W:N) | 1e3w(A:B) | 1zw2(A:B) | 4kf5(A:C) | 1xrs(A:B) | 2yiu(A:B) |
| 1niw(E:F) | 4g4s(E:F) | 4g4s(F:P) | 1iru(F:G) | 4p6z(M:T) | 4uqy(A:B) | 4pln(C:A) | 2y48(A:C) |
| 4g4s(E:O) | 3sf5(A:B) | 1e3u(B:D) | 2wb1(R:S) | 3w0l(B:A) | 4g1u(A:D) | 2x53(K:V) | 2aho(A:B) |
| 4oqb(A:C) | 3ism(A:C) | 4b18(A:B) | 2zu0(A:C) | 2y9q(A:B) | 3srj(A:C) | 3wkt(A:C) | 4qts(A:C) |
| 4nst(C:D) | 3mj9(A:H) | 3f5c(A:B) | 4u0q(A:B) | 4ifd(E:H) | 4ifd(E:J) | 4g4s(O:P) | 4etq(A:X) |
| 3qhr(D:M) | 4cfv(A:B) | 2cci(B:F) | 2jgz(A:B) | 2w80(A:D) | 4a8j(E:C) | 4a8j(A:B) | 3tdi(B:C) |
| 4cad(E:F) | 3vsh(A:B) | 4ht3(B:A) | 3p8f(A:I) | 4n39(A:B) | 4q54(D:O) | 4q54(A:O) | 4q54(c:o) |
| 4pbu(o:b) | 3h11(A:B) | 2nn6(C:F) | 2nn6(E:F) | 3qnw(A:B) | 1t01(A:B) | 3kld(A:B) | 4u6x(A:P) |
| 2o26(E:U) | 4ofy(F:C) | 1frt(A:B) | 4k71(A:B) | 3l74(D:E) | 1ppj(C:R) | 2yiu(D:C) | 1ntk(A:I) |
| 1ta3(A:B) | 1te1(A:B) | 4f20(A:Q) | 4nbx(A:B) | 2b9i(A:C) | 1ed3(A:C) | 4f27(A:Q) | 1axc(C:D) |
| 1u76(C:D) | 1ul1(X:A) | 4x1q(U:P) | 3oy5(U:P) | 4gly(A:B) | 3pb1(I:E) | 4mnx(A:B) | 3oy6(P:U) |
| 1jmu(C:D) | 2vsu(B:C) | 4wem(A:B) | 3h3b(A:C) | 4ut7(H:L) | 4m3k(A:B) | 4cdg(B:D) | 4x7d(B:C) |
| 4grw(B:H) | 4nby(A:C) | 4c57(A:C) | 2xt1(A:B) | 4laj(B:I) | 4ksd(A:B) | 3sn6(A:N) | 4wgw(C:D) |
| 4glr(H:I) | 3zkq(A:D) | 3rjq(A:B) | 1kxq(A:H) | 3p0g(A:B) | 4lde(A:B) | 2gsg(C:D) | 4lgp(C:D) |
| 4hxi(B:A) | 3o1h(A:B) | 3cqc(A:B) | 4kmd(A:B) | 2b3t(A:B) | 4cmh(A:B) | 1gaq(A:B) | 4hzu(A:T) |
| 4hzu(B:A) | 3tax(C:D) | 1r1k(D:A) | 3vft(A:C) | 4lld(A:B) | 4rfs(A:T) | 4a8j(A:C) | 3s6n(2:M) |
| 3bgo(P:S) | 4xai(B:Q) | 3d2u(A:C) | 3d2u(F:E) | 3s9m(A:C) | 3uvv(A:B) | 3tws(A:E) | 1bev(1:4) |
| 2prc(C:L) | 1jtd(A:B) | 3qhy(A:B) | 3b2c(A:C) | 3ggr(C:B) | 3ggr(C:A) | 2p0w(B:Q) | 1o7d(A:D) |
| 1k3z(A:D) | 4pbw(A:D) | 2r0l(A:H) | 1w98(A:B) | 2r7g(A:B) | 2vso(A:E) | 1xn3(C:I) | 4wjg(A:C) |
| 3bev(A:C) | 4cfe(B:E) | 4pri(A:C) | 4nf4(A:B) | 3g65(A:C) | 2qe7(D:G) | 3hna(B:Q) | 4ckb(E:D) |
| 1xh3(A:C) | 3ve6(A:B) | 3i7h(A:B) | 1t3q(B:C) | 1ffu(E:F) | 3jvg(A:C) | 1cdl(B:F) | 4pi0(G:E) |
| 4b8c(D:A) | 4wza(D:H) | 2yb8(B:A) | 4nuf(A:P) | 4psx(E:P) | 2x0l(A:C) | 3n9o(A:C) | 4lvo(A:P) |
| 4c9b(A:B) | 1ook(B:G) | 4i2x(E:B) | 3o2d(H:A) | 4oii(A:H) | 2oz4(A:H) | 3uyp(A:B) | 3tt3(A:H) |
| 4o02(A:H) | 4hgm(A:B) | 1xb2(A:B) | 3vx8(A:B) | 4b8o(A:B) | 3kww(A:C) | 3u3w(B:Q) | 2pmi(A:B) |
| 2v53(C:D) | 4egc(A:B) | 4gza(A:G) | 4gwp(G:C) | 2onk(F:H) | 2onk(D:E) | 2f4o(A:B) | 5ajo(A:B) |
| 3ln5(A:C) | 2xfx(A:C) | 3hrd(F:G) | 3hrd(C:D) | 4u6y(A:P) | 4khz(E:G) | 3pux(G:A) | 4q5u(C:A) |
| 4ap2(A:B) | 3rrn(A:B) | 4ehq(A:G) | 2drm(A:E) | 1ohh(F:G) | 1ohh(B:G) | 4r3z(B:C) | 3kmz(A:D) |
| 2p9u(A:D) | 4ifd(C:I) | 4ifd(I:K) | 4di3(E:C) | 3puf(G:H) | 4idj(A:H) | 1hbt(H:I) | 4v2c(C:D) |
| 2f31(A:B) | 1xdk(E:F) | 3pcs(D:H) | 2wtk(D:F) | 2wtk(B:C) | 2wp8(A:J) | 2nn6(E:H) | 1m93(A:B) |
| 3zin(A:B) | 2obo(A:B) | 4myw(C:D) | 3w9e(A:C) | 3uwx(A:B) | 2way(C:D) | 4gmn(B:A) | 3ejh(B:F) |
| 3wsy(A:C) | 2wii(B:C) | 3s90(A:C) | 4wk0(B:A) | 4arz(A:B) | 4ozr(U:E) | 3kyh(B:C) | 4r3z(A:B) |
| 4eoz(C:D) | 2wby(B:F) | 1h6w(A:B) | 2xs1(A:B) | 4xtr(G:A) | 4wih(A:B) | 3ksa(B:D) | 1ywh(E:F) |
| 4nmx(A:B) | 2xyi(A:B) | 2ynm(B:C) | 4hwb(A:H) | 4lk0(A:C) | 4lk1(B:D) | 1ynj(B:D) | 3qml(A:C) |
| 4itr(B:C) | 3wuw(G:A) | 3c5w(C:P) | 2q6g(A:C) | 2gww(A:B) | 3wo4(B:C) | 3h5c(A:B) | 3dwl(B:I) |
| 4gwp(E:C) | 2axz(B:F) | 4lrx(A:C) | 2y4i(B:C) | 1lsh(A:B) | 1dml(E:F) | 3ve1(C:D) | 3a58(C:D) |
| 4c7o(C:D) | 4psw(A:B) | 4dep(E:F) | 4b60(A:C) | 2ccl(A:B) | 4fl4(I:G) | 3w2w(A:B) | 3btr(C:B) |
| 2z2l(D:E) | 4lrt(A:B) | 3tsz(A:B) | 2fcw(A:B) | 2cg5(A:B) | 1or8(A:B) | 1rm6(D:E) | 1rm6(B:C) |
| 4qmg(C:H) | 4n0i(A:B) | 4m69(A:B) | 2a06(Q:P) | 3cxh(D:C) | 4lac(B:C) | 4jt5(B:D) | 4c3i(B:G) |
| 3kbt(B:C) | 2wzp(Q:R) | 7ins(A:G) | 4ktt(D:E) | 4j4p(B:C) | 2b4s(C:D) | 1gag(A:B) | 1rqq(A:E) |
| 3bu3(A:B) | 2cnw(A:D) | 4mne(D:C) | 4hmy(B:C) | 3bh6(A:B) | 3tjz(D:E) | 4c0a(F:C) | 3oad(A:B) |
| 1r17(A:C) | 4gms(A:H) | 3hrd(F:H) | 1er8(E:I) | 3p71(T:C) | 4i5l(E:F) | 2npp(E:F) | 2npp(A:C) |
| 4d10(C:F) | 4cff(C:F) | 4bg4(A:B) | 1t08(A:C) | 4dj9(A:B) | 3sua(B:E) | 1lb1(E:F) | 2rgn(E:F) |
| 4d0n(A:B) | 1foe(A:B) | 1g4u(S:R) | 1z2c(A:B) | 2ov2(F:N) | 2dfk(C:D) | 1ki1(C:D) | 1xcg(A:B) |
| 2vrw(A:B) | 3nmx(A:D) | 3avr(A:B) | 4etp(A:B) | 4mn8(A:C) | 3tac(A:B) | 1mxe(A:E) | 3kl8(G:F) |
| 3grw(A:H) | 1xxi(A:E) | 4jk1(B:D) | 4gzy(B:D) | 4fp9(C:E) | 4c3i(B:C) | 3uvm(A:B) | 4cy1(B:C) |
| 4fvl(B:D) | 1jju(A:B) | 4cu4(A:B) | 1sxj(C:F) | 4nzw(B:A) | 4mz5(E:C) | 3exe(E:F) | 3vrl(D:E) |
| 2ypl(A:C) | 4wjg(C:E) | 3vti(A:C) | 3vys(B:C) | 1jqj(A:C) | 1jr3(C:D) | 4j5x(D:A) | 1thr(H:I) |
| 4fqj(A:H) | 3kwv(D:F) | 4bxz(B:C) | 4hdr(A:B) | 1abi(H:I) | 3erc(B:C) | 3o0e(A:L) | 1cm4(A:B) |
| 1jmz(A:B) | 2btv(B:G) | 2bq1(I:E) | 1jpf(A:C) | 3opy(D:J) | 1unn(A:D) | 3tx7(A:B) | 4q54(C:D) |
| 3cx5(L:M) | 2rgn(A:B) | 3krw(A:B) | 1got(A:B) | 3sn6(A:B) | 3hd8(C:D) | 4nif(A:B) | 2p1o(B:C) |
| 3ap2(B:T) | 1bxg(A:B) | 1ej6(A:B) | 3k8p(C:D) | 2yns(A:C) | 2w2h(A:C) | 4or5(F:G) | 2nup(A:B) |
| 2xxa(A:B) | 1t0j(A:B) | 1t0j(B:C) | 2vr3(B:D) | 3kyd(B:D) | 3fqd(A:B) | 4il6(A:B) | 4hsu(A:C) |
| 2yba(A:D) | 2v1d(A:C) | 3kv4(A:B) | 3n9n(A:C) | 2qag(A:B) | 3ujg(A:B) | 4oo1(H:J) | 4at7(A:B) |
| 1zot(A:B) | 4hea(4:H) | 3mzw(A:B) | 1lp1(A:B) | 4nqs(B:E) | 1jmu(F:I) | 1w1i(D:H) | 1um9(A:B) |
| 4q66(A:B) | 3w15(A:C) | 3r9a(C:D) | 4u1e(B:I) | 3dva(G:H) | 2q2e(A:B) | 1v1r(A:B) | 2bp7(G:H) |
| 1smr(A:B) | 1avf(Q:J) | 1rgq(B:C) | 4lv5(A:B) | 3g9w(D:A) | 4gpk(L:X) | 1g9n(G:C) | 2b4c(G:C) |
| 3vmf(A:B) | 3d7u(A:B) | 3eg9(B:A) | 1sdd(A:B) | 4erm(F:A) | 5ajn(A:P) | 3wxm(B:A) | 2qtv(A:D) |
| 1m2v(A:B) | 3ul0(C:B) | 3dwl(A:H) | 2ych(A:B) | 2bcj(A:Q) | 4gnk(A:B) | 1fqk(C:D) | 4jdt(G:H) |
| 4jb9(G:H) | 2obh(A:C) | 3vfu(A:C) | 1ldk(A:B) | 2yjn(A:B) | 2p5b(A:I) | 2iou(D:G) | 1sqk(A:B) |
| 4i4t(F:A) | 4hh3(A:C) | 4u7t(C:D) | 3o4x(B:F) | 1aqc(A:C) | 1x11(A:C) | 3rrm(A:C) | 1q1s(B:C) |
| 3nvn(A:B) | 1t6g(A:C) | 2zbk(G:H) | 3mca(A:B) | 3pux(F:B) | 2c5w(B:A) | 1wth(A:D) | 4k38(B:C) |
| 1jjo(A:C) | 3qlv(E:F) | 3zhe(A:B) | 3hkz(M:J) | 3ul1(B:A) | 3p73(A:B) | 2z57(A:B) | 3b9f(H:I) |
| 3kz4(B:I) | 3kq4(B:A) | 1pyt(A:B) | 4ay5(A:I) | 4lop(C:K) | 2gj7(A:F) | 2oo5(B:C) | 4eah(F:C) |
| 4dy7(E:F) | 3sn6(A:R) | 4fxg(B:J) | 2hcj(A:B) | 1l3r(E:I) | 4gwp(B:C) | 3kf9(A:B) | 4jqx(A:B) |
| 4b3i(A:D) | 4u1c(C:A) | 3ias(U:V) | 4i5l(D:E) | 4p6v(B:A) | 1iwq(A:B) | 3ewt(A:E) | 3dvj(A:B) |
| 4byf(C:D) | 3gof(B:D) | 1yr5(A:B) | 2ix7(B:C) | 2bcx(A:B) | 1g2c(S:T) | 4c2m(M:B) | 4nzr(L:M) |
| 4nzt(L:M) | 3gc3(B:A) | 4ms4(A:B) | 4tma(F:G) | 1uf2(B:H) | 4l67(A:B) | 4bxs(A:V) | 2gd4(H:I) |
| 4p6z(G:M) | 4bpw(A:B) | 1bgx(T:H) | 3vga(A:C) | 3zkm(A:L) | 4liq(E:H) | 2q8b(A:H) | 3hrd(A:D) |
| 3zyj(A:B) | 2btq(A:B) | 4he8(I:F) | 4he8(I:G) | 4jd2(A:B) | 4tx3(A:B) | 3wry(B:D) | 1pww(A:C) |
| 4qd2(A:E) | 2qn6(A:C) | 3lcb(B:C) | 4htv(A:B) | 3dl8(G:A) | 4cyj(D:F) | 1s78(B:F) | 3pgf(A:H) |
| 4k8r(B:H) | 3ulv(H:A) | 3v0a(A:C) | 3g6j(B:F) | 1kxv(B:D) | 4hf5(A:H) | 4k9e(H:C) | 4irz(A:H) |
| 3p11(H:A) | 3buz(A:B) | 4b1w(B:M) | 2a40(A:C) | 4f5c(A:E) | 2djg(A:B) | 1wdm(B:D) | 1xr9(A:C) |
| 3vcl(A:C) | 3rwd(D:F) | 4mj5(A:C) | 3vfr(A:C) | 2yf1(A:C) | 1tb6(H:I) | 1hr9(F:Q) | 1hr6(C:D) |
| 2wc0(A:C) | 1ydi(A:B) | 4c1n(E:X) | 3e8d(A:C) | 2bp5(M:P) | 2jkr(A:M) | 2ajq(F:I) | 1jdp(A:H) |
| 4d18(I:J) | 4a1x(A:C) | 4f5x(A:W) | 3fga(A:B) | 3fhc(B:A) | 3ayu(A:B) | 2ibf(A:B) | 3u86(A:B) |
| 2r9b(B:D) | 3v47(B:D) | 1m4h(A:C) | 3euk(H:J) | 4o4h(C:D) | 2omx(A:B) | 4a3v(A:B) | 4c11(A:B) |
| 3wee(A:B) | 3nvq(A:B) | 4o6f(A:B) | 3vvs(A:B) | 3v2u(A:D) | 2vif(A:P) | 2q0n(A:B) | 4hom(A:B) |
| 2bj4(B:D) | 2aof(B:C) | 4no0(A:C) | 3d32(A:C) | 2qbx(B:D) | 1xn2(A:E) | 3vi1(A:C) | 1d4t(A:B) |
| 4xvj(H:A) | 4po7(A:N) | 5aer(A:B) | 4mnw(A:B) | 4o3u(A:P) | 3h1z(A:P) | 2xu7(B:C) | 2qac(A:T) |
| 1jbu(H:X) | 4tzn(A:C) | 4l3o(A:E) | 1y3a(C:G) | 1vyj(C:D) | 1d9k(D:P) | 4ezu(A:B) | 3fdm(A:D) |
| 4u2w(A:B) | 1o9k(G:S) | 3v79(C:R) | 4gnt(A:B) | 4d2g(B:E) | 4bqd(A:C) | 3ogm(B:Q) | 3n00(A:B) |
| 2zvk(A:U) | 1pjn(A:B) | 1g0y(R:I) | 4h25(E:F) | 4h25(D:F) | 3e1k(G:H) | 2bp3(A:T) | 1yyp(A:B) |
| 3kut(B:D) | 3dve(A:B) | 3aa1(B:C) | 2rky(A:D) | 2f8e(X:A) | 3tei(B:A) | 2z5n(A:B) | 2zc5(A:B) |
| 4i7c(A:B) | 1uhd(B:A) | 1hr8(B:O) | 3b1j(B:D) | 5afp(C:B) | 4upu(A:B) | 1ihs(H:I) | 4n3b(A:B) |
| 4g5q(B:F) | 4fu4(B:D) | 3mhp(B:C) | 3c66(B:D) | 2pv9(B:C) | 4oih(B:A) | 2vog(A:B) | 2vof(A:B) |
| 2wh6(A:B) | 4d2m(C:D) | 2yj1(A:B) | 2nl9(A:B) | 2nla(A:B) | 2bzw(A:B) | 3lu9(B:C) | 1iq5(A:B) |
| 4j2x(A:B) | 4j2l(C:D) | 4j2l(A:C) | 4emz(D:M) | 4dc2(Z:A) | 3ukx(B:C) | 3ro2(A:B) | 3h8a(C:F) |
| 3fm7(A:C) | 1t34(A:H) | 1yk0(A:E) | 1jmt(A:B) | 4jqi(A:V) | 3rf3(B:D) | 3aa6(B:C) | 3hym(A:B) |
| 2z34(B:D) | 2yle(A:B) | 2c5i(P:T) | 3gs2(C:D) | 2qxv(A:B) | 2ot8(B:D) | 4pn8(F:G) | 4if6(A:B) |
| 3lge(C:G) | 3dvu(A:C) | 2p1l(E:F) | 2brq(A:C) | 4kel(A:B) | 4h0l(C:H) | 3w5a(B:C) | 4l6v(2:7) |
| 4js0(A:B) | 4b1u(B:M) | 3zdl(A:B) | 3uky(C:B) | 3b23(B:C) | 2a41(A:C) | 1vf5(O:R) | 2pg1(F:I) |
| 2sta(E:I) | 1mcv(A:I) | 2vm6(A:B) | 4b4s(B:A) | 3io8(C:D) | 2pqk(A:B) | 1pq1(A:B) | 4po6(A:B) |
| 3qku(A:C) | 2plx(A:B) | 3eh3(A:C) | 1xme(B:C) | 3hqr(A:S) | 1lqb(C:D) | 4dxr(A:B) | 3wn7(L:M) |
| 4nrx(H:P) | 2nud(A:C) | 1tzs(A:P) | 1n6j(A:G) | 1n0w(A:B) | 1gl0(E:I) | 2vu8(E:I) | 2f91(A:B) |
| 4qlb(A:E) | 4c1a(C:D) | 3bua(A:E) | 2z2t(A:D) | 3wu2(m:l) | 1muj(B:C) | 1muj(A:C) | 1jek(A:B) |
| 1bb1(A:B) | 4fq3(B:A) | 4aor(B:E) | 3wmj(B:A) | 3sui(A:B) | 3ixs(C:D) | 2rdd(A:B) | 2bpa(1:3) |
| 1m06(F:J) | 1vf5(C:G) | 2e74(B:G) | 4ogq(A:G) | 4ue8(A:B) | 4jo6(B:Z) | 4g2v(A:B) | 4djz(I:D) |
| 3tvj(I:B) | 2xtt(A:B) | 3l9k(C:W) | 3ip4(A:B) | 2g48(B:D) | 4q54(a:i) | 4tq1(A:B) | 3zwz(B:A) |
| 3vza(E:A) | 3pbp(D:F) | 3htu(C:D) | 2bpt(A:B) | 3c5t(A:B) | 2g49(A:C) | 4afj(B:Y) | 3pcq(I:B) |
| 3zld(B:A) | 2ztt(C:D) | 2om2(C:D) | 1f8v(A:D) | 4pas(A:B) | 4hr6(A:B) | 3gme(A:D) | 4fz0(C:M) |
| 4pc0(A:C) | 3k6g(B:E) | 2xpp(A:B) | 2fot(A:C) | 4wsi(A:X) | 4rg6(A:S) | 4kp3(B:F) | 4gdo(A:B) |
| 4f0z(A:C) | 4bru(A:B) | 2bec(A:B) | 4ueb(A:B) | 4mp0(A:B) | 3ha6(A:B) | 4fe1(F:J) | 2wsf(F:J) |
| 1iq1(C:B) | 4cfr(A:Q) | 2oq1(A:B) | 1wkw(A:B) | 3hxi(A:C) | 2jgb(A:B) | 4q54(E:F) | 1w5c(L:Y) |
| 3rko(L:N) | 1bh9(A:B) | 4ojk(A:C) | 2axt(k:x) | 4ub6(k:c) | 3zs9(A:D) | 3rko(C:D) | 3he4(A:B) |
| 2aze(B:C) | 2aze(A:C) | 3zga(A:B) | 2qfa(B:C) | 2qfa(A:C) | 3lqv(B:Q) | 4psx(C:B) | 3jqo(o:p) |
| 3h8d(A:E) | 3brv(A:D) | 2qiy(A:C) | 2fyz(E:F) | 1n2d(A:C) | 2y0s(R:X) | 4cdi(A:C) | 3ajb(A:B) |
| 2h4m(B:D) | 4jmf(A:B) | 3tvt(A:B) | 3eab(B:H) | 1mqs(A:B) | 3e50(B:D) | 1mox(A:C) | 4jo7(G:H) |
| 3n96(C:E) | 1e79(I:G) | 1eol(A:B) | 2v7q(H:I) | 1h9h(E:I) | 4gux(D:A) | 1f2s(E:I) | 2c1t(B:D) |
| 1qle(C:D) | 4oda(D:B) | 4co6(E:C) | 3bpq(A:B) | 3b0z(A:B) | 4fjo(C:D) | 2o98(B:Q) | 1h2k(A:S) |
| 1rh5(A:C) | 4y3u(B:A) | 4djc(A:B) | 4jqu(A:B) | 4dpg(L:E) | 3wwn(A:B) | 3wkn(F:B) | 2v6x(A:B) |
| 1t0f(C:A) | 3njp(B:D) | 4lgd(C:G) | 4m6b(F:D) | 4ds7(B:E) | 3qhe(C:D) | 3wmm(Z:Y) | 3vpb(B:F) |
| 3he5(C:D) | 2y0n(A:E) | 4l5n(A:C) | 3zoq(A:B) | 1tgs(Z:I) | 4kzz(U:d) | 4nut(A:B) | 4aqr(A:D) |
| 1a81(K:L) | 2i32(A:E) | 1ty4(A:C) | 1nvp(B:D) | 4doq(A:B) | 1e0f(D:I) | 1b0n(A:B) | 4wwr(D:C) |
| 4wy4(A:B) | 4wy4(B:C) | 4n7z(A:B) | 4ln0(C:B) | 3u9z(A:C) | 3c9a(B:D) | 3a1y(F:G) | 3mmy(G:H) |
| 4b86(J:L) | 3lpe(C:D) | 3bc1(E:F) | 2xvc(A:B) | 2auh(A:B) | 1zoq(A:C) | 1eja(A:B) | 4pkc(C:A) |
| 4ntx(A:B) | 4n7v(A:C) | 4bxr(B:D) | 4eaz(D:A) | 3htk(A:B) | 2zqp(Y:E) | 1kig(H:I) | 1avo(E:F) |
| 4e06(H:I) | 3wmm(9:L) | 3wmm(M:Q) | 3mp7(A:B) | 3lkx(A:B) | 3t62(B:E) | 3uou(A:B) | 1tf0(A:B) |
| 3zry(G:I) | 2xok(G:I) | 3zia(H:I) | 1t2k(C:D) | 1n36(J:N) | 3t1h(C:N) | 1f8u(A:B) | 4irv(H:D) |
| 3v4y(E:F) | 1m3w(A:C) | 2cjs(A:C) | 1fos(G:H) | 1eai(B:D) | 3zia(D:J) | 3shg(A:B) | 3h0g(N:X) |
| 3btp(A:B) | 3au4(A:B) | 3abk(Y:Z) | 3abk(A:L) | 2wt7(A:B) | 2bl0(A:B) | 3lwr(A:B) | 2hvy(C:D) |
| 3u28(A:B) | 1urq(A:B) | 1urq(A:D) | 1ci6(A:B) | 4v1t(C:A) | 3l72(R:W) | 2a06(Q:W) | 3t97(B:A) |
| 3cjh(K:L) | 3b5n(G:H) | 3b5n(A:D) | 3b0a(D:E) | 2vjf(A:B) | 2pqr(B:D) | 2hv8(C:F) | 2htm(A:E) |
| 4wy4(A:D) | 4wy4(C:D) | 4lzx(A:B) | 4hyt(C:E) | 3n44(A:B) | 3m0d(A:C) | 3fju(A:B) | 3din(F:G) |
| 3d5r(A:C) | 2xqn(A:T) | 2x9a(A:B) | 4i21(A:C) | 2guz(I:J) | 1yhn(A:B) | 1icf(A:I) | 1gl2(A:D) |
| 1gl2(C:D) | 1gl2(B:C) | 4p78(A:D) | 3kxy(B:T) | 1hrt(H:I) | 4pd4(I:E) | 3cx5(I:D) | 2p58(A:C) |
| 4wwt(O:9) | 3oed(A:C) | 1zud(3:4) | 3tj6(A:B) | 3u7u(D:J) | 1dtd(A:B) | 1b33(D:N) | 4uzz(A:B) |
| 4kbb(B:D) | 4cc4(D:C) | 3t0y(C:D) | 3pmk(C:Q) | 2qfa(A:B) | 1svf(C:D) | 1taf(A:B) | 4tma(F:J) |
| 1dpj(A:B) | 4tq0(E:F) | 3w3w(B:A) | 4txr(C:A) | 3bk3(B:D) | 3qqc(E:D) | 1l2w(C:J) | 4uuz(A:C) |
| 4uuz(B:C) | 4mit(C:G) | 4emc(B:C) | 4bh6(A:I) | 3b5n(B:C) | 2ygg(B:A) | 3abk(N:Z) | 2uwj(E:G) |
| 1zjd(A:B) | 4isl(B:A) | 4isn(B:A) | 4dtg(H:K) | 1zr0(C:D) | 4c3i(B:L) | 4a3j(B:L) | 4c2m(L:C) |
| 4b2c(C:D) | 4h4f(A:B) | 1mee(A:I) | 1cse(E:I) | 1egp(A:B) | 2bfx(A:D) | 2pmz(B:N) | 4qiw(O:V) |
| 2wb1(S:O) | 4a3m(B:J) | 4c3j(C:J) | 4bxz(C:J) | 3dom(A:B) | 3cji(B:D) | 2y3n(A:B) | 1gl2(A:B) |
| 2nps(A:B) | 2nps(B:C) | 1tme(3:4) | 3vvr(A:B) | 3ej9(C:F) | 4qld(D:A) | 4gow(D:A) | 3mb2(I:L) |
| 3hpw(B:C) | 3tcj(B:T) | 1ngm(E:F) | 4bry(A:B) | 3kh2(C:G) | 3h87(B:C) | 2gv5(B:C) | 3rpf(B:C) |
| 3k1r(A:B) | 2zxe(A:G) | 1ocr(B:I) | 4dnc(A:D) | 3h44(A:C) | 3rk2(E:F) | 3fii(A:B) | 2nps(A:D) |
| 3rk2(A:D) | 2c7n(A:B) | 2yxq(A:B) | 2qc1(A:B) | 4hqp(A:I) | 4wyq(A:B) | 4or5(B:E) | 4brw(A:B) |
| 2i3s(A:B) | 4n78(A:E) | 3p8c(E:F) | 4n78(D:E) | 4khp(F:R) | 3vyr(A:B) | 2qqp(E:F) | 3d4u(A:B) |
| 3osl(C:D) | 1yc0(A:I) | 1h3o(C:D) | 2pvg(A:B) | 4wb7(B:J) | 3wyg(C:D) | 3din(F:H) | 4pjo(s:u) |
| 4pjo(a:g) | 4f7u(G:P) | 1xf6(A:B) | 4lms(A:C) | 4u6u(C:D) | 4pjo(E:F) | 3swn(Q:R) | 4pjo(d:f) |
| 3swn(D:E) | 3f1i(H:S) | 2qie(A:B) | 2ftx(A:B) | 2rhk(B:D) | 2cly(A:C) | 2bsq(A:E) | 1v5i(A:B) |
| 3ixe(A:B) | 4uec(A:B) | 4g92(A:B) | 3zvk(C:G) | 3w8h(A:B) | 4fxe(E:B) | 1tm7(E:I) | 1ciq(A:B) |
| 2p22(A:D) | 1xdt(T:R) | 1jju(B:C) | 1jmz(B:G) | 4xlg(B:A) | 3vep(G:E) | 2ein(Q:X) | 1ocz(C:J) |
| 2wy8(A:Q) | 2noj(E:F) | 1ynt(A:E) | 4hjg(A:E) | 1nlw(A:B) | 1f3m(A:C) | 1wve(A:C) | 4pkf(B:A) |
| 4cj2(A:D) | 3tnd(A:B) | 3r45(A:C) | 3knd(A:B) | 2be6(A:D) | 2xpi(D:E) | 2wsf(B:C) | 4fe1(C:D) |
| 2nps(C:D) | 4ksk(C:B) | 4rf0(A:B) | 4ig7(A:B) | 4ap4(E:F) | 4mdk(A:E) | 3c0r(C:D) | 3prp(A:B) |
| 2j7q(D:C) | 2bpb(A:B) | 1m1e(A:B) | 1jwb(B:D) | 1fma(D:E) | 4nkg(A:B) | 4dh2(A:B) | 1bgy(D:G) |
| 2fyu(C:G) | 1sqb(A:G) | 3lvj(B:D) | 2ypa(B:A) | 4bem(I:J) | 1f80(B:D) | 2dzo(C:D) | 1ukl(B:E) |
| 4gi3(C:A) | 3utm(B:C) | 7ins(D:G) | 3kr3(D:H) | 4ajx(D:L) | 2dsp(B:I) | 2g54(A:C) | 3bzx(A:B) |
| 1y48(E:I) | 1cq4(A:B) | 3uip(D:A) | 1w8x(M:F) | 1oey(B:K) | 3myw(A:I) | 3ru4(T:B) | 4v0x(B:A) |
| 4lhx(B:C) | 4drb(C:J) | 3fbi(A:B) | 4ayb(H:C) | 4qiw(I:S) | 4ayb(H:Q) | 3gzn(D:J) | 4llg(F:M) |
| 4lk0(J:N) | 2a1j(A:B) | 4q54(D:E) | 1o7d(B:D) | 1o7d(B:E) | 1jsu(B:C) | 1jsu(A:C) | 1ohh(G:H) |
| 1ohh(D:H) | 1ohh(C:H) | 2j8x(A:B) | 4lyl(D:C) | 2zhx(C:D) | 3qq8(A:B) | 3fwb(B:C) | 3fwc(I:J) |
| 2fo1(D:E) | 2fo1(A:D) | 1y96(C:D) | 1ub4(A:C) | 2h9e(H:C) | 4iv1(D:A) | 4kzz(N:b) | 4m7d(J:K) |
| 4m78(D:E) | 2y8n(A:B) | 1ocr(O:U) | 2uwj(F:G) | 1u0s(Y:A) | 3rn9(A:C) | 1cxz(A:B) | 4i99(B:D) |
| 2fmm(E:C) | 3q6s(D:F) | 4kzz(C:V) | 4kzy(A:V) | 3hhw(D:N) | 3eno(A:C) | 3d3b(A:J) | 3r2c(A:J) |
| 4awx(A:B) | 1mnm(B:C) | 4uus(A:F) | 4chg(F:J) | 4ccg(A:X) | 3zl7(A:C) | 3rea(A:B) | 4ag1(C:A) |
| 3kxe(A:C) | 3cqx(B:C) | 2wiu(A:B) | 2prg(B:C) | 3ub0(A:C) | 1ibm(F:R) | 4q2u(E:F) | 3t5x(A:B) |
| 3qvg(A:B) | 3dxr(A:B) | 3ci0(I:K) | 3ci0(I:J) | 2bsk(C:F) | 2bky(A:X) | 4u5c(A:E) | 2w1a(A:C) |
| 1yfn(A:E) | 2inp(B:L) | 1gvn(C:D) | 2o97(A:B) | 3da7(E:F) | 4geh(C:D) | 4gdk(D:E) | 1pp9(U:Q) |
| 4aj5(Y:D) | 4aj5(B:M) | 3w1s(A:C) | 3r07(A:C) | 4yfx(K:J) | 3tq7(A:Q) | 1v74(A:B) | 3hug(I:J) |
| 3s6n(2:E) | 4f7u(E:F) | 2xcm(A:D) | 2win(L:N) | 2win(B:Q) | 2pa8(D:L) | 2wb1(W:M) | 1xl3(B:D) |
| 4a5u(A:B) | 4hpl(A:B) | 4n6e(A:B) | 3dwg(A:C) | 3dbo(A:B) | 2qar(A:B) | 2rkz(B:N) | 3zrz(A:C) |
| 3cal(A:B) | 3s6n(2:F) | 4f7u(B:F) | 4ggf(K:L) | 3a1p(A:B) | 2rl0(A:G) | 4wxa(B:E) | 4me7(B:E) |
| 4i0x(K:L) | 4a69(A:C) | 3hgk(C:G) | 3aqf(A:B) | 3cxh(S:O) | 4pd4(H:A) | 1kyo(N:S) | 2doq(B:D) |
| 2b7c(A:B) | 4hea(K:N) | 4cxf(A:B) | 2pop(C:D) | 4ayb(K:C) | 2waq(A:K) | 2d1p(H:F) | 1zv8(G:L) |
| 3fav(C:D) | 1im3(E:H) | 1eth(C:D) | 4i0w(A:B) | 3pvl(A:B) | 3oei(B:D) | 3n7s(B:C) | 3mhs(A:B) |
| 4wa6(F:G) | 4fk5(B:E) | 4iit(A:B) | 4m7d(B:C) | 2bh1(A:X) | 1eoj(A:B) | 3s8v(A:X) | 3onl(A:C) |
| 2occ(C:G) | 1ocz(A:T) | 2wjv(B:E) | 2qre(D:E) | 1uw4(C:D) | 1krl(C:D) | 3mn5(A:S) | 3ch5(A:B) |
| 3c01(B:F) | 1gl4(A:B) | 3kse(A:D) | 3k9m(B:D) | 4ml7(D:C) | 4m70(H:B) | 4bx9(A:C) | 4gzr(C:D) |
| 3rvd(D:I) | 2gag(B:D) | 2gag(A:D) | 1mr1(B:C) | 1bcp(G:L) | 1bcp(E:F) | 1prt(H:L) | 4qjv(A:B) |
| 4qiw(I:U) | 4e5x(G:A) | 1t8l(A:B) | 4tpi(Z:I) | 1bth(K:Q) | 3rko(D:G) | 3wbn(A:B) | 3ip4(C:B) |
| 1go4(B:F) | 4je3(A:B) | 4h5s(A:B) | 4aj5(Y:O) | 3w15(A:B) | 3hi2(A:B) | 3f6z(A:B) | 2c5k(P:T) |
| 1smp(A:I) | 2o60(A:B) | 4ay9(D:Y) | 3q4h(A:B) | 1aw8(A:B) | 3plx(A:B) | 3g5o(D:C) | 2v8s(E:V) |
| 2hyb(H:L) | 2hy5(A:C) | 4ht6(E:F) | 1cmi(A:C) | 4ds1(C:D) | 3ia3(C:B) | 4s20(C:L) | 4j9z(B:R) |
| 4s20(I:K) | 4kzz(F:c) | 4lws(B:A) | 4kp3(A:C) | 4hrn(A:D) | 3ge3(A:E) | 3cfi(D:E) | 3cf5(N:O) |
| 4wwt(T:U) | 3aeg(B:D) | 1yq4(C:D) | 1tbq(K:S) | 2f3c(E:I) | 1hbx(B:G) | 4p6i(A:D) | 4owt(A:C) |
| 4hff(A:B) | 4bi8(A:B) | 3lcp(B:D) | 3um3(A:B) | 2w0c(E:R) | 3l3q(A:B) | 2rfk(A:C) | 4hfk(C:D) |
| 4dk6(A:D) | 4dbg(A:B) | 3kf6(A:B) | 1jyo(C:F) | 4i6m(B:C) | 4fxw(C:D) | 4fao(d:b) | 4dey(B:A) |
| 3h7h(A:B) | 3f75(A:P) | 2q0o(A:C) | 1m5n(S:Q) | 3h3g(A:B) | 1r6o(B:D) | 2oxg(Z:Y) | 3zms(A:C) |
| 3cm8(A:B) | 4m78(H:I) | 4m75(A:B) | 4m77(H:N) | 3r0e(A:B) | 3hh2(B:C) | 3sek(B:C) | 3f62(A:B) |
| 2fhz(A:B) | 3w3a(G:H) | 1a6u(L:H) | 3zev(B:D) | 2zsi(A:B) | 3oe0(A:I) | 3kyc(B:D) | 1wyw(A:B) |
| 2io1(A:B) | 1d2z(C:D) | 1bcp(G:K) | 1bcp(H:J) | 4g6v(G:H) | 4g9s(A:B) | 3bcc(C:F) | 3mez(C:D) |
| 1y4h(B:D) | 4mqw(H:Z) | 4umo(A:D) | 4h63(H:K) | 4cgu(A:B) | 2xko(A:D) | 3cxb(A:B) | 2ptt(A:B) |
| 4q9u(E:H) | 3zng(B:A) | 4jgh(D:C) | 1lqb(A:B) | 4jgh(A:C) | 3dcg(B:F) | 4wqo(C:D) | 2izv(A:C) |
| 4b95(B:C) | 2fnj(A:C) | 4p1b(D:H) | 2yvj(A:B) | 4emj(B:A) | 4per(A:B) | 4ng2(I:C) | 4mcx(E:F) |
| 4gn4(B:A) | 4dex(A:B) | 4dxe(F:L) | 2gh0(D:B) | 1h5b(A:B) | 2v5h(F:J) | 4nzl(A:B) | 3sic(E:I) |
| 4hx3(G:H) | 4gnx(X:Y) | 3u28(A:C) | 4bv4(R:M) | 3n1f(B:C) | 1spp(A:B) | 4noo(A:B) | 4b1z(N:F) |
| 3tbi(A:B) | 3lk3(A:T) | 2wu2(K:L) | 3p8c(A:F) | 4u4c(A:B) | 3nmz(A:C) | 3ccr(A:Z) | 2otl(A:Z) |
| 3a0r(A:B) | 2zyz(C:D) | 4u7i(B:A) | 3o5t(A:B) | 2b0u(A:D) | 1s4y(C:D) | 3b4v(F:G) | 2avu(B:E) |
| 4es4(E:F) | 4oyd(A:B) | 4f52(D:F) | 3tl8(G:K) | 3swn(A:C) | 4c92(D:G) | 2p2c(F:R) | 3udw(A:C) |
| 3f1p(A:B) | 4fou(C:A) | 2v9t(A:B) | 1nbw(A:B) | 1kb5(A:B) | 1nam(A:B) | 2ol3(A:B) | 3dga(A:C) |
| 4oe8(B:C) | 4ekx(C:D) | 3es6(A:B) | 3s6n(2:B) | 4pjo(D:K) | 4pjo(C:D) | 1y75(A:B) | 4hzb(D:F) |
| 4hea(6:A) | 4cc9(B:C) | 2vus(B:J) | 3va2(A:C) | 3rui(A:B) | 4xc2(C:G) | 3fie(A:C) | 1sfc(A:D) |
| 2icf(S:A) | 2d1p(A:B) | 1til(C:D) | 3p4p(B:D) | 4f7u(A:P) | 4eyy(R:Q) | 3vhx(B:A) | 4dfc(A:B) |
| 3wdg(A:B) | 2czv(B:D) | 1zc3(A:D) | 1toc(F:T) | 2nvy(A:K) | 1cd3(F:B) | 4ux3(A:B) | 4hre(E:A) |
| 4h62(V:Q) | 3r84(U:V) | 1dx5(K:O) | 4mli(C:D) | 2xqb(A:H) | 4puf(B:D) | 2rii(X:B) | 1w1w(A:E) |
| 4wsf(A:B) | 4c92(A:D) | 4joi(B:C) | 3whl(C:D) | 4jas(A:B) | 4nge(A:B) | 2g47(B:D) | 3dxc(A:B) |
| 2aw2(A:B) | 4gq6(A:B) | 4jw3(A:C) | 3lhp(H:S) | 3kf8(C:D) | 3h0g(A:K) | 2zfd(A:B) | 2zae(A:B) |
| 2fu5(A:D) | 4guu(A:B) | 4fao(M:Q) | 3u43(A:B) | 3nyb(A:B) | 2hsn(A:B) | 4pj2(D:A) | 1xkp(A:B) |
| 1xkp(B:C) | 1xoc(A:B) | 4c2m(B:I) | 3beg(A:B) | 1nmu(C:B) | 3iec(B:F) | 3h0g(A:H) | 2pms(A:C) |
| 3vfs(A:C) | 2d0p(C:D) | 4nc2(A:B) | 4bst(B:D) | 4kng(M:E) | 4cdk(C:G) | 3lb8(B:D) | 4pjo(A:K) |
| 4pjo(A:B) | 1iak(B:P) | 2iyb(A:E) | 2h3n(A:B) | 2dd4(J:L) | 2dd4(J:K) | 3m7f(A:B) | 1w8x(N:L) |
| 1o7d(A:E) | 4kt5(A:C) | 3ong(D:A) | 2qkl(A:B) | 4kjy(C:D) | 4pd4(G:C) | 1s3s(F:G) | 3ezq(G:H) |
| 1qav(A:B) | 2i25(N:L) | 2z8v(B:C) | 4hgk(B:C) | 3i7k(A:B) | 3owt(A:C) | 3me0(A:B) | 4bsv(B:A) |
| 2byk(C:D) | 1nf3(A:C) | 1zav(A:V) | 4w78(E:F) | 4acv(A:B) | 2occ(P:S) | 1v55(N:S) | 2q97(A:T) |
| 2fug(U:Z) | 3ias(B:H) | 2wu2(B:C) | 4nn5(A:C) | 4axg(C:A) | 2j04(C:D) | 3of6(B:E) | 2y9m(A:B) |
| 2x4y(E:F) | 3pla(B:D) | 1yjw(F:M) | 2e1m(A:B) | 3lvl(B:A) | 1tdq(A:B) | 1kf6(N:O) | 3k1i(A:D) |
| 2zl1(A:B) | 2vyr(F:B) | 1ycr(A:B) | 3e1z(A:B) | 3cbk(A:B) | 4hea(X:D) | 4hea(X:F) | 1sb2(A:B) |
| 4n6o(A:B) | 4f0a(A:B) | 3n9y(A:C) | 3bpo(A:C) | 3lb6(A:C) | 2wb1(A:G) | 3q15(A:C) | 2ftk(B:F) |
| 2v4j(D:F) | 4kzz(O:a) | 4iz5(C:F) | 3rep(A:B) | 2nvy(B:I) | 3s15(A:I) | 1tx6(C:J) | 1nbu(A:D) |
| 4j2j(B:E) | 3bpn(A:C) | 1iar(A:B) | 4ydy(A:I) | 4llo(E:F) | 3p9w(E:F) | 1cz8(W:H) | 1kmi(Y:Z) |
| 3bp5(A:B) | 3bik(A:B) | 3tgx(F:E) | 4b6h(A:C) | 2cg9(A:X) | 1zbd(A:B) | 4i9x(B:C) | 4n90(B:S) |
| 2zmz(A:B) | 4pbu(U:V) | 2r25(A:B) | 2zjp(H:M) | 3bx7(C:A) | 4h63(F:V) | 4h63(H:V) | 4c5g(A:B) |
| 3jqo(M:N) | 4xlw(E:F) | 2fm8(A:C) | 2ok6(D:B) | 2j57(I:K) | 3nh7(H:A) | 2goo(D:E) | 3fzh(A:B) |
| 3fub(A:B) | 4hj0(A:P) | 4gop(Y:Z) | 4b0m(M:A) | 3sip(F:B) | 1z92(A:B) | 3kbh(B:F) | 3gpr(A:C) |
| 2wnv(D:F) | 2wnv(A:B) | 2hy5(A:B) | 3ech(B:C) | 3a7a(A:B) | 1gpq(A:D) | 2bex(A:C) | 3mkb(A:B) |
| 1gcv(A:B) | 1bui(A:C) | 3ol2(A:B) | 4kt3(A:B) | 1aok(A:B) | 4c3i(D:G) | 3so6(A:Q) | 3tpq(A:M) |
| 3tpm(B:A) | 2oox(C:E) | 1uuz(A:D) | 3jvf(B:C) | 1i9c(C:D) | 4u1e(G:I) | 4g7x(A:B) | 2w8b(F:G) |
| 3gli(G:P) | 3sxu(A:B) | 1n12(A:B) | 1n0l(A:B) | 1jat(A:B) | 2oz1(A:B) | 2yc4(B:D) | 1u6h(A:B) |
| 4bmo(A:B) | 1bxn(A:I) | 4e45(E:C) | 4cwu(G:Q) | 3iab(A:B) | 2ozn(A:B) | 2zfo(A:D) | 1ee4(A:C) |
| 3fey(A:C) | 1qgr(A:B) | 4bqk(A:D) | 4gf3(A:B) | 4r40(A:B) | 3wof(Q:R) | 4uf0(A:B) | 4qtu(D:C) |
| 1yq4(C:B) | 1i3o(D:F) | 1cg8(A:B) | 4kzx(A:R) | 4ium(A:B) | 4iop(A:B) | 4giz(A:C) | 4c3j(A:K) |
| 3a8y(B:D) | 2pbd(A:P) | 2pi2(B:F) | 2j3w(F:C) | 4ioc(J:S) | 4wwt(P:Z) | 1avg(H:I) | 3m6m(B:E) |
| 3bl2(A:C) | 3a4u(A:B) | 4ycg(B:D) | 1xkp(A:C) | 3jwn(M:N) | 3bfq(G:F) | 3jwn(L:M) | 2co1(A:B) |
| 2cny(A:B) | 2cnz(A:B) | 2co2(A:B) | 2co6(A:B) | 4rku(B:H) | 4rku(H:L) | 3bzo(A:B) | 1a4y(A:B) |
| 2nz0(A:B) | 4b2t(b:e) | 4b2t(B:D) | 4g8a(D:B) | 2zfo(B:C) | 3tm7(A:B) | 4cry(A:G) | 3ktr(A:B) |
| 2jby(A:B) | 2j3t(A:C) | 2j3t(C:D) | 3laq(A:U) | 4rv2(A:B) | 4jde(A:B) | 3ulq(A:B) | 3cxh(F:D) |
| 1uex(B:C) | 2xze(A:Q) | 4mzl(A:C) | 3cw2(E:M) | 2hey(F:R) | 2h1c(A:B) | 4c3i(A:H) | 2nvy(A:H) |
| 3aqb(C:D) | 3m18(A:B) | 4u3x(A:B) | 1jtt(A:L) | 1dzb(A:X) | 3otp(C:I) | 3g3a(E:F) | 1abw(A:D) |
| 4ij2(B:E) | 4f4o(K:L) | 3wqb(A:B) | 3gn4(A:B) | 4niy(A:E) | 1xx9(B:D) | 1p0s(H:E) | 4iw4(D:F) |
| 1id5(H:I) | 1azz(B:D) | 1fi8(B:E) | 1ezs(A:D) | 2w07(A:B) | 2w56(A:B) | 2dcu(A:B) | 1m46(A:B) |
| 4kzz(F:Q) | 3kys(A:B) | 3wcu(A:D) | 2zzp(A:B) | 3q9n(A:C) | 2xgy(A:B) | 3i7n(A:B) | 2puq(L:T) |
| 1p5u(B:C) | 2hyi(G:I) | 2x1g(D:G) | 4lad(A:B) | 4kfz(C:A) | 2xjz(D:L) | 4day(A:B) | 3b9k(A:B) |
| 2y9w(B:D) | 3enh(B:C) | 2ast(B:C) | 4pra(A:C) | 4iyp(A:C) | 4c6t(B:A) | 3t6q(A:C) | 4kzy(B:O) |
| 4cvn(B:E) | 2z5b(A:B) | 2vn6(A:B) | 1x9f(I:L) | 2xqr(E:F) | 3q1s(H:I) | 3g9v(C:D) | 3dlq(I:R) |
| 2p9s(C:G) | 4jd2(F:G) | 2ch4(A:W) | 1s6b(A:B) | 1aro(P:L) | 4did(A:B) | 3h6s(B:F) | 3dwl(F:G) |
| 2dyo(A:B) | 1v54(Q:R) | 2pt7(D:H) | 3vx7(A:B) | 2c35(H:G) | 1ksh(A:B) | 4jhp(B:C) | 4dzu(A:B) |
| 4euk(A:B) | 4n7s(C:D) | 3n3b(B:C) | 3iey(A:B) | 2zet(A:C) | 1xg2(A:B) | 1at1(A:B) | 4kzz(P:S) |
| 3nv0(A:B) | 3di2(C:D) | 2eqb(A:B) | 4jd2(B:H) | 4qpl(D:C) | 4ntq(A:B) | 2xyq(B:A) | 3ejj(A:X) |
| 3l4b(B:D) | 3c7k(C:D) | 2p22(A:B) | 4lw4(A:C) | 4c2m(V:U) | 4qiw(M:T) | 4qiw(I:T) | 3ojm(A:B) |
| 3vr9(F:H) | 3thm(H:F) | 1c4z(A:D) | 1fbv(A:C) | 1kx5(E:C) | 3gmw(A:B) | 2hmh(A:B) | 1tyg(B:A) |
| 1n54(A:B) | 1bi7(A:B) | 4mxw(X:Y) | 4i6m(B:D) | 4dx8(B:H) | 3ul4(A:B) | 3hzh(A:B) | 4l0p(B:A) |
| 1pdk(A:B) | 1lqs(R:L) | 2gtl(F:N) | 1x9f(J:K) | 2gtl(J:O) | 2gtl(B:M) | 3tg1(A:B) | 4b2t(q:z) |
| 4b2t(G:Z) | 3wo3(B:A) | 4hjj(A:H) | 2wy3(A:B) | 2p7v(A:B) | 2p5t(E:F) | 1nrj(A:B) | 4p1w(C:B) |
| 3pn7(A:C) | 3cue(I:K) | 3cue(S:U) | 2j7a(B:C) | 2f9z(A:C) | 1o7d(C:D) | 1o7d(A:C) | 4doh(C:D) |
| 4doh(A:R) | 4n0i(F:B) | 3zgx(A:C) | 3fks(G:H) | 2xok(G:H) | 2adv(B:C) | 4h44(C:B) | 1nu2(A:B) |
| 3tu3(B:A) | 1qvi(A:Y) | 3lbx(A:B) | 3l51(A:B) | 3it8(I:L) | 3alq(D:U) | 3l9j(C:T) | 2voh(A:B) |
| 3i1h(A:B) | 2voi(A:B) | 4r3u(A:C) | 4kc3(A:B) | 4po5(D:C) | 1j7v(L:R) | 4eig(B:A) | 4m62(I:T) |
| 2xt9(A:B) | 3zir(A:B) | 4b2t(A:h) | 4b2t(E:H) | 4b2t(H:Q) | 2bv8(O:P) | 3p8b(A:B) | 3ddc(A:B) |
| 3ci0(J:K) | 2f95(A:B) | 4q54(c:v) | 1vit(H:I) | 3phx(A:B) | 3pbp(D:E) | 2qkw(A:B) | 3bim(D:K) |
| 2fdb(M:P) | 4gl9(C:G) | 1npe(A:B) | 2ysu(A:B) | 1eyx(A:B) | 4kt0(F:B) | 1ory(A:B) | 4bd9(B:A) |
| 3t12(C:A) | 3doe(A:B) | 1rkc(A:B) | 3n4i(A:B) | 3c7v(A:B) | 3e2l(A:C) | 4c0d(A:C) | 3c6e(A:C) |
| 1nez(H:A) | 4pro(A:C) | 3daw(A:B) | 3cf5(B:M) | 4wwt(C:S) | 3wcy(I:A) | 4rsu(K:I) | 3puf(D:F) |
| 4rku(B:G) | 1zkk(B:F) | 1jma(B:A) | 3u9t(B:A) | 4qd2(G:F) | 2wss(G:H) | 2j59(D:P) | 1t3q(A:C) |
| 1n62(A:C) | 2p9k(C:F) | 3dwl(H:K) | 3dxm(B:F) | 1g3n(A:B) | 1bi8(A:B) | 2eim(N:Q) | 1ocz(O:Q) |
| 3wso(B:A) | 3l2o(A:B) | 1ldk(A:D) | 4i6j(B:C) | 1p22(A:B) | 2ovp(A:B) | 3v7d(A:B) | 2p1p(A:B) |
| 2ybf(A:B) | 3wtx(B:A) | 3oak(A:D) | 2gk1(E:F) | 2yjt(A:D) | 4orh(I:J) | 1usv(C:D) | 1xmg(C:E) |
| 3l6y(C:D) | 4dep(D:F) | 4g6j(A:H) | 3buk(B:C) | 3anw(A:B) | 1x3z(A:B) | 2qsf(A:X) | 3qbq(C:D) |
| 4giq(A:R) | 4uqz(A:B) | 3mjg(B:X) | 3gcg(A:B) | 3qbr(A:B) | 2b24(E:F) | 1gzs(A:B) | 4gsk(A:Z) |
| 4b2t(A:D) | 4b2t(a:g) | 3zn6(A:B) | 2xpx(A:B) | 3fn1(A:B) | 4kzy(I:L) | 4eba(C:H) | 1gh6(A:B) |
| 2pf4(C:G) | 2ckf(A:B) | 1gka(A:B) | 3vrd(A:B) | 2uyz(A:B) | 2xwu(A:B) | 3alz(A:B) | 3cfi(E:F) |
| 4ezm(F:L) | 4j2y(A:B) | 4he8(H:J) | 4hea(R:V) | 2zme(A:C) | 2zme(B:D) | 1a9n(C:D) | 4iqj(A:M) |
| 4g6u(B:A) | 3ux9(A:B) | 3se4(A:B) | 3se4(B:C) | 2f49(A:C) | 4apj(A:P) | 4nrh(A:D) | 4hwi(A:B) |
| 3ogk(B:Q) | 2w1t(A:B) | 4b2t(D:e) | 4jd2(A:E) | 1cd9(A:B) | 4clc(A:B) | 2hqw(A:B) | 3gty(X:S) |
| 3jwn(C:E) | 2ba1(B:E) | 1jfi(B:C) | 1f3v(A:B) | 4wj7(B:X) | 3wkm(M:B) | 3wkm(I:B) | 2z7x(A:B) |
| 3nqz(A:B) | 2q7n(A:B) | 3ma2(A:B) | 2efc(A:B) | 4hlq(B:A) | 4q9u(A:B) | 4fme(A:B) | 3jza(A:B) |
| 4fmb(A:B) | 4kyi(H:G) | 3axy(A:C) | 1l1o(B:C) | 4p3y(A:B) | 4faj(A:B) | 3czu(A:B) | 3kas(A:B) |
| 5ajk(A:B) | 5ajj(A:B) | 3aad(A:D) | 2ygv(C:G) | 2hue(A:B) | 4hea(9:H) | 4hea(9:4) | 4hea(G:Q) |
| 4hea(G:E) | 4kzz(D:K) | 4h63(F:Q) | 4bos(A:C) | 2vsm(A:B) | 4jbw(C:P) | 3our(D:C) | 3al8(A:B) |
| 3w6k(C:A) | 4auo(C:D) | 3rko(N:J) | 2qos(C:A) | 4dwh(C:D) | 4iru(E:F) | 2i9l(F:K) | 4u6h(A:E) |
| 4an7(A:B) | 3x29(D:C) | 3tmp(E:F) | 3e8l(B:C) | 1z7k(A:B) | 1yu6(A:C) | 4bvx(B:A) | 3ajv(C:D) |
| 2f2f(E:F) | 2f2f(A:C) | 3r08(H:E) | 1p9m(B:C) | 4j4l(C:A) | 1p9m(A:B) | 4wwa(A:B) | 2znv(D:E) |
| 4kt6(D:C) | 3pnr(A:B) | 2wg3(A:C) | 2gia(A:D) | 2qjy(A:F) | 3kcp(A:B) | 3veq(B:A) | 3i29(A:B) |
| 3tkn(D:F) | 4fgi(A:B) | 3soh(C:D) | 3sws(A:C) | 4fa9(E:F) | 3en1(A:B) | 2j3r(A:B) | 2yq7(B:A) |
| 3pl7(A:C) | 3r85(C:G) | 4k5b(A:D) | 1y8x(A:B) | 4p5o(I:K) | 3b5n(A:B) | 3zni(G:H) | 4fbj(A:B) |
| 4f8c(A:B) | 4hcn(A:B) | 4ldt(A:B) | 3vht(B:C) | 3znz(A:B) | 4wur(A:B) | 4m0w(A:B) | 4uf6(B:A) |
| 3dqv(A:C) | 3n3k(B:A) | 4ddi(A:D) | 4bbn(A:C) | 3u30(C:A) | 2nvu(B:I) | 3dbh(B:I) | 3mhs(A:D) |
| 4nqk(C:H) | 1nbf(B:C) | 4ii2(A:B) | 3o65(E:F) | 4bvu(A:C) | 1xt9(A:B) | 3znh(A:B) | 4msq(A:B) |
| 4ljo(A:B) | 2wdt(C:B) | 1cmx(A:B) | 4bpi(A:B) | 3kj1(A:B) | 3kz0(A:C) | 3io9(A:B) | 3mk8(A:B) |
| 3kj2(A:B) | 3pk1(A:B) | 1tzn(K:k) | 1ny7(2:1) | 3uxg(A:B) | 3v31(A:B) | 4qqm(C:D) | 3v30(A:B) |
| 1pua(A:B) | 4dkd(A:C) | 2wss(A:S) | 4jpz(C:B) | 4dck(A:C) | 4n0g(A:C) | 3rt0(A:C) | 3zo0(A:B) |
| 2q9q(E:H) | 4hep(A:G) | 1z6o(G:S) | 3bn3(A:B) | 1d3u(A:B) | 2zne(A:C) | 1bvy(A:F) | 1bp3(A:B) |
| 1a22(A:B) | 3lwn(B:G) | 4bd2(A:C) | 2xa0(B:D) | 2pyo(E:C) | 4u5w(C:D) | 4cwu(B:N) | 4v3d(C:D) |
| 1i7q(C:D) | 4u5y(A:D) | 3uat(A:B) | 4dvg(B:A) | 2bmo(A:B) | 3cki(A:B) | 1bqq(M:T) | 2vpx(F:G) |
| 2vpx(E:F) | 4ra0(B:D) | 1qdl(A:B) | 4i7d(A:B) | 3og6(A:B) | 2e9x(A:C) | 2e9x(A:D) | 3egx(C:B) |
| 4odl(A:D) | 1aip(B:D) | 3tuf(B:A) | 2j1k(Y:N) | 1dkg(A:D) | 4p6v(E:F) | 4p6v(B:E) | 4grw(C:F) |
| 4g6d(A:B) | 1sfc(B:C) | 3rk2(G:H) | 4gh7(A:B) | 4w4l(B:C) | 4m8n(D:H) | 2uzi(H:R) | 4dxa(B:A) |
| 3brw(B:D) | 4mgi(R:E) | 4nym(R:S) | 4jmr(F:B) | 4hi0(A:E) | 3u61(B:A) | 3l0i(C:D) | 3qbt(A:B) |
| 4n6r(B:A) | 4h63(H:R) | 3bx1(A:C) | 1ava(A:C) | 3cue(B:D) | 3cue(M:P) | 1ka9(H:F) | 4qam(B:A) |
| 4ryf(F:J) | 3msx(A:B) | 1q40(A:B) | 4bsz(A:B) | 4bj6(B:C) | 4bj6(C:D) | 1u5t(A:C) | 3ch8(A:P) |
| 2ocf(A:D) | 4ov6(B:F) | 3qwr(A:D) | 4s0t(E:B) | 3uyo(A:D) | 4jeg(A:B) | 4cym(B:E) | 3mk7(E:F) |
| 3mzg(A:B) | 1p1z(A:D) | 2a5y(A:B) | 1fft(F:H) | 4g59(A:C) | 3zr4(D:C) | 3unb(x:y) | 4qlu(K:W) |
| 3unf(I:J) | 5ahj(W:L) | 4ekd(A:B) | 4plo(B:A) | 4hkj(H:E) | 3csn(A:C) | 2a78(A:B) | 4krd(A:B) |
| 3u5o(H:P) | 4hea(5:3) | 3bpl(B:C) | 3bpn(B:C) | 1vg0(A:B) | 4niq(A:C) | 4orz(B:C) | 4en2(B:A) |
| 4lnr(A:C) | 3bxk(C:D) | 2qtv(A:B) | 1unl(A:D) | 3c0t(A:B) | 2zxx(E:F) | 4p6v(D:C) | 4ief(C:D) |
| 3cx8(A:B) | 4hcr(A:H) | 4oww(A:B) | 4bfi(A:B) | 1kiu(M:N) | 1ze3(C:D) | 4lrz(C:G) | 3pnl(A:B) |
| 1rke(A:B) | 1nun(A:B) | 4fqx(A:C) | 1ktk(A:E) | 4iu2(A:B) | 4fq0(B:C) | 4cv5(A:B) | 4fe1(A:D) |
| 1zt2(A:B) | 3eoy(B:H) | 4d18(K:P) | 4ani(A:C) | 3d54(E:H) | 4i1o(H:G) | 4jvs(A:B) | 3tw8(C:D) |
| 3tkl(B:A) | 3cue(M:R) | 2wd5(B:A) | 2qyf(A:E) | 4aez(A:B) | 4aez(E:F) | 2qyf(B:A) | 3ii6(B:X) |
| 3rwr(F:I) | 3vu9(A:B) | 2v55(C:D) | 4imj(A:B) | 4h3k(D:E) | 2wv5(D:H) | 2wv4(A:C) | 4apx(A:B) |
| 1z7n(B:G) | 2ivf(B:C) | 4c2a(A:B) | 4qw3(N:a) | 3bqo(A:B) | 3h0g(M:S) | 3a5z(G:H) | 4hga(A:C) |
| 4f7g(A:B) | 3cwz(A:B) | 3wkr(C:A) | 4ip3(A:B) | 2d11(A:E) | 3r4d(C:D) | 3tj5(A:B) | 2icw(G:J) |
| 1r5i(A:D) | 3ryb(A:B) | 3tuz(A:C) | 3vr6(D:G) | 3vr6(G:C) | 2ns8(A:E) | 4gjt(A:B) | 4u7u(P:U) |
| 3pxi(b:B) | 4cht(A:B) | 3hr4(E:F) | 2nts(P:A) | 1fod(2:3) | 2b9s(A:B) | 1fod(1:3) | 3qaz(i:j) |
| 3aev(A:B) | 1usy(F:D) | 1usy(G:H) | 1hh4(A:D) | 1z6j(L:T) | 4m7l(H:T) | 1uj3(B:C) | 2c4f(T:U) |
| 4ni2(A:B) | 3w31(B:A) | 4lx0(A:B) | 4by1(A:X) | 1wpx(A:B) | 2gvz(B:C) | 1k5g(A:C) | 2x19(A:B) |
| 3icq(T:B) | 3w3z(A:B) | 3wyf(A:B) | 4i18(A:R) | 1euv(A:B) | 1tue(F:G) | 4hnj(A:C) | 4qpg(B:C) |
| 4qpi(B:A) | 4ejx(A:D) | 4f52(A:E) | 4d10(N:O) | 4d10(D:G) | 1sr4(A:B) | 2hye(A:B) | 4i1s(B:A) |
| 3v4v(A:B) | 4aez(A:C) | 3cpj(G:B) | 4d0l(A:D) | 1viw(A:B) | 1dhk(A:B) | 3cjt(E:F) | 4u7u(A:K) |
| 3gfu(D:C) | 4dcn(A:C) | 1i4t(A:D) | 1iwp(A:B) | 3mj7(A:B) | 2j12(A:B) | 3iu3(J:C) | 2bo9(A:B) |
| 1y5l(A:C) | 4m7e(C:A) | 4mn8(A:B) | 2ws9(2:3) | 3kdj(A:B) | 4oic(A:B) | 4ads(E:H) | 2nv2(O:P) |
| 3scj(A:E) | 2ghw(C:D) | 3mml(A:B) | 4jkm(A:D) | 3ma9(A:H) | 4owr(C:A) | 2gkw(A:B) | 1l0a(A:B) |
| 2ij0(A:E) | 4iw3(J:K) | 3t6g(A:B) | 2hdi(A:B) | 3r7g(A:B) | 2grx(A:C) | 2gsk(A:B) | 2ba0(A:D) |
| 1zy8(D:L) | 1ypz(C:G) | 3l4q(A:C) | 1a6v(J:N) | 1sgf(Y:Z) | 2wff(1:2) | 2d07(A:B) | 1re0(A:B) |
| 4xa9(A:a) | 4rku(A:F) | 4cyd(B:F) | 4nik(A:B) | 2dwz(C:D) | 4mrt(C:A) | 3zfw(A:X) | 1ssa(A:B) |
| 4b7e(A:B) | 2uzy(A:B) | 1e8o(A:B) | 4ajy(V:H) | 4dl0(I:E) | 1ee5(A:B) | 4u39(J:A) | 4dlq(A:B) |
| 2ihs(B:D) | 1w7p(A:D) | 1fxw(A:F) | 2bkk(C:D) | 2y1l(E:C) | 4hrl(C:A) | 4jb8(A:P) | 4grg(D:A) |
| 2v5q(A:D) | 2xum(S:A) | 3zu7(A:B) | 4drx(D:E) | 2j8s(B:D) | 4o30(A:C) | 1ucy(N:I) | 1nt2(A:B) |
| 3nmu(B:J) | 3hdi(B:D) | 2jbu(A:C) | 1shy(A:B) | 3i7o(A:B) | 4kbq(A:C) | 4ll8(A:E) | 1t29(A:B) |
| 3bu8(A:C) | 4aph(A:P) | 3ewv(A:E) | 4jjn(F:L) | 4xaj(C:Q) | 2ejg(B:D) | 3tjv(A:B) | 4f1z(A:Q) |
| 4u2x(A:D) | 1d5z(A:C) | 1klg(A:C) | 4may(A:D) | 1fv1(A:C) | 1f3j(D:Q) | 4aen(A:C) | 1uvq(C:A) |
| 3pdo(A:C) | 4p2o(P:A) | 3uvu(A:B) | 1mec(2:3) | 1tme(2:3) | 1ikn(C:D) | 1nfi(C:E) | 2h1l(C:O) |
| 1ycs(A:B) | 3i7p(A:B) | 2o02(A:P) | 2nn6(C:D) | 2nn6(D:G) | 1w36(F:G) | 3qum(P:H) | 3wyf(B:C) |
| 4qlu(X:K) | 3nw0(B:A) | 2iy1(A:B) | 1k9o(I:E) | 3n93(B:C) | 3cji(B:C) | 2xwt(A:C) | 2gtl(N:O) |
| 2izq(C:D) | 2gtl(M:N) | 4goj(D:B) | 3ryf(A:E) | 2p6b(A:E) | 3kdp(C:H) | 4naf(A:B) | 2xwb(F:I) |
| 2v1c(A:C) | 4m63(A:C) | 1n4m(A:C) | 4ika(D:A) | 3ezj(A:B) | 2ybp(B:D) | 4qxc(A:E) | 2bs2(B:C) |
| 4r67(g:f) | 4r67(h:g) | 3unb(Q:R) | 4qv0(V:L) | 4qz1(Z:a) | 4qz6(Z:Y) | 1kkq(A:E) | 2ggm(A:C) |
| 2hj9(A:C) | 3rz9(A:B) | 3nk4(A:C) | 1jky(A:B) | 3vlb(C:D) | 2whx(A:C) |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| LR table for patch-based score | | | |
| Bin number | Range to | Range from | LR |
| 1 | 22.000 | 20.429 | 3.083 |
| 2 | 20.429 | 18.857 | 9.249 |
| 3 | 18.857 | 17.286 | 16.956 |
| 4 | 17.286 | 15.714 | 13.873 |
| 5 | 15.714 | 14.143 | 11.694 |
| 6 | 14.143 | 12.571 | 8.237 |
| 7 | 12.571 | 11.000 | 6.301 |
| 8 | 11.000 | 9.429 | 5.472 |
| 9 | 9.429 | 7.857 | 3.760 |
| 10 | 7.857 | 6.286 | 3.515 |
| 11 | 6.286 | 4.714 | 2.515 |
| 12 | 4.714 | 3.143 | 1.949 |
| 13 | 3.143 | 1.571 | 1.500 |
| 14 | 1.571 | 0.000 | 0.001 |
| LR table for PredUs score | | | |
| Bin number | Range to | Range from | LR |
| 1 | 6.919 | 5.954 | 1.475 |
| 2 | 5.954 | 4.990 | 6.885 |
| 3 | 4.990 | 4.025 | 4.507 |
| 4 | 4.025 | 3.061 | 3.116 |
| 5 | 3.061 | 2.096 | 3.782 |
| 6 | 2.096 | 1.132 | 3.307 |
| 7 | 1.132 | 0.167 | 1.993 |
| 8 | 0.167 | -0.797 | 0.728 |
| 9 | -0.797 | -1.761 | 0.266 |
| 10 | -1.761 | -2.726 | 0.001 |

**Table S4. Bins and LRs for patch-based score and PredUs score.**