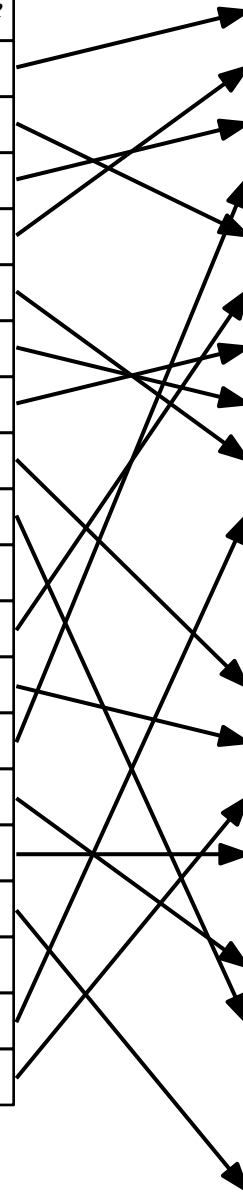


| #  | Keywords                  | Number of proteins | Number of families | Average sequence length | Z-score | P-value |
|----|---------------------------|--------------------|--------------------|-------------------------|---------|---------|
| 1  | Oxidoreductase            | 14995              | 992                | 376.63                  | -29.54  | 0       |
| 2  | Transferase               | 26525              | 1606               | 445.17                  | -24.25  | 0       |
| 3  | Lyase                     | 7262               | 347                | 377.92                  | -22.64  | 0       |
| 4  | Hydrolase                 | 20464              | 1995               | 430.68                  | -21.75  | 0       |
| 5  | Isomerase                 | 4487               | 220                | 383.98                  | -14.18  | 0       |
| 6  | Glycosidase               | 1826               | 244                | 444.73                  | -13.98  | 0       |
| 7  | Glycosyltransferase       | 2950               | 261                | 437.53                  | -12.51  | 0       |
| 8  | Acyltransferase           | 2239               | 179                | 402.83                  | -10.85  | 0       |
| 9  | Methyltransferase         | 3524               | 224                | 349.60                  | -10.53  | 0       |
| 10 | Kinase                    | 7017               | 322                | 448.29                  | -10.22  | 0       |
| 11 | Ligase                    | 8010               | 230                | 529.41                  | -10.06  | 0       |
| 12 | Decarboxylase             | 1293               | 63                 | 345.26                  | -9.66   | 0       |
| 13 | Monooxygenase             | 1668               | 73                 | 444.87                  | -9.26   | 0       |
| 14 | Metalloprotease           | 1100               | 109                | 553.73                  | -7.89   | 0       |
| 15 | Aminopeptidase            | 452                | 39                 | 509.17                  | -7.55   | 0       |
| 16 | Dioxygenase               | 360                | 66                 | 433.20                  | -7.32   | 0       |
| 17 | Aminoacyl-tRNA synthetase | 3402               | 37                 | 571.83                  | -7.15   | 0       |
| 18 | Protease                  | 4423               | 380                | 549.70                  | -7.1    | 0       |
| 19 | Aminotransferase          | 955                | 28                 | 420.27                  | -6.02   | 0       |



| #  | name                       | n    | avg_len | avg_dis | z      | p |
|----|----------------------------|------|---------|---------|--------|---|
| 1  | Oxidoreductase             | 4126 | 472.25  | 0.28    | -41.35 | 0 |
| 2  | Hydrolase                  | 7564 | 614.81  | 0.51    | -26.99 | 0 |
| 3  | Lyase                      | 1431 | 481.37  | 0.30    | -23.62 | 0 |
| 4  | Monooxygenase              | 555  | 503.36  | 0.20    | -20.29 | 0 |
| 5  | Transferase                | 8846 | 631.95  | 0.55    | -19.72 | 0 |
| 6  | Ligase                     | 995  | 693.30  | 0.46    | -18.05 | 0 |
| 7  | Glycosyltransferase        | 1134 | 551.26  | 0.40    | -17.04 | 0 |
| 8  | Glycosidase                | 697  | 570.50  | 0.37    | -16.81 | 0 |
| 9  | Isomerase                  | 931  | 422.72  | 0.35    | -13.60 | 0 |
| 10 | Protease                   | 1863 | 674.42  | 0.54    | -13.20 | 0 |
| 11 | Transducer                 | 1703 | 482.28  | 0.41    | -12.56 | 0 |
| 12 | G-protein coupled receptor | 1385 | 465.62  | 0.39    | -12.45 | 0 |
| 13 | Acyltransferase            | 867  | 531.58  | 0.42    | -11.28 | 0 |
| 14 | Decarboxylase              | 195  | 488.21  | 0.25    | -10.70 | 0 |
| 15 | Aminotransferase           | 202  | 451.05  | 0.24    | -10.23 | 0 |
| 16 | Aminopeptidase             | 130  | 668.72  | 0.37    | -9.10  | 0 |
| 17 | Serine protease            | 460  | 700.07  | 0.50    | -8.87  | 0 |
| 18 | Metalloprotease            | 507  | 688.25  | 0.56    | -8.43  | 0 |
| 19 | Methyltransferase          | 874  | 611.22  | 0.47    | -8.33  | 0 |
| 20 | Carboxypeptidase           | 116  | 631.16  | 0.37    | -8.25  | 0 |
| 21 | Threonine protease         | 138  | 246.88  | 0.18    | -7.50  | 0 |
| 22 | Dioxygenase                | 366  | 622.32  | 0.48    | -7.39  | 0 |