|  |  |  |
| --- | --- | --- |
|  |  | p-value\* |
| **Protein classes****in backbone** | Fraction of nodes reached | Excludingchordate-specificproteins | Excludinganimal-specificproteins | Excludingopisthokontspecificproteins | Excludingpre-opisthokontproteins |
| **Orthologs generated using CCAlign, CCAlignX and BLAST** |
| all proteins | 100% | 0.931 | 0.597 | **0.030** | 0.060 |
|  |  |  |  |  |  |
| enzyme | 35% | 0.466 | 0.575 | 0.355 | 0.471 |
| kinase & phosphatase | 66% | 0.668 | 0.330 | 0.387 | 0.424 |
| motor & cytoskeleton | 29% | 0.614 | 0.541 | 0.564 | 0.556 |
| other | 74% | 0.822 | 0.527 | **0.015** | **0.031** |
| regulation & TF | 52% | 0.888 | 0.653 | 0.083 | 0.140 |
| coiled-coil  | 35% | 0.172 | **0.038** | **0.005** | **0.005** |
|  |  |  |  |  |  |
| enzyme & other | 90% | 0.894 | 0.642 | **0.020** | 0.049 |
| kinase & phosphatase & other | 95% | 0.829 | 0.604 | 0.097 | 0.137 |
| motor & cytoskeleton & other | 88% | 0.792 | 0.587 | **0.027** | 0.067 |
| regulation & TF & other | 86% | 0.940 | 0.705 | **0.024** | 0.052 |
| coiled-coil & other | 96% | 0.624 | 0.367 | **0.007** | **0.017** |
| **Orthologs generated using only BLAST** |
| all proteins | 100% | 0.911 | 0.668 | 0.469 | 0.184 |
|  |  |  |  |  |  |
| enzyme | 35% | 0.476 | 0.578 | 0.554 | 0.470 |
| kinase & phosphatase | 66% | 0.714 | 0.342 | 0.407 | 0.384 |
| motor & cytoskeleton | 29% | 0.529 | 0.568 | 0.571 | 0.653 |
| other | 74% | 0.558 | 0.399 | 0.257 | 0.061 |
| regulation & TF | 52% | 0.827 | 0.760 | 0.387 | 0.303 |
| coiled-coil  | 35% | 0.177 | 0.057 | **0.044** | **0.006** |
|  |  |  |  |  |  |
| enzyme & other | 90% | 0.704 | 0.564 | 0.321 | 0.083 |
| kinase & phosphatase & other | 95% | 0.821 | 0.530 | 0.372 | 0.208 |
| motor & cytoskeleton & other | 88% | 0.548 | 0.456 | 0.370 | 0.130 |
| regulation & TF & other | 86% | 0.948 | 0.859 | 0.373 | 0.158 |
| coiled-coil & other | 96% | 0.492 | 0.316 | 0.281 | **0.029** |

\* P-values are calculating by shuffling the evolutionary age 10,000 times.