

# A

| Protein complex | Ontology type      | GO Term                                                    | GO ID      | N    | M   | n  | m  | P-value  |
|-----------------|--------------------|------------------------------------------------------------|------------|------|-----|----|----|----------|
| Arp2-3          | molecular function | structural molecule activity                               | GO:0005198 | 6268 | 326 | 6  | 5  | 2.12E-06 |
| Arp2-3          | molecular function | structural constituent of cytoskeleton                     | GO:0005200 | 6268 | 56  | 6  | 3  | 1.33E-05 |
| Arp2-3          | cellular component | Arp2/3 protein complex                                     | GO:0005885 | 5334 | 4   | 6  | 4  | 4.45E-13 |
| Arp2-3          | cellular component | cytoskeleton                                               | GO:0005856 | 5334 | 395 | 6  | 6  | 1.59E-07 |
| Arp2-3          | cellular component | non-membrane-bound organelle                               | GO:0043228 | 5334 | 647 | 6  | 6  | 3.12E-06 |
| Arp2-3          | cellular component | intracellular non-membrane-bound organelle                 | GO:0043232 | 5334 | 647 | 6  | 6  | 3.12E-06 |
| Arp2-3          | cellular component | actin cytoskeleton                                         | GO:0015629 | 5334 | 121 | 6  | 4  | 3.65E-06 |
| Arp2-3          | biological process | actin filament polymerization                              | GO:0030041 | 5847 | 13  | 5  | 4  | 7.34E-11 |
| Arp2-3          | biological process | protein polymerization                                     | GO:0051258 | 5847 | 26  | 5  | 4  | 1.53E-09 |
| Arp2-3          | biological process | actin polymerization and/or depolymerization               | GO:0008154 | 5847 | 31  | 5  | 4  | 3.22E-09 |
| Arp2-3          | biological process | regulation of actin filament polymerization                | GO:0030833 | 5847 | 6   | 5  | 3  | 6.00E-09 |
| Arp2-3          | biological process | actin cytoskeleton organization and biogenesis             | GO:0030036 | 5847 | 76  | 5  | 4  | 1.31E-07 |
| Arp2-3          | biological process | actin filament-based process                               | GO:0030029 | 5847 | 84  | 5  | 4  | 1.96E-07 |
| Arp2-3          | biological process | regulation of actin polymerization and/or depolymerization | GO:0008064 | 5847 | 22  | 5  | 3  | 4.60E-07 |
| Arp2-3          | biological process | regulation of actin filament length                        | GO:0030832 | 5847 | 22  | 5  | 3  | 4.60E-07 |
| Arp2-3          | biological process | cell motility                                              | GO:0006928 | 5847 | 117 | 5  | 4  | 7.50E-07 |
| Arp2-3          | biological process | regulation of cell organization and biogenesis             | GO:0051128 | 5847 | 30  | 5  | 3  | 1.21E-06 |
| Arp2-3          | biological process | regulation of protein metabolism                           | GO:0051246 | 5847 | 53  | 5  | 3  | 6.95E-06 |
| Arp2-3          | biological process | cytoskeleton organization and biogenesis                   | GO:0007010 | 5847 | 208 | 5  | 4  | 7.57E-06 |
| APC             | cellular component | nuclear ubiquitin ligase complex                           | GO:0000152 | 5334 | 6   | 4  | 3  | 3.16E-09 |
| APC             | cellular component | anaphase-promoting complex                                 | GO:0005680 | 5334 | 6   | 4  | 3  | 3.16E-09 |
| APC             | biological process | mitosis                                                    | GO:0007067 | 5847 | 87  | 5  | 5  | 6.50E-10 |
| APC             | biological process | M phase of mitotic cell cycle                              | GO:0000087 | 5847 | 89  | 5  | 5  | 7.30E-10 |
| APC             | biological process | M phase                                                    | GO:0000279 | 5847 | 108 | 5  | 5  | 1.96E-09 |
| APC             | biological process | mitotic cell cycle                                         | GO:0000278 | 5847 | 135 | 5  | 5  | 6.10E-09 |
| APC             | biological process | cell division                                              | GO:0051301 | 5847 | 95  | 5  | 4  | 3.23E-07 |
| APC             | biological process | cell cycle                                                 | GO:0007049 | 5847 | 405 | 5  | 5  | 1.56E-06 |
| APC             | biological process | mitotic metaphase/anaphase transition                      | GO:0007091 | 5847 | 3   | 5  | 2  | 1.75E-06 |
| APC             | biological process | regulation of cell cycle                                   | GO:0000074 | 5847 | 265 | 5  | 4  | 1.99E-05 |
| APC             | biological process | ubiquitin cycle                                            | GO:0006512 | 5847 | 324 | 5  | 4  | 4.43E-05 |
| Centrosome      | molecular function | motor activity                                             | GO:0003774 | 6268 | 76  | 32 | 6  | 1.84E-06 |
| Centrosome      | cellular component | microtubule cytoskeleton                                   | GO:0015630 | 5334 | 130 | 29 | 20 | 1.02E-26 |
| Centrosome      | cellular component | cytoskeleton                                               | GO:0005856 | 5334 | 395 | 29 | 22 | 7.45E-20 |
| Centrosome      | cellular component | microtubule organizing center                              | GO:0005815 | 5334 | 34  | 29 | 11 | 3.74E-18 |
| Centrosome      | cellular component | spindle                                                    | GO:0005819 | 5334 | 44  | 29 | 11 | 9.71E-17 |
| Centrosome      | cellular component | microtubule                                                | GO:0005874 | 5334 | 91  | 29 | 13 | 2.33E-16 |
| Centrosome      | cellular component | centrosome                                                 | GO:0005813 | 5334 | 32  | 29 | 10 | 2.36E-16 |
| Centrosome      | cellular component | spindle pole                                               | GO:0000922 | 5334 | 36  | 29 | 10 | 9.18E-16 |
| Centrosome      | cellular component | non-membrane-bound organelle                               | GO:0043228 | 5334 | 647 | 29 | 22 | 3.45E-15 |

| Protein complex | Ontology type      | GO Term                                                 | GO ID      | N    | M   | n  | m  | P-value  |
|-----------------|--------------------|---------------------------------------------------------|------------|------|-----|----|----|----------|
| Centrosome      | cellular component | intracellular non-membrane-bound organelle              | GO:0043232 | 5334 | 647 | 29 | 22 | 3.45E-15 |
| Centrosome      | cellular component | dynein complex                                          | GO:0030286 | 5334 | 12  | 29 | 5  | 2.55E-09 |
| Centrosome      | cellular component | microtubule associated complex                          | GO:0005875 | 5334 | 52  | 29 | 7  | 7.30E-09 |
| Centrosome      | cellular component | cAMP-dependent protein kinase complex                   | GO:0005952 | 5334 | 5   | 29 | 3  | 1.43E-06 |
| Centrosome      | cellular component | spindle microtubule                                     | GO:0005876 | 5334 | 7   | 29 | 3  | 4.99E-06 |
| Centrosome      | cellular component | centriole                                               | GO:0005814 | 5334 | 3   | 29 | 2  | 8.53E-05 |
| Centrosome      | cellular component | polar microtubule                                       | GO:0005827 | 5334 | 3   | 29 | 2  | 8.53E-05 |
| Centrosome      | biological process | microtubule-based process                               | GO:0007017 | 5847 | 85  | 26 | 11 | 2.04E-14 |
| Centrosome      | biological process | mitosis                                                 | GO:0007067 | 5847 | 87  | 26 | 10 | 1.37E-12 |
| Centrosome      | biological process | M phase of mitotic cell cycle                           | GO:0000087 | 5847 | 89  | 26 | 10 | 1.73E-12 |
| Centrosome      | biological process | mitotic cell cycle                                      | GO:0000278 | 5847 | 135 | 26 | 11 | 3.80E-12 |
| Centrosome      | biological process | M phase                                                 | GO:0000279 | 5847 | 108 | 26 | 10 | 1.26E-11 |
| Centrosome      | biological process | cytoskeleton organization and biogenesis                | GO:0007010 | 5847 | 208 | 26 | 12 | 1.87E-11 |
| Centrosome      | biological process | organelle organization and biogenesis                   | GO:0006996 | 5847 | 446 | 26 | 14 | 7.64E-10 |
| Centrosome      | biological process | microtubule cytoskeleton organization and biogenesis    | GO:0000226 | 5847 | 35  | 26 | 6  | 6.20E-09 |
| Centrosome      | biological process | cell organization and biogenesis                        | GO:0016043 | 5847 | 547 | 26 | 14 | 1.12E-08 |
| Centrosome      | biological process | cell cycle                                              | GO:0007049 | 5847 | 405 | 26 | 12 | 4.12E-08 |
| Centrosome      | biological process | microtubule-based movement                              | GO:0007018 | 5847 | 47  | 26 | 5  | 1.56E-06 |
| Centrosome      | biological process | cytoskeleton-dependent intracellular transport          | GO:0030705 | 5847 | 47  | 26 | 5  | 1.56E-06 |
| Centrosome      | biological process | microtubule nucleation                                  | GO:0007020 | 5847 | 7   | 26 | 3  | 2.70E-06 |
| Centrosome      | biological process | protein polymerization                                  | GO:0051258 | 5847 | 26  | 26 | 4  | 4.30E-06 |
| Centrosome      | biological process | cell division                                           | GO:0051301 | 5847 | 95  | 26 | 5  | 5.11E-05 |
| Dynactin        | molecular function | motor activity                                          | GO:0003774 | 6268 | 76  | 6  | 3  | 3.34E-05 |
| Dynactin        | cellular component | cytoskeleton                                            | GO:0005856 | 5334 | 395 | 7  | 7  | 1.16E-08 |
| Dynactin        | cellular component | actin cytoskeleton                                      | GO:0015629 | 5334 | 121 | 7  | 5  | 1.12E-07 |
| Dynactin        | cellular component | non-membrane-bound organelle                            | GO:0043228 | 5334 | 647 | 7  | 7  | 3.75E-07 |
| Dynactin        | cellular component | intracellular non-membrane-bound organelle              | GO:0043232 | 5334 | 647 | 7  | 7  | 3.75E-07 |
| Dynactin        | cellular component | dynactin complex                                        | GO:0005869 | 5334 | 2   | 7  | 2  | 1.48E-06 |
| Dynactin        | cellular component | F-actin capping protein complex                         | GO:0008290 | 5334 | 5   | 7  | 2  | 1.47E-05 |
| Dynactin        | cellular component | microtubule associated complex                          | GO:0005875 | 5334 | 52  | 7  | 3  | 2.98E-05 |
| Dynactin        | cellular component | dynein complex                                          | GO:0030286 | 5334 | 12  | 7  | 2  | 9.68E-05 |
| Dynactin        | biological process | actin filament depolymerization                         | GO:0030042 | 5847 | 14  | 5  | 2  | 5.30E-05 |
| Dynactin        | biological process | regulation of actin filament depolymerization           | GO:0030834 | 5847 | 14  | 5  | 2  | 5.30E-05 |
| Dynactin        | biological process | negative regulation of actin filament depolymerization  | GO:0030835 | 5847 | 14  | 5  | 2  | 5.30E-05 |
| Dynactin        | biological process | barbed-end actin filament capping                       | GO:0051016 | 5847 | 14  | 5  | 2  | 5.30E-05 |
| Dynactin        | biological process | negative regulation of cell organization and biogenesis | GO:0051129 | 5847 | 19  | 5  | 2  | 9.95E-05 |
| Dynactin        | biological process | protein depolymerization                                | GO:0051261 | 5847 | 19  | 5  | 2  | 9.95E-05 |
| Exocyst         | cellular component | exocyst                                                 | GO:0000145 | 5334 | 5   | 6  | 5  | 1.67E-16 |
| Exocyst         | cellular component | cell cortex                                             | GO:0005938 | 5334 | 16  | 6  | 5  | 7.28E-13 |
| Exocyst         | biological process | exocytosis                                              | GO:0006887 | 5847 | 40  | 7  | 7  | 4.04E-16 |

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|-----------------|--------------------|-------------------------------------------------------------------------------------------------------------|------------|------|------|----|----|----------|
| Exocyst         | biological process | secretory pathway                                                                                           | GO:0045045 | 5847 | 96   | 7  | 7  | 2.58E-13 |
| Exocyst         | biological process | secretion                                                                                                   | GO:0046903 | 5847 | 121  | 7  | 7  | 1.37E-12 |
| Exocyst         | biological process | vesicle-mediated transport                                                                                  | GO:0016192 | 5847 | 197  | 7  | 7  | 4.44E-11 |
| Exocyst         | biological process | vesicle docking                                                                                             | GO:0048278 | 5847 | 16   | 7  | 4  | 1.30E-09 |
| Exocyst         | biological process | protein transport                                                                                           | GO:0015031 | 5847 | 331  | 7  | 7  | 1.75E-09 |
| Exocyst         | biological process | establishment of protein localization                                                                       | GO:0045184 | 5847 | 332  | 7  | 7  | 1.79E-09 |
| Exocyst         | biological process | protein localization                                                                                        | GO:0008104 | 5847 | 343  | 7  | 7  | 2.26E-09 |
| Exocyst         | biological process | vesicle docking during exocytosis                                                                           | GO:0006904 | 5847 | 15   | 7  | 3  | 4.75E-07 |
| Exocyst         | biological process | transport                                                                                                   | GO:0006810 | 5847 | 1086 | 7  | 7  | 7.51E-06 |
| Exocyst         | biological process | establishment of localization                                                                               | GO:0051234 | 5847 | 1087 | 7  | 7  | 7.55E-06 |
| Exocyst         | biological process | localization                                                                                                | GO:0051179 | 5847 | 1096 | 7  | 7  | 8.01E-06 |
| Exosome         | molecular function | 3'-5' exonuclease activity                                                                                  | GO:0008408 | 6268 | 14   | 3  | 3  | 8.87E-09 |
| Exosome         | molecular function | exonuclease activity                                                                                        | GO:0004527 | 6268 | 21   | 3  | 3  | 3.24E-08 |
| Exosome         | molecular function | nuclease activity                                                                                           | GO:0004518 | 6268 | 58   | 3  | 3  | 7.52E-07 |
| Exosome         | molecular function | 3'-5'-exoribonuclease activity                                                                              | GO:0000175 | 6268 | 4    | 3  | 2  | 9.16E-07 |
| Exosome         | molecular function | exoribonuclease activity                                                                                    | GO:0004532 | 6268 | 5    | 3  | 2  | 1.53E-06 |
| Exosome         | molecular function | exoribonuclease activity, producing 5'-phosphomonoesters                                                    | GO:0016896 | 6268 | 5    | 3  | 2  | 1.53E-06 |
| Exosome         | molecular function | exonuclease activity, active with either ribo- or deoxyribonucleic acids and producing 5'-phosphomonoesters | GO:0016796 | 6268 | 6    | 3  | 2  | 2.29E-06 |
| Exosome         | molecular function | ribonuclease activity                                                                                       | GO:0004540 | 6268 | 23   | 3  | 2  | 3.86E-05 |
| Exosome         | cellular component | exosome (RNase complex)                                                                                     | GO:0000178 | 5334 | 3    | 3  | 2  | 6.33E-07 |
| Exosome         | biological process | rRNA processing                                                                                             | GO:0006364 | 5847 | 23   | 3  | 3  | 5.32E-08 |
| Exosome         | biological process | rRNA metabolism                                                                                             | GO:0016072 | 5847 | 27   | 3  | 3  | 8.78E-08 |
| Exosome         | biological process | ribosome biogenesis                                                                                         | GO:0007046 | 5847 | 37   | 3  | 3  | 2.33E-07 |
| Exosome         | biological process | ribosome biogenesis and assembly                                                                            | GO:0042254 | 5847 | 41   | 3  | 3  | 3.20E-07 |
| Exosome         | biological process | cytoplasm organization and biogenesis                                                                       | GO:0007028 | 5847 | 50   | 3  | 3  | 5.89E-07 |
| Exosome         | biological process | RNA processing                                                                                              | GO:0006396 | 5847 | 208  | 3  | 3  | 4.44E-05 |
| Exosome         | biological process | RNA catabolism                                                                                              | GO:0006401 | 5847 | 24   | 3  | 2  | 4.83E-05 |
| Exosome         | biological process | RNA metabolism                                                                                              | GO:0016070 | 5847 | 251  | 3  | 3  | 7.82E-05 |
| FA              | molecular function | phorbol ester receptor activity                                                                             | GO:0001565 | 6268 | 10   | 32 | 5  | 6.19E-10 |
| FA              | molecular function | protein kinase C activity                                                                                   | GO:0004697 | 6268 | 10   | 32 | 5  | 6.19E-10 |
| FA              | molecular function | protein serine/threonine kinase activity                                                                    | GO:0004674 | 6268 | 269  | 32 | 11 | 4.29E-08 |
| FA              | molecular function | cytoskeletal protein binding                                                                                | GO:0008092 | 6268 | 172  | 32 | 9  | 1.17E-07 |
| FA              | molecular function | protein kinase activity                                                                                     | GO:0004672 | 6268 | 336  | 32 | 11 | 4.17E-07 |
| FA              | molecular function | diacylglycerol binding                                                                                      | GO:0019992 | 6268 | 35   | 32 | 5  | 7.29E-07 |
| FA              | molecular function | phosphotransferase activity, alcohol group as acceptor                                                      | GO:0016773 | 6268 | 394  | 32 | 11 | 2.04E-06 |
| FA              | molecular function | kinase activity                                                                                             | GO:0016301 | 6268 | 459  | 32 | 11 | 9.05E-06 |
| FA              | molecular function | actin binding                                                                                               | GO:0003779 | 6268 | 115  | 32 | 6  | 2.05E-05 |
| FA              | molecular function | protein-tyrosine kinase activity                                                                            | GO:0004713 | 6268 | 176  | 32 | 7  | 2.27E-05 |
| FA              | molecular function | transferase activity, transferring phosphorus-containing groups                                             | GO:0016772 | 6268 | 524  | 32 | 11 | 3.19E-05 |
| FA              | cellular component | actin cytoskeleton                                                                                          | GO:0015629 | 5334 | 121  | 24 | 7  | 6.53E-07 |
| FA              | cellular component | caveolar membrane                                                                                           | GO:0016599 | 5334 | 5    | 24 | 3  | 7.96E-07 |

| Protein complex | Ontology type      | GO Term                                             | GO ID      | N    | M    | n  | m  | P-value  |
|-----------------|--------------------|-----------------------------------------------------|------------|------|------|----|----|----------|
| FA              | cellular component | caveola                                             | GO:0005901 | 5334 | 6    | 24 | 3  | 1.59E-06 |
| FA              | cellular component | cytoskeleton                                        | GO:0005856 | 5334 | 395  | 24 | 10 | 3.38E-06 |
| FA              | cellular component | plasma membrane                                     | GO:0005886 | 5334 | 793  | 24 | 12 | 5.16E-05 |
| FA              | biological process | phosphorus metabolism                               | GO:0006793 | 5847 | 479  | 28 | 14 | 7.00E-09 |
| FA              | biological process | phosphate metabolism                                | GO:0006796 | 5847 | 479  | 28 | 14 | 7.00E-09 |
| FA              | biological process | protein amino acid phosphorylation                  | GO:0006468 | 5847 | 325  | 28 | 11 | 1.21E-07 |
| FA              | biological process | intracellular signaling cascade                     | GO:0007242 | 5847 | 574  | 28 | 13 | 6.42E-07 |
| FA              | biological process | phosphorylation                                     | GO:0016310 | 5847 | 384  | 28 | 11 | 6.61E-07 |
| FA              | biological process | cell communication                                  | GO:0007154 | 5847 | 1597 | 28 | 20 | 1.41E-06 |
| FA              | biological process | signal transduction                                 | GO:0007165 | 5847 | 1282 | 28 | 18 | 1.66E-06 |
| LRS             | molecular function | structural constituent of ribosome                  | GO:0003735 | 6268 | 93   | 15 | 15 | 1.15E-28 |
| LRS             | molecular function | structural molecule activity                        | GO:0005198 | 6268 | 326  | 15 | 15 | 4.04E-20 |
| LRS             | molecular function | RNA binding                                         | GO:0003723 | 6268 | 338  | 15 | 8  | 3.04E-07 |
| LRS             | molecular function | rRNA binding                                        | GO:0019843 | 6268 | 4    | 15 | 2  | 3.20E-05 |
| LRS             | cellular component | ribosome                                            | GO:0005840 | 5334 | 83   | 15 | 15 | 2.02E-28 |
| LRS             | cellular component | ribonucleoprotein complex                           | GO:0030529 | 5334 | 186  | 15 | 15 | 7.83E-23 |
| LRS             | cellular component | large ribosomal subunit                             | GO:0015934 | 5334 | 15   | 15 | 8  | 2.54E-18 |
| LRS             | cellular component | cytosolic large ribosomal subunit (sensu Eukaryota) | GO:0005842 | 5334 | 9    | 15 | 7  | 9.52E-18 |
| LRS             | cellular component | cytosolic ribosome (sensu Eukaryota)                | GO:0005830 | 5334 | 18   | 15 | 7  | 8.31E-15 |
| LRS             | cellular component | non-membrane-bound organelle                        | GO:0043228 | 5334 | 647  | 15 | 15 | 1.57E-14 |
| LRS             | cellular component | intracellular non-membrane-bound organelle          | GO:0043232 | 5334 | 647  | 15 | 15 | 1.57E-14 |
| LRS             | cellular component | protein complex                                     | GO:0043234 | 5334 | 916  | 15 | 15 | 3.03E-12 |
| LRS             | cellular component | cytoplasm                                           | GO:0005737 | 5334 | 1723 | 15 | 15 | 4.17E-08 |
| LRS             | cellular component | cytosol                                             | GO:0005829 | 5334 | 175  | 15 | 7  | 1.87E-07 |
| LRS             | biological process | protein biosynthesis                                | GO:0006412 | 5847 | 280  | 15 | 15 | 1.11E-20 |
| LRS             | biological process | macromolecule biosynthesis                          | GO:0009059 | 5847 | 316  | 15 | 15 | 7.12E-20 |
| LRS             | biological process | cellular biosynthesis                               | GO:0044249 | 5847 | 501  | 15 | 15 | 8.12E-17 |
| LRS             | biological process | biosynthesis                                        | GO:0009058 | 5847 | 527  | 15 | 15 | 1.75E-16 |
| LRS             | biological process | cellular protein metabolism                         | GO:0044267 | 5847 | 1624 | 15 | 15 | 4.31E-09 |
| LRS             | biological process | protein metabolism                                  | GO:0019538 | 5847 | 1634 | 15 | 15 | 4.73E-09 |
| LRS             | biological process | cellular macromolecule metabolism                   | GO:0044260 | 5847 | 1745 | 15 | 15 | 1.27E-08 |
| LRS             | biological process | macromolecule metabolism                            | GO:0043170 | 5847 | 1821 | 15 | 15 | 2.42E-08 |
| Nucleosome      | molecular function | DNA binding                                         | GO:0003677 | 6268 | 949  | 17 | 17 | 1.02E-14 |
| Nucleosome      | molecular function | nucleic acid binding                                | GO:0003676 | 6268 | 1503 | 17 | 17 | 2.67E-11 |
| Nucleosome      | cellular component | nucleosome                                          | GO:0000786 | 5334 | 27   | 17 | 17 | 1.34E-42 |
| Nucleosome      | cellular component | chromatin                                           | GO:0000785 | 5334 | 68   | 17 | 17 | 7.16E-34 |
| Nucleosome      | cellular component | chromosome                                          | GO:0005694 | 5334 | 132  | 17 | 17 | 1.71E-28 |
| Nucleosome      | cellular component | non-membrane-bound organelle                        | GO:0043228 | 5334 | 647  | 17 | 17 | 2.21E-16 |
| Nucleosome      | cellular component | intracellular non-membrane-bound organelle          | GO:0043232 | 5334 | 647  | 17 | 17 | 2.21E-16 |
| Nucleosome      | cellular component | protein complex                                     | GO:0043234 | 5334 | 916  | 17 | 17 | 8.68E-14 |
| Nucleosome      | cellular component | nucleus                                             | GO:0005634 | 5334 | 1878 | 17 | 17 | 1.87E-08 |
| Nucleosome      | cellular component | membrane-bound organelle                            | GO:0043227 | 5334 | 2752 | 17 | 17 | 1.27E-05 |
| Nucleosome      | cellular component | intracellular membrane-bound organelle              | GO:0043231 | 5334 | 2752 | 17 | 17 | 1.27E-05 |
| Nucleosome      | biological process | nucleosome assembly                                 | GO:0006334 | 5847 | 38   | 17 | 17 | 9.60E-40 |

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|-----------------|--------------------|----------------------------------------------------------------|------------|------|------|----|----|----------|
| Nucleosome      | biological process | chromatin assembly or disassembly                              | GO:0006333 | 5847 | 65   | 17 | 17 | 6.23E-35 |
| Nucleosome      | biological process | establishment and/or maintenance of chromatin architecture     | GO:0006325 | 5847 | 124  | 17 | 17 | 1.15E-29 |
| Nucleosome      | biological process | DNA packaging                                                  | GO:0006323 | 5847 | 127  | 17 | 17 | 1.78E-29 |
| Nucleosome      | biological process | chromosome organization and biogenesis (sensu Eukaryota)       | GO:0007001 | 5847 | 148  | 17 | 17 | 2.83E-28 |
| Nucleosome      | biological process | protein complex assembly                                       | GO:0006461 | 5847 | 149  | 17 | 17 | 3.20E-28 |
| Nucleosome      | biological process | chromosome organization and biogenesis                         | GO:0051276 | 5847 | 153  | 17 | 17 | 5.14E-28 |
| Nucleosome      | biological process | DNA metabolism                                                 | GO:0006259 | 5847 | 314  | 17 | 17 | 1.69E-22 |
| Nucleosome      | biological process | organelle organization and biogenesis                          | GO:0006996 | 5847 | 446  | 17 | 17 | 7.53E-20 |
| Nucleosome      | biological process | cell organization and biogenesis                               | GO:0016043 | 5847 | 547  | 17 | 17 | 2.56E-18 |
| Nucleosome      | biological process | biopolymer metabolism                                          | GO:0043283 | 5847 | 908  | 17 | 17 | 1.56E-14 |
| Nucleosome      | biological process | nucleobase, nucleoside, nucleotide and nucleic acid metabolism | GO:0006139 | 5847 | 1588 | 17 | 17 | 2.24E-10 |
| Nucleosome      | biological process | cellular protein metabolism                                    | GO:0044267 | 5847 | 1624 | 17 | 17 | 3.28E-10 |
| Nucleosome      | biological process | protein metabolism                                             | GO:0019538 | 5847 | 1634 | 17 | 17 | 3.64E-10 |
| Nucleosome      | biological process | cellular macromolecule metabolism                              | GO:0044260 | 5847 | 1745 | 17 | 17 | 1.12E-09 |
| Nucleosome      | biological process | macromolecule metabolism                                       | GO:0043170 | 5847 | 1821 | 17 | 17 | 2.32E-09 |
| Proteasome      | molecular function | threonine endopeptidase activity                               | GO:0004298 | 6268 | 18   | 19 | 13 | 6.33E-32 |
| Proteasome      | molecular function | endopeptidase activity                                         | GO:0004175 | 6268 | 193  | 19 | 13 | 3.45E-16 |
| Proteasome      | molecular function | peptidase activity                                             | GO:0008233 | 6268 | 282  | 19 | 13 | 5.03E-14 |
| Proteasome      | molecular function | hydrolase activity                                             | GO:0016787 | 6268 | 1010 | 19 | 17 | 3.67E-12 |
| Proteasome      | molecular function | catalytic activity                                             | GO:0003824 | 6268 | 2601 | 19 | 17 | 1.98E-05 |
| Proteasome      | cellular component | proteasome complex (sensu Eukaryota)                           | GO:0000502 | 5334 | 33   | 21 | 20 | 0.00E+00 |
| Proteasome      | cellular component | cytosol                                                        | GO:0005829 | 5334 | 175  | 21 | 21 | 2.04E-32 |
| Proteasome      | cellular component | proteasome core complex (sensu Eukaryota)                      | GO:0005839 | 5334 | 18   | 21 | 13 | 3.87E-30 |
| Proteasome      | cellular component | endoplasmic reticulum                                          | GO:0005783 | 5334 | 288  | 21 | 20 | 4.68E-25 |
| Proteasome      | cellular component | protein complex                                                | GO:0043234 | 5334 | 916  | 21 | 21 | 7.06E-17 |
| Proteasome      | cellular component | cytoplasm                                                      | GO:0005737 | 5334 | 1723 | 21 | 21 | 4.55E-11 |
| Proteasome      | cellular component | nucleus                                                        | GO:0005634 | 5334 | 1878 | 21 | 21 | 2.80E-10 |
| Proteasome      | cellular component | membrane-bound organelle                                       | GO:0043227 | 5334 | 2752 | 21 | 21 | 8.88E-07 |
| Proteasome      | cellular component | intracellular membrane-bound organelle                         | GO:0043231 | 5334 | 2752 | 21 | 21 | 8.88E-07 |
| Proteasome      | cellular component | organelle                                                      | GO:0043226 | 5334 | 3110 | 21 | 21 | 1.17E-05 |
| Proteasome      | cellular component | intracellular organelle                                        | GO:0043229 | 5334 | 3110 | 21 | 21 | 1.17E-05 |
| Proteasome      | cellular component | proteasome regulatory particle (sensu Eukaryota)               | GO:0005838 | 5334 | 4    | 21 | 2  | 8.82E-05 |
| Proteasome      | biological process | protein catabolism                                             | GO:0030163 | 5847 | 324  | 18 | 18 | 1.54E-23 |
| Proteasome      | biological process | biopolymer catabolism                                          | GO:0043285 | 5847 | 330  | 18 | 18 | 2.16E-23 |
| Proteasome      | biological process | macromolecule catabolism                                       | GO:0009057 | 5847 | 396  | 18 | 18 | 6.23E-22 |
| Proteasome      | biological process | proteolysis and peptidolysis                                   | GO:0006508 | 5847 | 318  | 18 | 17 | 3.61E-21 |
| Proteasome      | biological process | cellular protein catabolism                                    | GO:0044257 | 5847 | 318  | 18 | 17 | 3.61E-21 |
| Proteasome      | biological process | ubiquitin-dependent protein catabolism                         | GO:0006511 | 5847 | 86   | 18 | 13 | 4.76E-21 |
| Proteasome      | biological process | modification-dependent protein catabolism                      | GO:0019941 | 5847 | 86   | 18 | 13 | 4.76E-21 |

| Protein complex | Ontology type      | GO Term                                                         | GO ID      | N    | M    | n  | m  | P-value  |
|-----------------|--------------------|-----------------------------------------------------------------|------------|------|------|----|----|----------|
| Proteasome      | biological process | catabolism                                                      | GO:0009056 | 5847 | 502  | 18 | 18 | 4.85E-20 |
| Proteasome      | biological process | cellular macromolecule catabolism                               | GO:0044265 | 5847 | 390  | 18 | 17 | 1.24E-19 |
| Proteasome      | biological process | cellular catabolism                                             | GO:0044248 | 5847 | 472  | 18 | 17 | 3.35E-18 |
| Proteasome      | biological process | biopolymer metabolism                                           | GO:0043283 | 5847 | 908  | 18 | 18 | 2.39E-15 |
| Proteasome      | biological process | protein metabolism                                              | GO:0019538 | 5847 | 1634 | 18 | 18 | 1.01E-10 |
| Proteasome      | biological process | macromolecule metabolism                                        | GO:0043170 | 5847 | 1821 | 18 | 18 | 7.17E-10 |
| Proteasome      | biological process | cellular protein metabolism                                     | GO:0044267 | 5847 | 1624 | 18 | 17 | 4.37E-09 |
| Proteasome      | biological process | cellular macromolecule metabolism                               | GO:0044260 | 5847 | 1745 | 18 | 17 | 1.45E-08 |
| Proteasome      | biological process | primary metabolism                                              | GO:0044238 | 5847 | 3420 | 18 | 18 | 6.30E-05 |
| RNA Pol II      | molecular function | DNA-directed RNA polymerase activity                            | GO:0003899 | 6268 | 24   | 10 | 10 | 7.66E-26 |
| RNA Pol II      | molecular function | nucleotidyltransferase activity                                 | GO:0016779 | 6268 | 61   | 10 | 10 | 3.52E-21 |
| RNA Pol II      | molecular function | transferase activity, transferring phosphorus-containing groups | GO:0016772 | 6268 | 524  | 10 | 10 | 1.54E-11 |
| RNA Pol II      | molecular function | transferase activity                                            | GO:0016740 | 6268 | 830  | 10 | 10 | 1.58E-09 |
| RNA Pol II      | molecular function | DNA binding                                                     | GO:0003677 | 6268 | 949  | 10 | 8  | 9.10E-06 |
| RNA Pol II      | molecular function | nucleic acid binding                                            | GO:0003676 | 6268 | 1503 | 10 | 9  | 2.02E-05 |
| RNA Pol II      | cellular component | RNA polymerase complex                                          | GO:0030880 | 5334 | 19   | 10 | 8  | 2.10E-19 |
| RNA Pol II      | cellular component | DNA-directed RNA polymerase II, core complex                    | GO:0005665 | 5334 | 14   | 10 | 7  | 1.69E-17 |
| RNA Pol II      | cellular component | DNA-directed RNA polymerase II, holoenzyme                      | GO:0016591 | 5334 | 48   | 10 | 7  | 3.57E-13 |
| RNA Pol II      | cellular component | nucleoplasm                                                     | GO:0005654 | 5334 | 154  | 10 | 7  | 1.63E-09 |
| RNA Pol II      | cellular component | protein complex                                                 | GO:0043234 | 5334 | 916  | 10 | 8  | 2.39E-05 |
| RNA Pol II      | cellular component | nucleus                                                         | GO:0005634 | 5334 | 1878 | 10 | 10 | 2.88E-05 |
| RNA Pol II      | biological process | transcription                                                   | GO:0006350 | 5847 | 1021 | 10 | 10 | 2.54E-08 |
| RNA Pol II      | biological process | transcription from Pol II promoter                              | GO:0006366 | 5847 | 304  | 10 | 7  | 1.01E-07 |
| RNA Pol II      | biological process | nucleobase, nucleoside, nucleotide and nucleic acid metabolism  | GO:0006139 | 5847 | 1588 | 10 | 10 | 2.14E-06 |
| RNA Pol II      | biological process | transcription, DNA-dependent                                    | GO:0006351 | 5847 | 950  | 10 | 8  | 1.56E-05 |
| RNA Pol III     | molecular function | DNA-directed RNA polymerase activity                            | GO:0003899 | 6268 | 24   | 4  | 4  | 1.65E-10 |
| RNA Pol III     | molecular function | nucleotidyltransferase activity                                 | GO:0016779 | 6268 | 61   | 4  | 4  | 8.12E-09 |
| RNA Pol III     | molecular function | transferase activity, transferring phosphorus-containing groups | GO:0016772 | 6268 | 524  | 4  | 4  | 4.83E-05 |
| RNA Pol III     | cellular component | RNA polymerase complex                                          | GO:0030880 | 5334 | 19   | 4  | 4  | 1.15E-10 |
| RNA Pol III     | cellular component | DNA-directed RNA polymerase III complex                         | GO:0005666 | 5334 | 4    | 4  | 3  | 6.33E-10 |
| RNA Pol III     | cellular component | nucleoplasm                                                     | GO:0005654 | 5334 | 154  | 4  | 3  | 9.24E-05 |
| RNA Pol III     | biological process | transcription from Pol III promoter                             | GO:0006383 | 5847 | 15   | 4  | 2  | 3.68E-05 |
| SRP             | cellular component | signal recognition particle (sensu Eukaryota)                   | GO:0005786 | 5334 | 7    | 3  | 3  | 1.38E-09 |
| SRP             | cellular component | signal recognition particle                                     | GO:0048500 | 5334 | 7    | 3  | 3  | 1.38E-09 |
| SRP             | cellular component | ribonucleoprotein complex                                       | GO:0030529 | 5334 | 186  | 3  | 3  | 4.17E-05 |
| SRS             | molecular function | structural constituent of ribosome                              | GO:0003735 | 6268 | 93   | 16 | 16 | 1.43E-30 |
| SRS             | molecular function | structural molecule activity                                    | GO:0005198 | 6268 | 326  | 16 | 16 | 2.01E-21 |
| SRS             | cellular component | ribosome                                                        | GO:0005840 | 5334 | 83   | 16 | 14 | 1.82E-24 |

| Protein complex | Ontology type      | GO Term                                                                      | GO ID      | N    | M    | n  | m  | P-value  |
|-----------------|--------------------|------------------------------------------------------------------------------|------------|------|------|----|----|----------|
| SRS             | cellular component | ribonucleoprotein complex                                                    | GO:0030529 | 5334 | 186  | 16 | 16 | 2.52E-24 |
| SRS             | cellular component | small ribosomal subunit                                                      | GO:0015935 | 5334 | 23   | 16 | 7  | 1.13E-13 |
| SRS             | cellular component | protein complex                                                              | GO:0043234 | 5334 | 916  | 16 | 16 | 5.13E-13 |
| SRS             | cellular component | non-membrane-bound organelle                                                 | GO:0043228 | 5334 | 647  | 16 | 14 | 1.25E-11 |
| SRS             | cellular component | intracellular non-membrane-bound organelle                                   | GO:0043232 | 5334 | 647  | 16 | 14 | 1.25E-11 |
| SRS             | cellular component | cytosolic small ribosomal subunit (sensu Eukaryota)                          | GO:0005843 | 5334 | 9    | 16 | 5  | 1.52E-11 |
| SRS             | cellular component | eukaryotic 48S initiation complex                                            | GO:0016283 | 5334 | 9    | 16 | 5  | 1.52E-11 |
| SRS             | cellular component | cytosolic ribosome (sensu Eukaryota)                                         | GO:0005830 | 5334 | 18   | 16 | 5  | 1.02E-09 |
| SRS             | cellular component | eukaryotic 43S preinitiation complex                                         | GO:0016282 | 5334 | 19   | 16 | 5  | 1.38E-09 |
| SRS             | cellular component | cytoplasm                                                                    | GO:0005737 | 5334 | 1723 | 16 | 14 | 7.65E-06 |
| SRS             | biological process | protein biosynthesis                                                         | GO:0006412 | 5847 | 280  | 14 | 14 | 2.43E-19 |
| SRS             | biological process | macromolecule biosynthesis                                                   | GO:0009059 | 5847 | 316  | 14 | 14 | 1.38E-18 |
| SRS             | biological process | cellular biosynthesis                                                        | GO:0044249 | 5847 | 501  | 14 | 14 | 9.72E-16 |
| SRS             | biological process | biosynthesis                                                                 | GO:0009058 | 5847 | 527  | 14 | 14 | 1.99E-15 |
| SRS             | biological process | cellular protein metabolism                                                  | GO:0044267 | 5847 | 1624 | 14 | 14 | 1.56E-08 |
| SRS             | biological process | protein metabolism                                                           | GO:0019538 | 5847 | 1634 | 14 | 14 | 1.70E-08 |
| SRS             | biological process | cellular macromolecule metabolism                                            | GO:0044260 | 5847 | 1745 | 14 | 14 | 4.29E-08 |
| SRS             | biological process | macromolecule metabolism                                                     | GO:0043170 | 5847 | 1821 | 14 | 14 | 7.80E-08 |
| TAFIID          | molecular function | RNA polymerase II transcription factor activity                              | GO:0003702 | 6268 | 130  | 8  | 7  | 1.11E-11 |
| TAFIID          | molecular function | general RNA polymerase II transcription factor activity                      | GO:0016251 | 6268 | 26   | 8  | 5  | 4.54E-11 |
| TAFIID          | molecular function | transcription regulator activity                                             | GO:0030528 | 6268 | 650  | 8  | 7  | 9.12E-07 |
| TAFIID          | molecular function | DNA binding                                                                  | GO:0003677 | 6268 | 949  | 8  | 7  | 1.24E-05 |
| TAFIID          | cellular component | transcription factor TFIID complex                                           | GO:0005669 | 5334 | 11   | 8  | 8  | 1.02E-23 |
| TAFIID          | cellular component | DNA-directed RNA polymerase II. holoenzyme                                   | GO:0016591 | 5334 | 48   | 8  | 8  | 2.33E-17 |
| TAFIID          | cellular component | transcription factor complex                                                 | GO:0005667 | 5334 | 58   | 8  | 8  | 1.19E-16 |
| TAFIID          | cellular component | nucleoplasm                                                                  | GO:0005654 | 5334 | 154  | 8  | 8  | 4.03E-13 |
| TAFIID          | cellular component | protein complex                                                              | GO:0043234 | 5334 | 916  | 8  | 8  | 7.37E-07 |
| TAFIID          | biological process | transcription initiation                                                     | GO:0006352 | 5847 | 36   | 8  | 6  | 9.77E-13 |
| TAFIID          | biological process | transcription. DNA-dependent                                                 | GO:0006351 | 5847 | 950  | 8  | 8  | 4.74E-07 |
| TAFIID          | biological process | transcription                                                                | GO:0006350 | 5847 | 1021 | 8  | 8  | 8.45E-07 |
| TAFIID          | biological process | regulation of transcription. DNA-dependent                                   | GO:0006355 | 5847 | 912  | 8  | 7  | 1.52E-05 |
| TAFIID          | biological process | regulation of transcription                                                  | GO:0045449 | 5847 | 970  | 8  | 7  | 2.33E-05 |
| TAFIID          | biological process | regulation of nucleobase. nucleoside. nucleotide and nucleic acid metabolism | GO:0019219 | 5847 | 989  | 8  | 7  | 2.66E-05 |
| TAFIID          | biological process | nucleobase. nucleoside. nucleotide and nucleic acid metabolism               | GO:0006139 | 5847 | 1588 | 8  | 8  | 2.92E-05 |
| TAFIID          | biological process | regulation of metabolism                                                     | GO:0019222 | 5847 | 1081 | 8  | 7  | 4.88E-05 |
| VHL             | biological process | ubiquitin cycle                                                              | GO:0006512 | 5847 | 324  | 4  | 4  | 9.26E-06 |

## B

| Protein complex | Ontology type      | GO Term                                                    | GO ID      | N    | M    | n  | m  | P-value  |
|-----------------|--------------------|------------------------------------------------------------|------------|------|------|----|----|----------|
| Arp2-3          | cellular component | Arp2/3 protein complex                                     | GO:0005885 | 7542 | 3    | 3  | 3  | 1.40E-11 |
| Arp2-3          | cellular component | actin cytoskeleton                                         | GO:0015629 | 7542 | 157  | 3  | 3  | 8.85E-06 |
| Arp2-3          | biological process | regulation of actin filament polymerization                | GO:0030833 | 8259 | 6    | 3  | 2  | 1.32E-06 |
| Arp2-3          | biological process | actin filament polymerization                              | GO:0030041 | 8259 | 11   | 3  | 2  | 4.83E-06 |
| Arp2-3          | biological process | cell motility                                              | GO:0006928 | 8259 | 150  | 3  | 3  | 5.87E-06 |
| Arp2-3          | biological process | protein polymerization                                     | GO:0051258 | 8259 | 22   | 3  | 2  | 2.03E-05 |
| Arp2-3          | biological process | regulation of actin polymerization and/or depolymerization | GO:0008064 | 8259 | 27   | 3  | 2  | 3.08E-05 |
| Arp2-3          | biological process | regulation of actin filament length                        | GO:0030832 | 8259 | 27   | 3  | 2  | 3.08E-05 |
| Arp2-3          | biological process | actin polymerization and/or depolymerization               | GO:0008154 | 8259 | 35   | 3  | 2  | 5.22E-05 |
| Arp2-3          | biological process | regulation of cell organization and biogenesis             | GO:0051128 | 8259 | 39   | 3  | 2  | 6.50E-05 |
| APC             | molecular function | ubiquitin-protein ligase activity                          | GO:0004842 | 8974 | 296  | 7  | 4  | 3.75E-05 |
| APC             | molecular function | acid-amino acid ligase activity                            | GO:0016881 | 8974 | 312  | 7  | 4  | 4.62E-05 |
| APC             | molecular function | ligase activity, forming carbon-nitrogen bonds             | GO:0016879 | 8974 | 337  | 7  | 4  | 6.25E-05 |
| APC             | cellular component | nuclear ubiquitin ligase complex                           | GO:0000152 | 7542 | 9    | 7  | 6  | 2.30E-18 |
| APC             | cellular component | anaphase-promoting complex                                 | GO:0005680 | 7542 | 9    | 7  | 6  | 2.30E-18 |
| APC             | cellular component | ubiquitin ligase complex                                   | GO:0000151 | 7542 | 254  | 7  | 6  | 9.37E-09 |
| APC             | biological process | mitosis                                                    | GO:0007067 | 8259 | 115  | 8  | 8  | 1.11E-15 |
| APC             | biological process | M phase of mitotic cell cycle                              | GO:0000087 | 8259 | 117  | 8  | 8  | 1.27E-15 |
| APC             | biological process | M phase                                                    | GO:0000279 | 8259 | 143  | 8  | 8  | 6.64E-15 |
| APC             | biological process | mitotic cell cycle                                         | GO:0000278 | 8259 | 173  | 8  | 8  | 3.16E-14 |
| APC             | biological process | cell division                                              | GO:0051301 | 8259 | 122  | 8  | 7  | 1.02E-12 |
| APC             | biological process | cell cycle                                                 | GO:0007049 | 8259 | 513  | 8  | 8  | 2.10E-10 |
| APC             | biological process | mitotic metaphase/anaphase transition                      | GO:0007091 | 8259 | 3    | 8  | 3  | 5.97E-10 |
| APC             | biological process | regulation of cell cycle                                   | GO:0000074 | 8259 | 338  | 8  | 7  | 1.40E-09 |
| APC             | biological process | mitotic anaphase                                           | GO:0000090 | 8259 | 5    | 8  | 3  | 5.96E-09 |
| APC             | biological process | anaphase                                                   | GO:0051322 | 8259 | 5    | 8  | 3  | 5.96E-09 |
| APC             | biological process | ubiquitin cycle                                            | GO:0006512 | 8259 | 435  | 8  | 7  | 8.20E-09 |
| APC             | biological process | interphase                                                 | GO:0051325 | 8259 | 69   | 8  | 4  | 3.05E-07 |
| APC             | biological process | interphase of mitotic cell cycle                           | GO:0051329 | 8259 | 69   | 8  | 4  | 3.05E-07 |
| APC             | biological process | regulation of mitotic metaphase/anaphase transition        | GO:0030071 | 8259 | 2    | 8  | 2  | 8.21E-07 |
| APC             | biological process | ubiquitin-dependent protein catabolism                     | GO:0006511 | 8259 | 99   | 8  | 4  | 1.31E-06 |
| APC             | biological process | modification-dependent protein catabolism                  | GO:0019941 | 8259 | 99   | 8  | 4  | 1.31E-06 |
| APC             | biological process | regulation of mitosis                                      | GO:0007088 | 8259 | 31   | 8  | 3  | 2.65E-06 |
| APC             | biological process | G2/M transition of mitotic cell cycle                      | GO:0000086 | 8259 | 40   | 8  | 3  | 5.80E-06 |
| APC             | biological process | protein modification                                       | GO:0006464 | 8259 | 1231 | 8  | 7  | 1.12E-05 |
| Centrosome      | molecular function | tubulin binding                                            | GO:0015631 | 8974 | 30   | 32 | 5  | 5.56E-08 |
| Centrosome      | molecular function | motor activity                                             | GO:0003774 | 8974 | 104  | 32 | 6  | 1.49E-06 |
| Centrosome      | molecular function | microtubule binding                                        | GO:0008017 | 8974 | 21   | 32 | 3  | 5.24E-05 |
| Centrosome      | cellular component | microtubule cytoskeleton                                   | GO:0015630 | 7542 | 177  | 31 | 23 | 5.19E-32 |
| Centrosome      | cellular component | microtubule organizing center                              | GO:0005815 | 7542 | 39   | 31 | 14 | 1.74E-25 |
| Centrosome      | cellular component | cytoskeleton                                               | GO:0005856 | 7542 | 537  | 31 | 25 | 5.94E-24 |
| Centrosome      | cellular component | spindle                                                    | GO:0005819 | 7542 | 50   | 31 | 14 | 1.06E-23 |

| Protein complex | Ontology type      | GO Term                                              | GO ID      | N    | M    | n  | m  | P-value  |
|-----------------|--------------------|------------------------------------------------------|------------|------|------|----|----|----------|
| Centrosome      | cellular component | spindle pole                                         | GO:0000922 | 7542 | 40   | 31 | 13 | 5.76E-23 |
| Centrosome      | cellular component | centrosome                                           | GO:0005813 | 7542 | 35   | 31 | 12 | 1.59E-21 |
| Centrosome      | cellular component | microtubule                                          | GO:0005874 | 7542 | 126  | 31 | 15 | 2.26E-19 |
| Centrosome      | cellular component | non-membrane-bound organelle                         | GO:0043228 | 7542 | 881  | 31 | 25 | 1.32E-18 |
| Centrosome      | cellular component | intracellular non-membrane-bound organelle           | GO:0043232 | 7542 | 881  | 31 | 25 | 1.32E-18 |
| Centrosome      | cellular component | dynein complex                                       | GO:0030286 | 7542 | 21   | 31 | 5  | 1.63E-08 |
| Centrosome      | cellular component | microtubule associated complex                       | GO:0005875 | 7542 | 76   | 31 | 7  | 1.73E-08 |
| Centrosome      | cellular component | gamma-tubulin complex                                | GO:0000930 | 7542 | 5    | 31 | 3  | 6.25E-07 |
| Centrosome      | cellular component | spindle microtubule                                  | GO:0005876 | 7542 | 7    | 31 | 3  | 2.18E-06 |
| Centrosome      | cellular component | cAMP-dependent protein kinase complex                | GO:0005952 | 7542 | 8    | 31 | 3  | 3.47E-06 |
| Centrosome      | cellular component | organelle                                            | GO:0043226 | 7542 | 4197 | 31 | 28 | 3.24E-05 |
| Centrosome      | cellular component | intracellular organelle                              | GO:0043229 | 7542 | 4197 | 31 | 28 | 3.24E-05 |
| Centrosome      | cellular component | centriole                                            | GO:0005814 | 7542 | 3    | 31 | 2  | 4.89E-05 |
| Centrosome      | cellular component | polar microtubule                                    | GO:0005827 | 7542 | 3    | 31 | 2  | 4.89E-05 |
| Centrosome      | cellular component | intracellular                                        | GO:0005622 | 7542 | 5078 | 31 | 30 | 7.40E-05 |
| Centrosome      | biological process | microtubule-based process                            | GO:0007017 | 8259 | 107  | 27 | 12 | 1.76E-16 |
| Centrosome      | biological process | cytoskeleton organization and biogenesis             | GO:0007010 | 8259 | 256  | 27 | 13 | 2.46E-13 |
| Centrosome      | biological process | microtubule cytoskeleton organization and biogenesis | GO:0000226 | 8259 | 47   | 27 | 8  | 1.20E-12 |
| Centrosome      | biological process | mitosis                                              | GO:0007067 | 8259 | 115  | 27 | 10 | 1.27E-12 |
| Centrosome      | biological process | M phase of mitotic cell cycle                        | GO:0000087 | 8259 | 117  | 27 | 10 | 1.52E-12 |
| Centrosome      | biological process | mitotic cell cycle                                   | GO:0000278 | 8259 | 173  | 27 | 11 | 2.42E-12 |
| Centrosome      | biological process | M phase                                              | GO:0000279 | 8259 | 143  | 27 | 10 | 1.16E-11 |
| Centrosome      | biological process | organelle organization and biogenesis                | GO:0006996 | 8259 | 568  | 27 | 15 | 2.44E-11 |
| Centrosome      | biological process | microtubule nucleation                               | GO:0007020 | 8259 | 12   | 27 | 5  | 1.97E-10 |
| Centrosome      | biological process | cell organization and biogenesis                     | GO:0016043 | 8259 | 697  | 27 | 15 | 4.51E-10 |
| Centrosome      | biological process | cell cycle                                           | GO:0007049 | 8259 | 513  | 27 | 12 | 2.14E-08 |
| Centrosome      | biological process | microtubule-based movement                           | GO:0007018 | 8259 | 56   | 27 | 4  | 2.96E-05 |
| Centrosome      | biological process | cytoskeleton-dependent intracellular transport       | GO:0030705 | 8259 | 56   | 27 | 4  | 2.96E-05 |
| Centrosome      | biological process | cell division                                        | GO:0051301 | 8259 | 122  | 27 | 5  | 4.03E-05 |
| Centrosome      | biological process | protein polymerization                               | GO:0051258 | 8259 | 22   | 27 | 3  | 4.60E-05 |
| Dynactin        | molecular function | actin binding                                        | GO:0003779 | 8974 | 164  | 8  | 4  | 7.11E-06 |
| Dynactin        | molecular function | cytoskeletal protein binding                         | GO:0008092 | 8974 | 239  | 8  | 4  | 3.16E-05 |
| Dynactin        | molecular function | motor activity                                       | GO:0003774 | 8974 | 104  | 8  | 3  | 8.12E-05 |
| Dynactin        | cellular component | cytoskeleton                                         | GO:0005856 | 7542 | 537  | 9  | 9  | 4.42E-11 |
| Dynactin        | cellular component | actin cytoskeleton                                   | GO:0015629 | 7542 | 157  | 9  | 7  | 5.16E-11 |
| Dynactin        | cellular component | F-actin capping protein complex                      | GO:0008290 | 7542 | 8    | 9  | 4  | 6.53E-11 |
| Dynactin        | cellular component | non-membrane-bound organelle                         | GO:0043228 | 7542 | 881  | 9  | 9  | 3.91E-09 |
| Dynactin        | cellular component | intracellular non-membrane-bound organelle           | GO:0043232 | 7542 | 881  | 9  | 9  | 3.91E-09 |
| Dynactin        | cellular component | dynactin complex                                     | GO:0005869 | 7542 | 3    | 9  | 2  | 3.80E-06 |
| Dynactin        | cellular component | microtubule associated complex                       | GO:0005875 | 7542 | 76   | 9  | 3  | 7.91E-05 |
| Dynactin        | cellular component | protein complex                                      | GO:0043234 | 7542 | 1247 | 9  | 7  | 8.79E-05 |
| Dynactin        | biological process | actin filament depolymerization                      | GO:0030042 | 8259 | 19   | 7  | 4  | 6.97E-10 |

| Protein complex | Ontology type      | GO Term                                                    | GO ID      | N    | M    | n | m | P-value  |
|-----------------|--------------------|------------------------------------------------------------|------------|------|------|---|---|----------|
| Dynactin        | biological process | regulation of actin filament depolymerization              | GO:0030834 | 8259 | 19   | 7 | 4 | 6.97E-10 |
| Dynactin        | biological process | negative regulation of actin filament depolymerization     | GO:0030835 | 8259 | 19   | 7 | 4 | 6.97E-10 |
| Dynactin        | biological process | barbed-end actin filament capping                          | GO:0051016 | 8259 | 19   | 7 | 4 | 6.97E-10 |
| Dynactin        | biological process | regulation of actin polymerization and/or depolymerization | GO:0008064 | 8259 | 27   | 7 | 4 | 3.15E-09 |
| Dynactin        | biological process | regulation of actin filament length                        | GO:0030832 | 8259 | 27   | 7 | 4 | 3.15E-09 |
| Dynactin        | biological process | negative regulation of cell organization and biogenesis    | GO:0051129 | 8259 | 27   | 7 | 4 | 3.15E-09 |
| Dynactin        | biological process | protein depolymerization                                   | GO:0051261 | 8259 | 27   | 7 | 4 | 3.15E-09 |
| Dynactin        | biological process | actin polymerization and/or depolymerization               | GO:0008154 | 8259 | 35   | 7 | 4 | 9.37E-09 |
| Dynactin        | biological process | regulation of cell organization and biogenesis             | GO:0051128 | 8259 | 39   | 7 | 4 | 1.47E-08 |
| Dynactin        | biological process | negative regulation of protein metabolism                  | GO:0051248 | 8259 | 39   | 7 | 4 | 1.47E-08 |
| Dynactin        | biological process | regulation of protein metabolism                           | GO:0051246 | 8259 | 69   | 7 | 4 | 1.53E-07 |
| Dynactin        | biological process | actin cytoskeleton organization and biogenesis             | GO:0030036 | 8259 | 92   | 7 | 4 | 4.92E-07 |
| Dynactin        | biological process | cytoskeleton organization and biogenesis                   | GO:0007010 | 8259 | 256  | 7 | 5 | 5.49E-07 |
| Dynactin        | biological process | actin filament-based process                               | GO:0030029 | 8259 | 99   | 7 | 4 | 6.62E-07 |
| Dynactin        | biological process | organelle organization and biogenesis                      | GO:0006996 | 8259 | 568  | 7 | 6 | 6.80E-07 |
| Dynactin        | biological process | cell organization and biogenesis                           | GO:0016043 | 8259 | 697  | 7 | 6 | 2.30E-06 |
| Dynactin        | biological process | negative regulation of metabolism                          | GO:0009892 | 8259 | 164  | 7 | 4 | 5.01E-06 |
| Dynactin        | biological process | negative regulation of cellular physiological process      | GO:0051243 | 8259 | 247  | 7 | 4 | 2.55E-05 |
| Dynactin        | biological process | negative regulation of cellular process                    | GO:0048523 | 8259 | 292  | 7 | 4 | 4.93E-05 |
| Exocyst         | cellular component | exocyst                                                    | GO:0000145 | 7542 | 5    | 6 | 5 | 2.95E-17 |
| Exocyst         | cellular component | cell cortex                                                | GO:0005938 | 7542 | 20   | 6 | 5 | 4.57E-13 |
| Exocyst         | biological process | exocytosis                                                 | GO:0006887 | 8259 | 49   | 7 | 7 | 1.66E-16 |
| Exocyst         | biological process | secretory pathway                                          | GO:0045045 | 8259 | 118  | 7 | 7 | 1.02E-13 |
| Exocyst         | biological process | secretion                                                  | GO:0046903 | 8259 | 152  | 7 | 7 | 6.23E-13 |
| Exocyst         | biological process | vesicle-mediated transport                                 | GO:0016192 | 8259 | 251  | 7 | 7 | 2.21E-11 |
| Exocyst         | biological process | vesicle docking                                            | GO:0048278 | 8259 | 18   | 7 | 4 | 5.51E-10 |
| Exocyst         | biological process | protein transport                                          | GO:0015031 | 8259 | 434  | 7 | 7 | 1.06E-09 |
| Exocyst         | biological process | establishment of protein localization                      | GO:0045184 | 8259 | 436  | 7 | 7 | 1.09E-09 |
| Exocyst         | biological process | protein localization                                       | GO:0008104 | 8259 | 449  | 7 | 7 | 1.34E-09 |
| Exocyst         | biological process | vesicle docking during exocytosis                          | GO:0006904 | 8259 | 17   | 7 | 3 | 2.52E-07 |
| Exocyst         | biological process | transport                                                  | GO:0006810 | 8259 | 1557 | 7 | 7 | 8.37E-06 |
| Exocyst         | biological process | establishment of localization                              | GO:0051234 | 8259 | 1559 | 7 | 7 | 8.45E-06 |
| Exocyst         | biological process | localization                                               | GO:0051179 | 8259 | 1571 | 7 | 7 | 8.91E-06 |
| Exosome         | molecular function | exonuclease activity                                       | GO:0004527 | 8974 | 42   | 5 | 5 | 1.76E-12 |
| Exosome         | molecular function | nuclease activity                                          | GO:0004518 | 8974 | 94   | 5 | 5 | 1.13E-10 |
| Exosome         | molecular function | 3'-5' exonuclease activity                                 | GO:0008408 | 8974 | 23   | 5 | 4 | 1.64E-10 |
| Exosome         | molecular function | 3'-5'-exoribonuclease activity                             | GO:0000175 | 8974 | 9    | 5 | 3 | 6.97E-09 |

| Protein complex | Ontology type      | GO Term                                                                                                     | GO ID      | N    | M    | n  | m  | P-value  |
|-----------------|--------------------|-------------------------------------------------------------------------------------------------------------|------------|------|------|----|----|----------|
| Exosome         | molecular function | exoribonuclease activity                                                                                    | GO:0004532 | 8974 | 11   | 5  | 3  | 1.37E-08 |
| Exosome         | molecular function | exoribonuclease activity.<br>producing 5'-phosphomonoesters                                                 | GO:0016896 | 8974 | 11   | 5  | 3  | 1.37E-08 |
| Exosome         | molecular function | exonuclease activity. active with either ribo- or deoxyribonucleic acids and producing 5'-phosphomonoesters | GO:0016796 | 8974 | 13   | 5  | 3  | 2.37E-08 |
| Exosome         | molecular function | RNA binding                                                                                                 | GO:0003723 | 8974 | 412  | 5  | 5  | 1.99E-07 |
| Exosome         | molecular function | hydrolase activity. acting on ester bonds                                                                   | GO:0016788 | 8974 | 444  | 5  | 5  | 2.90E-07 |
| Exosome         | molecular function | ribonuclease activity                                                                                       | GO:0004540 | 8974 | 38   | 5  | 3  | 6.97E-07 |
| Exosome         | molecular function | hydrolase activity                                                                                          | GO:0016787 | 8974 | 1384 | 5  | 5  | 8.67E-05 |
| Exosome         | cellular component | exosome (RNase complex)                                                                                     | GO:0000178 | 7542 | 6    | 5  | 4  | 5.57E-13 |
| Exosome         | cellular component | nucleolus                                                                                                   | GO:0005730 | 7542 | 69   | 5  | 4  | 3.19E-08 |
| Exosome         | biological process | rRNA processing                                                                                             | GO:0006364 | 8259 | 29   | 5  | 5  | 3.71E-13 |
| Exosome         | biological process | rRNA metabolism                                                                                             | GO:0016072 | 8259 | 33   | 5  | 5  | 7.42E-13 |
| Exosome         | biological process | ribosome biogenesis                                                                                         | GO:0007046 | 8259 | 44   | 5  | 5  | 3.40E-12 |
| Exosome         | biological process | ribosome biogenesis and assembly                                                                            | GO:0042254 | 8259 | 49   | 5  | 5  | 5.96E-12 |
| Exosome         | biological process | cytoplasm organization and biogenesis                                                                       | GO:0007028 | 8259 | 61   | 5  | 5  | 1.86E-11 |
| Exosome         | biological process | RNA processing                                                                                              | GO:0006396 | 8259 | 261  | 5  | 5  | 3.04E-08 |
| Exosome         | biological process | RNA metabolism                                                                                              | GO:0016070 | 8259 | 332  | 5  | 5  | 1.02E-07 |
| Exosome         | biological process | organelle organization and biogenesis                                                                       | GO:0006996 | 8259 | 568  | 5  | 5  | 1.51E-06 |
| Exosome         | biological process | cell organization and biogenesis                                                                            | GO:0016043 | 8259 | 697  | 5  | 5  | 4.22E-06 |
| Exosome         | biological process | biopolymer metabolism                                                                                       | GO:0043283 | 8259 | 1199 | 5  | 5  | 6.40E-05 |
| FA              | molecular function | cytoskeletal protein binding                                                                                | GO:0008092 | 8974 | 239  | 38 | 13 | 7.35E-12 |
| FA              | molecular function | actin binding                                                                                               | GO:0003779 | 8974 | 164  | 38 | 11 | 4.26E-11 |
| FA              | molecular function | phorbol ester receptor activity                                                                             | GO:0001565 | 8974 | 9    | 38 | 4  | 3.39E-08 |
| FA              | molecular function | protein kinase C activity                                                                                   | GO:0004697 | 8974 | 9    | 38 | 4  | 3.39E-08 |
| FA              | molecular function | protein kinase activity                                                                                     | GO:0004672 | 8974 | 451  | 38 | 12 | 1.84E-07 |
| FA              | molecular function | protein-tyrosine kinase activity                                                                            | GO:0004713 | 8974 | 231  | 38 | 9  | 3.61E-07 |
| FA              | molecular function | protein binding                                                                                             | GO:0005515 | 8974 | 2073 | 38 | 23 | 8.00E-07 |
| FA              | molecular function | phosphotransferase activity. alcohol group as acceptor                                                      | GO:0016773 | 8974 | 528  | 38 | 12 | 1.01E-06 |
| FA              | molecular function | protein serine/threonine kinase activity                                                                    | GO:0004674 | 8974 | 351  | 38 | 10 | 1.31E-06 |
| FA              | molecular function | kinase activity                                                                                             | GO:0016301 | 8974 | 627  | 38 | 12 | 6.10E-06 |
| FA              | molecular function | diacylglycerol binding                                                                                      | GO:0019992 | 8974 | 37   | 38 | 4  | 1.63E-05 |
| FA              | molecular function | transferase activity. transferring phosphorus-containing groups                                             | GO:0016772 | 8974 | 714  | 38 | 12 | 2.30E-05 |
| FA              | cellular component | cytoskeleton                                                                                                | GO:0005856 | 7542 | 537  | 30 | 15 | 2.89E-10 |
| FA              | cellular component | actin cytoskeleton                                                                                          | GO:0015629 | 7542 | 157  | 30 | 8  | 1.17E-07 |
| FA              | cellular component | non-membrane-bound organelle                                                                                | GO:0043228 | 7542 | 881  | 30 | 15 | 2.60E-07 |
| FA              | cellular component | intracellular non-membrane-bound organelle                                                                  | GO:0043232 | 7542 | 881  | 30 | 15 | 2.60E-07 |
| FA              | cellular component | caveolar membrane                                                                                           | GO:0016599 | 7542 | 5    | 30 | 3  | 5.65E-07 |
| FA              | cellular component | caveola                                                                                                     | GO:0005901 | 7542 | 6    | 30 | 3  | 1.13E-06 |
| FA              | biological process | cell communication                                                                                          | GO:0007154 | 8259 | 2280 | 34 | 26 | 4.16E-09 |

| Protein complex | Ontology type      | GO Term                                             | GO ID      | N    | M    | n  | m  | P-value  |
|-----------------|--------------------|-----------------------------------------------------|------------|------|------|----|----|----------|
| FA              | biological process | phosphorus metabolism                               | GO:0006793 | 8259 | 622  | 34 | 15 | 5.81E-09 |
| FA              | biological process | phosphate metabolism                                | GO:0006796 | 8259 | 622  | 34 | 15 | 5.81E-09 |
| FA              | biological process | intracellular signaling cascade                     | GO:0007242 | 8259 | 797  | 34 | 16 | 2.03E-08 |
| FA              | biological process | protein amino acid phosphorylation                  | GO:0006468 | 8259 | 433  | 34 | 12 | 7.08E-08 |
| FA              | biological process | phosphorylation                                     | GO:0016310 | 8259 | 501  | 34 | 12 | 3.50E-07 |
| FA              | biological process | signal transduction                                 | GO:0007165 | 8259 | 1823 | 34 | 21 | 6.78E-07 |
| LRS             | molecular function | structural constituent of ribosome                  | GO:0003735 | 8974 | 138  | 18 | 18 | 7.38E-34 |
| LRS             | molecular function | structural molecule activity                        | GO:0005198 | 8974 | 463  | 18 | 18 | 4.88E-24 |
| LRS             | molecular function | RNA binding                                         | GO:0003723 | 8974 | 412  | 18 | 11 | 3.99E-11 |
| LRS             | molecular function | rRNA binding                                        | GO:0019843 | 8974 | 5    | 18 | 2  | 3.79E-05 |
| LRS             | cellular component | ribosome                                            | GO:0005840 | 7542 | 118  | 18 | 18 | 8.22E-34 |
| LRS             | cellular component | ribonucleoprotein complex                           | GO:0030529 | 7542 | 247  | 18 | 18 | 1.02E-27 |
| LRS             | cellular component | large ribosomal subunit                             | GO:0015934 | 7542 | 24   | 18 | 11 | 7.03E-25 |
| LRS             | cellular component | cytosolic large ribosomal subunit (sensu Eukaryota) | GO:0005842 | 7542 | 15   | 18 | 10 | 8.02E-25 |
| LRS             | cellular component | cytosolic ribosome (sensu Eukaryota)                | GO:0005830 | 7542 | 25   | 18 | 10 | 8.64E-22 |
| LRS             | cellular component | non-membrane-bound organelle                        | GO:0043228 | 7542 | 881  | 18 | 18 | 1.41E-17 |
| LRS             | cellular component | intracellular non-membrane-bound organelle          | GO:0043232 | 7542 | 881  | 18 | 18 | 1.41E-17 |
| LRS             | cellular component | protein complex                                     | GO:0043234 | 7542 | 1247 | 18 | 18 | 7.69E-15 |
| LRS             | cellular component | cytosol                                             | GO:0005829 | 7542 | 213  | 18 | 10 | 9.40E-12 |
| LRS             | cellular component | cytoplasm                                           | GO:0005737 | 7542 | 2255 | 18 | 18 | 3.48E-10 |
| LRS             | cellular component | organelle                                           | GO:0043226 | 7542 | 4197 | 18 | 18 | 2.58E-05 |
| LRS             | cellular component | intracellular organelle                             | GO:0043229 | 7542 | 4197 | 18 | 18 | 2.58E-05 |
| LRS             | biological process | protein biosynthesis                                | GO:0006412 | 8259 | 397  | 18 | 18 | 1.29E-24 |
| LRS             | biological process | macromolecule biosynthesis                          | GO:0009059 | 8259 | 445  | 18 | 18 | 1.05E-23 |
| LRS             | biological process | cellular biosynthesis                               | GO:0044249 | 8259 | 697  | 18 | 18 | 3.85E-20 |
| LRS             | biological process | biosynthesis                                        | GO:0009058 | 8259 | 728  | 18 | 18 | 8.51E-20 |
| LRS             | biological process | cellular protein metabolism                         | GO:0044267 | 8259 | 2195 | 18 | 18 | 4.16E-11 |
| LRS             | biological process | protein metabolism                                  | GO:0019538 | 8259 | 2210 | 18 | 18 | 4.70E-11 |
| LRS             | biological process | cellular macromolecule metabolism                   | GO:0044260 | 8259 | 2356 | 18 | 18 | 1.49E-10 |
| LRS             | biological process | macromolecule metabolism                            | GO:0043170 | 8259 | 2471 | 18 | 18 | 3.53E-10 |
| LRS             | biological process | primary metabolism                                  | GO:0044238 | 8259 | 4660 | 18 | 18 | 3.31E-05 |
| LRS             | biological process | cellular metabolism                                 | GO:0044237 | 8259 | 4823 | 18 | 18 | 6.16E-05 |
| Nucleosome      | molecular function | DNA binding                                         | GO:0003677 | 8974 | 1297 | 24 | 24 | 5.74E-21 |
| Nucleosome      | molecular function | nucleic acid binding                                | GO:0003676 | 8974 | 2085 | 24 | 24 | 5.53E-16 |
| Nucleosome      | cellular component | chromatin                                           | GO:0000785 | 7542 | 100  | 24 | 24 | 0.00E+00 |
| Nucleosome      | cellular component | nucleosome                                          | GO:0000786 | 7542 | 45   | 24 | 24 | 0.00E+00 |
| Nucleosome      | cellular component | chromosome                                          | GO:0005694 | 7542 | 181  | 24 | 24 | 2.80E-40 |
| Nucleosome      | cellular component | non-membrane-bound organelle                        | GO:0043228 | 7542 | 881  | 24 | 24 | 3.15E-23 |
| Nucleosome      | cellular component | intracellular non-membrane-bound organelle          | GO:0043232 | 7542 | 881  | 24 | 24 | 3.15E-23 |
| Nucleosome      | cellular component | protein complex                                     | GO:0043234 | 7542 | 1247 | 24 | 24 | 1.45E-19 |
| Nucleosome      | cellular component | nucleus                                             | GO:0005634 | 7542 | 2503 | 24 | 24 | 2.96E-12 |
| Nucleosome      | cellular component | membrane-bound organelle                            | GO:0043227 | 7542 | 3685 | 24 | 24 | 3.30E-08 |
| Nucleosome      | cellular component | intracellular membrane-bound organelle              | GO:0043231 | 7542 | 3685 | 24 | 24 | 3.30E-08 |
| Nucleosome      | cellular component | organelle                                           | GO:0043226 | 7542 | 4197 | 24 | 24 | 7.55E-07 |
| Nucleosome      | cellular component | intracellular organelle                             | GO:0043229 | 7542 | 4197 | 24 | 24 | 7.55E-07 |

| Protein complex | Ontology type      | GO Term                                                        | GO ID      | N    | M    | n  | m  | P-value  |
|-----------------|--------------------|----------------------------------------------------------------|------------|------|------|----|----|----------|
| Nucleosome      | cellular component | intracellular                                                  | GO:0005622 | 7542 | 5078 | 24 | 24 | 7.40E-05 |
| Nucleosome      | biological process | chromatin assembly or disassembly                              | GO:0006333 | 8259 | 86   | 24 | 24 | 0.00E+00 |
| Nucleosome      | biological process | nucleosome assembly                                            | GO:0006334 | 8259 | 54   | 24 | 24 | 0.00E+00 |
| Nucleosome      | biological process | establishment and/or maintenance of chromatin architecture     | GO:0006325 | 8259 | 160  | 24 | 24 | 1.31E-42 |
| Nucleosome      | biological process | DNA packaging                                                  | GO:0006323 | 8259 | 166  | 24 | 24 | 3.41E-42 |
| Nucleosome      | biological process | protein complex assembly                                       | GO:0006461 | 8259 | 188  | 24 | 24 | 8.36E-41 |
| Nucleosome      | biological process | chromosome organization and biogenesis (sensu Eukaryota)       | GO:0007001 | 8259 | 196  | 24 | 24 | 2.43E-40 |
| Nucleosome      | biological process | chromosome organization and biogenesis                         | GO:0051276 | 8259 | 203  | 24 | 24 | 5.94E-40 |
| Nucleosome      | biological process | DNA metabolism                                                 | GO:0006259 | 8259 | 405  | 24 | 24 | 1.93E-32 |
| Nucleosome      | biological process | organelle organization and biogenesis                          | GO:0006996 | 8259 | 568  | 24 | 24 | 7.92E-29 |
| Nucleosome      | biological process | cell organization and biogenesis                               | GO:0016043 | 8259 | 697  | 24 | 24 | 1.18E-26 |
| Nucleosome      | biological process | biopolymer metabolism                                          | GO:0043283 | 8259 | 1199 | 24 | 24 | 6.30E-21 |
| Nucleosome      | biological process | nucleobase, nucleoside, nucleotide and nucleic acid metabolism | GO:0006139 | 8259 | 2155 | 24 | 24 | 9.02E-15 |
| Nucleosome      | biological process | cellular protein metabolism                                    | GO:0044267 | 8259 | 2195 | 24 | 24 | 1.41E-14 |
| Nucleosome      | biological process | protein metabolism                                             | GO:0019538 | 8259 | 2210 | 24 | 24 | 1.66E-14 |
| Nucleosome      | biological process | cellular macromolecule metabolism                              | GO:0044260 | 8259 | 2356 | 24 | 24 | 7.75E-14 |
| Nucleosome      | biological process | macromolecule metabolism                                       | GO:0043170 | 8259 | 2471 | 24 | 24 | 2.45E-13 |
| Nucleosome      | biological process | primary metabolism                                             | GO:0044238 | 8259 | 4660 | 24 | 24 | 1.06E-06 |
| Nucleosome      | biological process | cellular metabolism                                            | GO:0044237 | 8259 | 4823 | 24 | 24 | 2.42E-06 |
| Nucleosome      | biological process | metabolism                                                     | GO:0008152 | 8259 | 5119 | 24 | 24 | 1.01E-05 |
| Proteasome      | molecular function | threonine endopeptidase activity                               | GO:0004298 | 8974 | 18   | 19 | 13 | 5.95E-34 |
| Proteasome      | molecular function | endopeptidase activity                                         | GO:0004175 | 8974 | 267  | 19 | 13 | 2.48E-16 |
| Proteasome      | molecular function | peptidase activity                                             | GO:0008233 | 8974 | 389  | 19 | 13 | 3.36E-14 |
| Proteasome      | molecular function | hydrolase activity                                             | GO:0016787 | 8974 | 1384 | 19 | 17 | 1.82E-12 |
| Proteasome      | molecular function | catalytic activity                                             | GO:0003824 | 8974 | 3594 | 19 | 17 | 1.14E-05 |
| Proteasome      | cellular component | proteasome complex (sensu Eukaryota)                           | GO:0000502 | 7542 | 31   | 21 | 20 | 0.00E+00 |
| Proteasome      | cellular component | cytosol                                                        | GO:0005829 | 7542 | 213  | 21 | 21 | 1.09E-33 |
| Proteasome      | cellular component | proteasome core complex (sensu Eukaryota)                      | GO:0005839 | 7542 | 18   | 21 | 13 | 4.27E-32 |
| Proteasome      | cellular component | endoplasmic reticulum                                          | GO:0005783 | 7542 | 363  | 21 | 20 | 5.38E-26 |
| Proteasome      | cellular component | protein complex                                                | GO:0043234 | 7542 | 1247 | 21 | 21 | 3.35E-17 |
| Proteasome      | cellular component | cytoplasm                                                      | GO:0005737 | 7542 | 2255 | 21 | 21 | 9.13E-12 |
| Proteasome      | cellular component | nucleus                                                        | GO:0005634 | 7542 | 2503 | 21 | 21 | 8.24E-11 |
| Proteasome      | cellular component | membrane-bound organelle                                       | GO:0043227 | 7542 | 3685 | 21 | 21 | 2.85E-07 |
| Proteasome      | cellular component | intracellular membrane-bound organelle                         | GO:0043231 | 7542 | 3685 | 21 | 21 | 2.85E-07 |
| Proteasome      | cellular component | organelle                                                      | GO:0043226 | 7542 | 4197 | 21 | 21 | 4.41E-06 |
| Proteasome      | cellular component | intracellular organelle                                        | GO:0043229 | 7542 | 4197 | 21 | 21 | 4.41E-06 |
| Proteasome      | cellular component | proteasome regulatory particle (sensu Eukaryota)               | GO:0005838 | 7542 | 3    | 21 | 2  | 2.21E-05 |
| Proteasome      | biological process | ubiquitin-dependent protein catabolism                         | GO:0006511 | 8259 | 99   | 17 | 13 | 1.07E-22 |
| Proteasome      | biological process | modification-dependent protein catabolism                      | GO:0019941 | 8259 | 99   | 17 | 13 | 1.07E-22 |

| Protein complex | Ontology type      | GO Term                                                         | GO ID      | N    | M    | n  | m  | P-value   |
|-----------------|--------------------|-----------------------------------------------------------------|------------|------|------|----|----|-----------|
| Proteasome      | biological process | protein catabolism                                              | GO:0030163 | 8259 | 438  | 17 | 17 | 1.54E-22  |
| Proteasome      | biological process | biopolymer catabolism                                           | GO:0043285 | 8259 | 446  | 17 | 17 | 2.11E-22  |
| Proteasome      | biological process | macromolecule catabolism                                        | GO:0009057 | 8259 | 533  | 17 | 17 | 4.59E-21  |
| Proteasome      | biological process | catabolism                                                      | GO:0009056 | 8259 | 680  | 17 | 17 | 3.05E-19  |
| Proteasome      | biological process | proteolysis and peptidolysis                                    | GO:0006508 | 8259 | 427  | 17 | 15 | 4.92E-18  |
| Proteasome      | biological process | cellular protein catabolism                                     | GO:0044257 | 8259 | 427  | 17 | 15 | 4.92E-18  |
| Proteasome      | biological process | cellular macromolecule catabolism                               | GO:0044265 | 8259 | 522  | 17 | 15 | 1.02E-16  |
| Proteasome      | biological process | cellular catabolism                                             | GO:0044248 | 8259 | 632  | 17 | 15 | 1.82E-15  |
| Proteasome      | biological process | biopolymer metabolism                                           | GO:0043283 | 8259 | 1199 | 17 | 17 | 5.13E-15  |
| Proteasome      | biological process | protein metabolism                                              | GO:0019538 | 8259 | 2210 | 17 | 17 | 1.77E-10  |
| Proteasome      | biological process | macromolecule metabolism                                        | GO:0043170 | 8259 | 2471 | 17 | 17 | 1.19E-09  |
| Proteasome      | biological process | cellular protein metabolism                                     | GO:0044267 | 8259 | 2195 | 17 | 15 | 1.73E-07  |
| Proteasome      | biological process | cellular macromolecule metabolism                               | GO:0044260 | 8259 | 2356 | 17 | 15 | 4.78E-07  |
| Proteasome      | biological process | primary metabolism                                              | GO:0044238 | 8259 | 4660 | 17 | 17 | 5.88E-05  |
| RNA Pol II      | molecular function | DNA-directed RNA polymerase activity                            | GO:0003899 | 8974 | 30   | 10 | 10 | 3.23E-26  |
| RNA Pol II      | molecular function | nucleotidyltransferase activity                                 | GO:0016779 | 8974 | 80   | 10 | 10 | 1.77E-21  |
| RNA Pol II      | molecular function | transferase activity. transferring phosphorus-containing groups | GO:0016772 | 8974 | 714  | 10 | 10 | 9.59E-12  |
| RNA Pol II      | molecular function | transferase activity                                            | GO:0016740 | 8974 | 1173 | 10 | 10 | 1.41E-09  |
| RNA Pol II      | molecular function | nucleic acid binding                                            | GO:0003676 | 8974 | 2085 | 10 | 9  | 1.54E-05  |
| RNA Pol II      | cellular component | RNA polymerase complex                                          | GO:0030880 | 7542 | 20   | 10 | 8  | 2.19E-20  |
| RNA Pol II      | cellular component | DNA-directed RNA polymerase II. core complex                    | GO:0005665 | 7542 | 15   | 10 | 7  | 2.80E-18  |
| RNA Pol II      | cellular component | DNA-directed RNA polymerase II. holoenzyme                      | GO:0016591 | 7542 | 52   | 10 | 7  | 5.75E-14  |
| RNA Pol II      | cellular component | nucleoplasm                                                     | GO:0005654 | 7542 | 190  | 10 | 7  | 6.50E-10  |
| RNA Pol II      | cellular component | nucleus                                                         | GO:0005634 | 7542 | 2503 | 10 | 10 | 1.60E-05  |
| RNA Pol II      | cellular component | protein complex                                                 | GO:0043234 | 7542 | 1247 | 10 | 8  | 1.80E-05  |
| RNA Pol II      | biological process | transcription                                                   | GO:0006350 | 8259 | 1410 | 10 | 10 | 2.05E-08  |
| RNA Pol II      | biological process | transcription from Pol II promoter                              | GO:0006366 | 8259 | 358  | 10 | 7  | 2.91E-08  |
| RNA Pol II      | biological process | nucleobase. nucleoside. nucleotide and nucleic acid metabolism  | GO:0006139 | 8259 | 2155 | 10 | 10 | 1.44E-06  |
| RNA Pol II      | biological process | transcription. DNA-dependent                                    | GO:0006351 | 8259 | 1315 | 10 | 8  | 1.35E-05  |
| RNA Pol III     | molecular function | DNA-directed RNA polymerase activity                            | GO:0003899 | 8974 | 30   | 6  | 6  | 8.20E-16  |
| RNA Pol III     | molecular function | nucleotidyltransferase activity                                 | GO:0016779 | 8974 | 80   | 6  | 6  | 4.15E-13  |
| RNA Pol III     | molecular function | transferase activity. transferring phosphorus-containing groups | GO:0016772 | 8974 | 714  | 6  | 6  | 2.49E-07  |
| RNA Pol III     | molecular function | transferase activity                                            | GO:0016740 | 8974 | 1173 | 6  | 6  | 4.93E-06  |
| RNA Pol III     | molecular function | DNA binding                                                     | GO:0003677 | 8974 | 1297 | 6  | 6  | 9.02E-06  |
| RNA Pol III     | cellular component | DNA-directed RNA polymerase III complex                         | GO:0005666 | 7542 | 5    | 6  | 4  | 5.566E-13 |
| RNA Pol III     | cellular component | RNA polymerase complex                                          | GO:0030880 | 7542 | 20   | 6  | 4  | 5.377E-10 |
| RNA Pol III     | cellular component | nucleoplasm                                                     | GO:0005654 | 7542 | 190  | 6  | 4  | 5.629E-06 |
| RNA Pol III     | biological process | transcription from Pol III promoter                             | GO:0006383 | 8259 | 18   | 6  | 3  | 1.732E-07 |
| RNA Pol III     | biological process | regulation of transcription from Pol III promoter               | GO:0006359 | 8259 | 6    | 6  | 2  | 6.589E-06 |

| Protein complex | Ontology type      | GO Term                                                 | GO ID      | N    | M    | n  | m  | P-value   |
|-----------------|--------------------|---------------------------------------------------------|------------|------|------|----|----|-----------|
| RNA Pol III     | biological process | transcription                                           | GO:0006350 | 8259 | 1410 | 6  | 6  | 2.454E-05 |
| SRP             | molecular function | 7S RNA binding                                          | GO:0008312 | 8974 | 2    | 5  | 2  | 2.484E-07 |
| SRP             | molecular function | RNA binding                                             | GO:0003723 | 8974 | 412  | 5  | 4  | 2.111E-05 |
| SRP             | cellular component | signal recognition particle (sensu Eukaryota)           | GO:0005786 | 7542 | 9    | 5  | 5  | 6.204E-16 |
| SRP             | cellular component | signal recognition particle                             | GO:0048500 | 7542 | 9    | 5  | 5  | 6.204E-16 |
| SRP             | biological process | cotranslational protein-membrane targeting              | GO:0006613 | 8259 | 11   | 4  | 3  | 7.027E-09 |
| SRP             | biological process | protein-ER targeting                                    | GO:0045047 | 8259 | 11   | 4  | 3  | 7.027E-09 |
| SRP             | biological process | protein-membrane targeting                              | GO:0006612 | 8259 | 19   | 4  | 3  | 4.124E-08 |
| SRP             | biological process | secretory pathway                                       | GO:0045045 | 8259 | 118  | 4  | 3  | 1.126E-05 |
| SRP             | biological process | protein targeting                                       | GO:0006605 | 8259 | 122  | 4  | 3  | 1.245E-05 |
| SRP             | biological process | secretion                                               | GO:0046903 | 8259 | 152  | 4  | 3  | 2.412E-05 |
| SRS             | molecular function | structural constituent of ribosome                      | GO:0003735 | 8974 | 138  | 20 | 20 | 1.315E-37 |
| SRS             | molecular function | structural molecule activity                            | GO:0005198 | 8974 | 463  | 20 | 20 | 1.203E-26 |
| SRS             | cellular component | ribosome                                                | GO:0005840 | 7542 | 118  | 20 | 18 | 1.522E-31 |
| SRS             | cellular component | ribonucleoprotein complex                               | GO:0030529 | 7542 | 247  | 20 | 20 | 9.374E-31 |
| SRS             | cellular component | protein complex                                         | GO:0043234 | 7542 | 1247 | 20 | 20 | 2.051E-16 |
| SRS             | cellular component | non-membrane-bound organelle                            | GO:0043228 | 7542 | 881  | 20 | 18 | 2.121E-15 |
| SRS             | cellular component | intracellular non-membrane-bound organelle              | GO:0043232 | 7542 | 881  | 20 | 18 | 2.121E-15 |
| SRS             | cellular component | small ribosomal subunit                                 | GO:0015935 | 7542 | 30   | 20 | 8  | 2.763E-15 |
| SRS             | cellular component | cytosolic small ribosomal subunit (sensu Eukaryota)     | GO:0005843 | 7542 | 10   | 20 | 6  | 3.17E-14  |
| SRS             | cellular component | eukaryotic 48S initiation complex                       | GO:0016283 | 7542 | 10   | 20 | 6  | 3.17E-14  |
| SRS             | cellular component | eukaryotic 43S preinitiation complex                    | GO:0016282 | 7542 | 23   | 20 | 6  | 1.493E-11 |
| SRS             | cellular component | cytosolic ribosome (sensu Eukaryota)                    | GO:0005830 | 7542 | 25   | 20 | 6  | 2.61E-11  |
| SRS             | cellular component | cytoplasm                                               | GO:0005737 | 7542 | 2255 | 20 | 18 | 3.41E-08  |
| SRS             | cellular component | cytosol                                                 | GO:0005829 | 7542 | 213  | 20 | 6  | 1.316E-05 |
| SRS             | biological process | protein biosynthesis                                    | GO:0006412 | 8259 | 397  | 18 | 18 | 1.293E-24 |
| SRS             | biological process | macromolecule biosynthesis                              | GO:0009059 | 8259 | 445  | 18 | 18 | 1.053E-23 |
| SRS             | biological process | cellular biosynthesis                                   | GO:0044249 | 8259 | 697  | 18 | 18 | 3.85E-20  |
| SRS             | biological process | biosynthesis                                            | GO:0009058 | 8259 | 728  | 18 | 18 | 8.506E-20 |
| SRS             | biological process | cellular protein metabolism                             | GO:0044267 | 8259 | 2195 | 18 | 18 | 4.157E-11 |
| SRS             | biological process | protein metabolism                                      | GO:0019538 | 8259 | 2210 | 18 | 18 | 4.702E-11 |
| SRS             | biological process | cellular macromolecule metabolism                       | GO:0044260 | 8259 | 2356 | 18 | 18 | 1.494E-10 |
| SRS             | biological process | macromolecule metabolism                                | GO:0043170 | 8259 | 2471 | 18 | 18 | 3.533E-10 |
| SRS             | biological process | primary metabolism                                      | GO:0044238 | 8259 | 4660 | 18 | 18 | 3.312E-05 |
| SRS             | biological process | cellular metabolism                                     | GO:0044237 | 8259 | 4823 | 18 | 18 | 6.156E-05 |
| TAFIID          | molecular function | general RNA polymerase II transcription factor activity | GO:0016251 | 8974 | 28   | 13 | 6  | 8.796E-13 |
| TAFIID          | molecular function | transcription regulator activity                        | GO:0030528 | 8974 | 865  | 13 | 12 | 7.117E-12 |
| TAFIID          | molecular function | RNA polymerase II transcription factor activity         | GO:0003702 | 8974 | 164  | 13 | 8  | 1.249E-11 |
| TAFIID          | molecular function | DNA binding                                             | GO:0003677 | 8974 | 1297 | 13 | 12 | 8.969E-10 |
| TAFIID          | molecular function | nucleic acid binding                                    | GO:0003676 | 8974 | 2085 | 13 | 12 | 2.469E-07 |
| TAFIID          | molecular function | transcription factor activity                           | GO:0003700 | 8974 | 591  | 13 | 8  | 3.236E-07 |
| TAFIID          | molecular function | transcription initiation factor activity                | GO:0016986 | 8974 | 5    | 13 | 2  | 1.933E-05 |
| TAFIID          | cellular component | transcription factor TFIID complex                      | GO:0005669 | 7542 | 14   | 13 | 10 | 1.753E-27 |

| Protein complex | Ontology type      | GO Term                                                                      | GO ID      | N    | M    | n  | m  | P-value   |
|-----------------|--------------------|------------------------------------------------------------------------------|------------|------|------|----|----|-----------|
| TAFIID          | cellular component | transcription factor complex                                                 | GO:0005667 | 7542 | 77   | 13 | 11 | 4.591E-21 |
| TAFIID          | cellular component | DNA-directed RNA polymerase II. holoenzyme                                   | GO:0016591 | 7542 | 52   | 13 | 10 | 2.732E-20 |
| TAFIID          | cellular component | nucleoplasm                                                                  | GO:0005654 | 7542 | 190  | 13 | 11 | 1.452E-16 |
| TAFIID          | cellular component | protein complex                                                              | GO:0043234 | 7542 | 1247 | 13 | 11 | 1.37E-07  |
| TAFIID          | cellular component | nucleus                                                                      | GO:0005634 | 7542 | 2503 | 13 | 13 | 5.802E-07 |
| TAFIID          | cellular component | membrane-bound organelle                                                     | GO:0043227 | 7542 | 3685 | 13 | 13 | 8.946E-05 |
| TAFIID          | cellular component | intracellular membrane-bound organelle                                       | GO:0043231 | 7542 | 3685 | 13 | 13 | 8.946E-05 |
| TAFIID          | biological process | transcription initiation                                                     | GO:0006352 | 8259 | 41   | 13 | 8  | 2.258E-16 |
| TAFIID          | biological process | transcription                                                                | GO:0006350 | 8259 | 1410 | 13 | 13 | 9.995E-11 |
| TAFIID          | biological process | transcription. DNA-dependent                                                 | GO:0006351 | 8259 | 1315 | 13 | 12 | 2.825E-09 |
| TAFIID          | biological process | regulation of transcription                                                  | GO:0045449 | 8259 | 1346 | 13 | 12 | 3.726E-09 |
| TAFIID          | biological process | regulation of nucleobase, nucleoside, nucleotide and nucleic acid metabolism | GO:0019219 | 8259 | 1372 | 13 | 12 | 4.676E-09 |
| TAFIID          | biological process | regulation of metabolism                                                     | GO:0019222 | 8259 | 1494 | 13 | 12 | 1.284E-08 |
| TAFIID          | biological process | nucleobase, nucleoside, nucleotide and nucleic acid metabolism               | GO:0006139 | 8259 | 2155 | 13 | 13 | 2.53E-08  |
| TAFIID          | biological process | regulation of transcription. DNA-dependent                                   | GO:0006355 | 8259 | 1268 | 13 | 11 | 6.217E-08 |
| TAFIID          | biological process | regulation of physiological process                                          | GO:0050791 | 8259 | 1892 | 13 | 12 | 2.087E-07 |
| TAFIID          | biological process | regulation of biological process                                             | GO:0050789 | 8259 | 2157 | 13 | 12 | 9.726E-07 |
| TAFIID          | biological process | regulation of transcription factor activity                                  | GO:0051090 | 8259 | 6    | 13 | 2  | 3.419E-05 |
| VHL             | biological process | ubiquitin cycle                                                              | GO:0006512 | 8259 | 435  | 4  | 4  | 7.596E-06 |

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| Protein complex | Ontology type      | GO Term                                                    | GO ID      | N    | M   | n | m | P-value  |
|-----------------|--------------------|------------------------------------------------------------|------------|------|-----|---|---|----------|
| Arp2-3          | molecular function | structural molecule activity                               | GO:0005198 | 9140 | 473 | 5 | 5 | 3.64E-07 |
| Arp2-3          | molecular function | structural constituent of cytoskeleton                     | GO:0005200 | 9140 | 67  | 5 | 3 | 3.73E-06 |
| Arp2-3          | cellular component | Arp2/3 protein complex                                     | GO:0005885 | 7684 | 4   | 5 | 4 | 3.44E-14 |
| Arp2-3          | cellular component | actin cytoskeleton                                         | GO:0015629 | 7684 | 159 | 5 | 4 | 8.69E-07 |
| Arp2-3          | cellular component | cytoskeleton                                               | GO:0005856 | 7684 | 545 | 5 | 5 | 1.76E-06 |
| Arp2-3          | cellular component | non-membrane-bound organelle                               | GO:0043228 | 7684 | 893 | 5 | 5 | 2.10E-05 |
| Arp2-3          | cellular component | intracellular non-membrane-bound organelle                 | GO:0043232 | 7684 | 893 | 5 | 5 | 2.10E-05 |
| Arp2-3          | biological process | regulation of actin filament polymerization                | GO:0030833 | 8419 | 7   | 4 | 3 | 1.41E-09 |
| Arp2-3          | biological process | actin filament polymerization                              | GO:0030041 | 8419 | 12  | 4 | 3 | 8.84E-09 |
| Arp2-3          | biological process | protein polymerization                                     | GO:0051258 | 8419 | 24  | 4 | 3 | 8.13E-08 |
| Arp2-3          | biological process | cell motility                                              | GO:0006928 | 8419 | 153 | 4 | 4 | 1.05E-07 |
| Arp2-3          | biological process | regulation of actin polymerization and/or depolymerization | GO:0008064 | 8419 | 27  | 4 | 3 | 1.17E-07 |
| Arp2-3          | biological process | regulation of actin filament length                        | GO:0030832 | 8419 | 27  | 4 | 3 | 1.17E-07 |

| Protein complex | Ontology type      | GO Term                                             | GO ID      | N    | M    | n  | m  | P-value  |
|-----------------|--------------------|-----------------------------------------------------|------------|------|------|----|----|----------|
| Arp2-3          | biological process | actin polymerization and/or depolymerization        | GO:0008154 | 8419 | 35   | 4  | 3  | 2.63E-07 |
| Arp2-3          | biological process | regulation of cell organization and biogenesis      | GO:0051128 | 8419 | 39   | 4  | 3  | 3.67E-07 |
| Arp2-3          | biological process | regulation of protein metabolism                    | GO:0051246 | 8419 | 71   | 4  | 3  | 2.29E-06 |
| Arp2-3          | biological process | actin cytoskeleton organization and biogenesis      | GO:0030036 | 8419 | 92   | 4  | 3  | 5.01E-06 |
| Arp2-3          | biological process | actin filament-based process                        | GO:0030029 | 8419 | 99   | 4  | 3  | 6.26E-06 |
| APC             | molecular function | ubiquitin-protein ligase activity                   | GO:0004842 | 9140 | 296  | 7  | 4  | 3.49E-05 |
| APC             | molecular function | acid-amino acid ligase activity                     | GO:0016881 | 9140 | 312  | 7  | 4  | 4.30E-05 |
| APC             | molecular function | ligase activity, forming carbon-nitrogen bonds      | GO:0016879 | 9140 | 337  | 7  | 4  | 5.82E-05 |
| APC             | cellular component | nuclear ubiquitin ligase complex                    | GO:0000152 | 7684 | 9    | 7  | 6  | 2.06E-18 |
| APC             | cellular component | anaphase-promoting complex                          | GO:0005680 | 7684 | 9    | 7  | 6  | 2.06E-18 |
| APC             | cellular component | ubiquitin ligase complex                            | GO:0000151 | 7684 | 255  | 7  | 6  | 8.58E-09 |
| APC             | biological process | mitosis                                             | GO:0007067 | 8419 | 115  | 8  | 8  | 9.48E-16 |
| APC             | biological process | M phase of mitotic cell cycle                       | GO:0000087 | 8419 | 117  | 8  | 8  | 1.09E-15 |
| APC             | biological process | M phase                                             | GO:0000279 | 8419 | 142  | 8  | 8  | 5.38E-15 |
| APC             | biological process | mitotic cell cycle                                  | GO:0000278 | 8419 | 173  | 8  | 8  | 2.71E-14 |
| APC             | biological process | cell division                                       | GO:0051301 | 8419 | 122  | 8  | 7  | 8.92E-13 |
| APC             | biological process | cell cycle                                          | GO:0007049 | 8419 | 514  | 8  | 8  | 1.83E-10 |
| APC             | biological process | mitotic metaphase/anaphase transition               | GO:0007091 | 8419 | 3    | 8  | 3  | 5.63E-10 |
| APC             | biological process | regulation of cell cycle                            | GO:0000074 | 8419 | 338  | 8  | 7  | 1.22E-09 |
| APC             | biological process | mitotic anaphase                                    | GO:0000090 | 8419 | 5    | 8  | 3  | 5.63E-09 |
| APC             | biological process | anaphase                                            | GO:0051322 | 8419 | 5    | 8  | 3  | 5.63E-09 |
| APC             | biological process | ubiquitin cycle                                     | GO:0006512 | 8419 | 438  | 8  | 7  | 7.53E-09 |
| APC             | biological process | interphase                                          | GO:0051325 | 8419 | 69   | 8  | 4  | 2.82E-07 |
| APC             | biological process | interphase of mitotic cell cycle                    | GO:0051329 | 8419 | 69   | 8  | 4  | 2.82E-07 |
| APC             | biological process | regulation of mitotic metaphase/anaphase transition | GO:0030071 | 8419 | 2    | 8  | 2  | 7.90E-07 |
| APC             | biological process | ubiquitin-dependent protein catabolism              | GO:0006511 | 8419 | 105  | 8  | 4  | 1.54E-06 |
| APC             | biological process | modification-dependent protein catabolism           | GO:0019941 | 8419 | 105  | 8  | 4  | 1.54E-06 |
| APC             | biological process | regulation of mitosis                               | GO:0007088 | 8419 | 30   | 8  | 3  | 2.26E-06 |
| APC             | biological process | G2/M transition of mitotic cell cycle               | GO:0000086 | 8419 | 40   | 8  | 3  | 5.47E-06 |
| APC             | biological process | protein modification                                | GO:0006464 | 8419 | 1253 | 8  | 7  | 1.11E-05 |
| Centrosome      | molecular function | tubulin binding                                     | GO:0015631 | 9140 | 29   | 32 | 5  | 4.24E-08 |
| Centrosome      | molecular function | motor activity                                      | GO:0003774 | 9140 | 108  | 32 | 6  | 1.67E-06 |
| Centrosome      | molecular function | microtubule binding                                 | GO:0008017 | 9140 | 21   | 32 | 3  | 4.97E-05 |
| Centrosome      | cellular component | microtubule cytoskeleton                            | GO:0015630 | 7684 | 179  | 32 | 23 | 1.55E-31 |
| Centrosome      | cellular component | microtubule organizing center                       | GO:0005815 | 7684 | 39   | 32 | 14 | 2.37E-25 |
| Centrosome      | cellular component | spindle                                             | GO:0005819 | 7684 | 50   | 32 | 14 | 1.44E-23 |
| Centrosome      | cellular component | cytoskeleton                                        | GO:0005856 | 7684 | 545  | 32 | 25 | 2.32E-23 |
| Centrosome      | cellular component | spindle pole                                        | GO:0000922 | 7684 | 40   | 32 | 13 | 7.59E-23 |
| Centrosome      | cellular component | centrosome                                          | GO:0005813 | 7684 | 35   | 32 | 12 | 2.03E-21 |
| Centrosome      | cellular component | microtubule                                         | GO:0005874 | 7684 | 127  | 32 | 15 | 3.60E-19 |
| Centrosome      | cellular component | non-membrane-bound organelle                        | GO:0043228 | 7684 | 893  | 32 | 25 | 4.76E-18 |
| Centrosome      | cellular component | intracellular non-membrane-bound organelle          | GO:0043232 | 7684 | 893  | 32 | 25 | 4.76E-18 |

| Protein complex | Ontology type      | GO Term                                                    | GO ID      | N    | M    | n  | m  | P-value  |
|-----------------|--------------------|------------------------------------------------------------|------------|------|------|----|----|----------|
| Centrosome      | cellular component | microtubule associated complex                             | GO:0005875 | 7684 | 76   | 32 | 7  | 1.93E-08 |
| Centrosome      | cellular component | dynein complex                                             | GO:0030286 | 7684 | 22   | 32 | 5  | 2.26E-08 |
| Centrosome      | cellular component | gamma-tubulin complex                                      | GO:0000930 | 7684 | 5    | 32 | 3  | 6.52E-07 |
| Centrosome      | cellular component | spindle microtubule                                        | GO:0005876 | 7684 | 7    | 32 | 3  | 2.27E-06 |
| Centrosome      | cellular component | cAMP-dependent protein kinase complex                      | GO:0005952 | 7684 | 8    | 32 | 3  | 3.62E-06 |
| Centrosome      | cellular component | organelle                                                  | GO:0043226 | 7684 | 4267 | 32 | 29 | 1.87E-05 |
| Centrosome      | cellular component | intracellular organelle                                    | GO:0043229 | 7684 | 4267 | 32 | 29 | 1.87E-05 |
| Centrosome      | cellular component | intracellular                                              | GO:0005622 | 7684 | 5168 | 32 | 31 | 4.96E-05 |
| Centrosome      | cellular component | centriole                                                  | GO:0005814 | 7684 | 3    | 32 | 2  | 5.03E-05 |
| Centrosome      | cellular component | polar microtubule                                          | GO:0005827 | 7684 | 3    | 32 | 2  | 5.03E-05 |
| Centrosome      | biological process | microtubule-based process                                  | GO:0007017 | 8419 | 109  | 27 | 12 | 1.77E-16 |
| Centrosome      | biological process | cytoskeleton organization and biogenesis                   | GO:0007010 | 8419 | 258  | 27 | 13 | 2.13E-13 |
| Centrosome      | biological process | mitosis                                                    | GO:0007067 | 8419 | 115  | 27 | 10 | 1.06E-12 |
| Centrosome      | biological process | microtubule cytoskeleton organization and biogenesis       | GO:0000226 | 8419 | 48   | 27 | 8  | 1.24E-12 |
| Centrosome      | biological process | M phase of mitotic cell cycle                              | GO:0000087 | 8419 | 117  | 27 | 10 | 1.26E-12 |
| Centrosome      | biological process | mitotic cell cycle                                         | GO:0000278 | 8419 | 173  | 27 | 11 | 1.97E-12 |
| Centrosome      | biological process | M phase                                                    | GO:0000279 | 8419 | 142  | 27 | 10 | 8.95E-12 |
| Centrosome      | biological process | organelle organization and biogenesis                      | GO:0006996 | 8419 | 573  | 27 | 15 | 2.11E-11 |
| Centrosome      | biological process | microtubule nucleation                                     | GO:0007020 | 8419 | 12   | 27 | 5  | 1.79E-10 |
| Centrosome      | biological process | cell organization and biogenesis                           | GO:0016043 | 8419 | 708  | 27 | 15 | 4.30E-10 |
| Centrosome      | biological process | cell cycle                                                 | GO:0007049 | 8419 | 514  | 27 | 12 | 1.77E-08 |
| Centrosome      | biological process | microtubule-based movement                                 | GO:0007018 | 8419 | 57   | 27 | 4  | 2.95E-05 |
| Centrosome      | biological process | cytoskeleton-dependent intracellular transport             | GO:0030705 | 8419 | 57   | 27 | 4  | 2.95E-05 |
| Centrosome      | biological process | cell division                                              | GO:0051301 | 8419 | 122  | 27 | 5  | 3.68E-05 |
| Centrosome      | biological process | protein polymerization                                     | GO:0051258 | 8419 | 24   | 27 | 3  | 5.69E-05 |
| Dynactin        | molecular function | motor activity                                             | GO:0003774 | 9140 | 108  | 7  | 3  | 5.43E-05 |
| Dynactin        | cellular component | cytoskeleton                                               | GO:0005856 | 7684 | 545  | 7  | 7  | 8.71E-09 |
| Dynactin        | cellular component | F-actin capping protein complex                            | GO:0008290 | 7684 | 7    | 7  | 3  | 1.62E-08 |
| Dynactin        | cellular component | actin cytoskeleton                                         | GO:0015629 | 7684 | 159  | 7  | 5  | 7.24E-08 |
| Dynactin        | cellular component | non-membrane-bound organelle                               | GO:0043228 | 7684 | 893  | 7  | 7  | 2.80E-07 |
| Dynactin        | cellular component | intracellular non-membrane-bound organelle                 | GO:0043232 | 7684 | 893  | 7  | 7  | 2.80E-07 |
| Dynactin        | biological process | actin filament depolymerization                            | GO:0030042 | 8419 | 18   | 6  | 3  | 1.63E-07 |
| Dynactin        | biological process | regulation of actin filament depolymerization              | GO:0030834 | 8419 | 18   | 6  | 3  | 1.63E-07 |
| Dynactin        | biological process | negative regulation of actin filament depolymerization     | GO:0030835 | 8419 | 18   | 6  | 3  | 1.63E-07 |
| Dynactin        | biological process | barbed-end actin filament capping                          | GO:0051016 | 8419 | 18   | 6  | 3  | 1.63E-07 |
| Dynactin        | biological process | negative regulation of cell organization and biogenesis    | GO:0051129 | 8419 | 26   | 6  | 3  | 5.20E-07 |
| Dynactin        | biological process | protein depolymerization                                   | GO:0051261 | 8419 | 26   | 6  | 3  | 5.20E-07 |
| Dynactin        | biological process | regulation of actin polymerization and/or depolymerization | GO:0008064 | 8419 | 27   | 6  | 3  | 5.85E-07 |
| Dynactin        | biological process | regulation of actin filament length                        | GO:0030832 | 8419 | 27   | 6  | 3  | 5.85E-07 |

| Protein complex | Ontology type      | GO Term                                                                                                     | GO ID      | N    | M    | n | m | P-value  |
|-----------------|--------------------|-------------------------------------------------------------------------------------------------------------|------------|------|------|---|---|----------|
| Dynactin        | biological process | actin polymerization and/or depolymerization                                                                | GO:0008154 | 8419 | 35   | 6 | 3 | 1.31E-06 |
| Dynactin        | biological process | negative regulation of protein metabolism                                                                   | GO:0051248 | 8419 | 38   | 6 | 3 | 1.68E-06 |
| Dynactin        | biological process | regulation of cell organization and biogenesis                                                              | GO:0051128 | 8419 | 39   | 6 | 3 | 1.82E-06 |
| Dynactin        | biological process | organelle organization and biogenesis                                                                       | GO:0006996 | 8419 | 573  | 6 | 5 | 8.14E-06 |
| Dynactin        | biological process | regulation of protein metabolism                                                                            | GO:0051246 | 8419 | 71   | 6 | 3 | 1.13E-05 |
| Dynactin        | biological process | cytoskeleton organization and biogenesis                                                                    | GO:0007010 | 8419 | 258  | 6 | 4 | 1.23E-05 |
| Dynactin        | biological process | cell organization and biogenesis                                                                            | GO:0016043 | 8419 | 708  | 6 | 5 | 2.32E-05 |
| Dynactin        | biological process | actin cytoskeleton organization and biogenesis                                                              | GO:0030036 | 8419 | 92   | 6 | 3 | 2.47E-05 |
| Dynactin        | biological process | actin filament-based process                                                                                | GO:0030029 | 8419 | 99   | 6 | 3 | 3.08E-05 |
| Exocyst         | cellular component | exocyst                                                                                                     | GO:0000145 | 7684 | 5    | 6 | 5 | 2.69E-17 |
| Exocyst         | cellular component | cell cortex                                                                                                 | GO:0005938 | 7684 | 20   | 6 | 5 | 4.17E-13 |
| Exocyst         | biological process | exocytosis                                                                                                  | GO:0006887 | 8419 | 50   | 7 | 7 | 1.68E-16 |
| Exocyst         | biological process | secretory pathway                                                                                           | GO:0045045 | 8419 | 118  | 7 | 7 | 8.89E-14 |
| Exocyst         | biological process | secretion                                                                                                   | GO:0046903 | 8419 | 151  | 7 | 7 | 5.20E-13 |
| Exocyst         | biological process | vesicle-mediated transport                                                                                  | GO:0016192 | 8419 | 254  | 7 | 7 | 2.10E-11 |
| Exocyst         | biological process | vesicle docking                                                                                             | GO:0048278 | 8419 | 19   | 7 | 4 | 6.46E-10 |
| Exocyst         | biological process | protein transport                                                                                           | GO:0015031 | 8419 | 441  | 7 | 7 | 1.03E-09 |
| Exocyst         | biological process | establishment of protein localization                                                                       | GO:0045184 | 8419 | 443  | 7 | 7 | 1.07E-09 |
| Exocyst         | biological process | protein localization                                                                                        | GO:0008104 | 8419 | 457  | 7 | 7 | 1.33E-09 |
| Exocyst         | biological process | vesicle docking during exocytosis                                                                           | GO:0006904 | 8419 | 18   | 7 | 3 | 2.86E-07 |
| Exocyst         | biological process | transport                                                                                                   | GO:0006810 | 8419 | 1591 | 7 | 7 | 8.52E-06 |
| Exocyst         | biological process | establishment of localization                                                                               | GO:0051234 | 8419 | 1593 | 7 | 7 | 8.59E-06 |
| Exocyst         | biological process | localization                                                                                                | GO:0051179 | 8419 | 1606 | 7 | 7 | 9.09E-06 |
| Exosome         | molecular function | exonuclease activity                                                                                        | GO:0004527 | 9140 | 41   | 5 | 5 | 1.41E-12 |
| Exosome         | molecular function | nuclease activity                                                                                           | GO:0004518 | 9140 | 95   | 5 | 5 | 1.09E-10 |
| Exosome         | molecular function | 3'-5' exonuclease activity                                                                                  | GO:0008408 | 9140 | 22   | 5 | 4 | 1.26E-10 |
| Exosome         | molecular function | 3'-5'-exoribonuclease activity                                                                              | GO:0000175 | 9140 | 8    | 5 | 3 | 4.40E-09 |
| Exosome         | molecular function | exoribonuclease activity                                                                                    | GO:0004532 | 9140 | 10   | 5 | 3 | 9.42E-09 |
| Exosome         | molecular function | exoribonuclease activity, producing 5'-phosphomonoesters                                                    | GO:0016896 | 9140 | 10   | 5 | 3 | 9.42E-09 |
| Exosome         | molecular function | exonuclease activity, active with either ribo- or deoxyribonucleic acids and producing 5'-phosphomonoesters | GO:0016796 | 9140 | 12   | 5 | 3 | 1.73E-08 |
| Exosome         | molecular function | RNA binding                                                                                                 | GO:0003723 | 9140 | 415  | 5 | 5 | 1.89E-07 |
| Exosome         | molecular function | hydrolase activity, acting on ester bonds                                                                   | GO:0016788 | 9140 | 451  | 5 | 5 | 2.86E-07 |
| Exosome         | molecular function | ribonuclease activity                                                                                       | GO:0004540 | 9140 | 39   | 5 | 3 | 7.14E-07 |
| Exosome         | molecular function | hydrolase activity                                                                                          | GO:0016787 | 9140 | 1414 | 5 | 5 | 8.81E-05 |
| Exosome         | cellular component | exosome (RNase complex)                                                                                     | GO:0000178 | 7684 | 6    | 5 | 4 | 5.17E-13 |
| Exosome         | cellular component | nucleolus                                                                                                   | GO:0005730 | 7684 | 71   | 5 | 4 | 3.32E-08 |
| Exosome         | biological process | rRNA processing                                                                                             | GO:0006364 | 8419 | 29   | 5 | 5 | 3.37E-13 |
| Exosome         | biological process | rRNA metabolism                                                                                             | GO:0016072 | 8419 | 33   | 5 | 5 | 6.74E-13 |
| Exosome         | biological process | ribosome biogenesis                                                                                         | GO:0007046 | 8419 | 45   | 5 | 5 | 3.47E-12 |

| Protein complex | Ontology type      | GO Term                                                         | GO ID      | N    | M    | n  | m  | P-value  |
|-----------------|--------------------|-----------------------------------------------------------------|------------|------|------|----|----|----------|
| Exosome         | biological process | ribosome biogenesis and assembly                                | GO:0042254 | 8419 | 50   | 5  | 5  | 6.02E-12 |
| Exosome         | biological process | cytoplasm organization and biogenesis                           | GO:0007028 | 8419 | 62   | 5  | 5  | 1.84E-11 |
| Exosome         | biological process | RNA processing                                                  | GO:0006396 | 8419 | 263  | 5  | 5  | 2.87E-08 |
| Exosome         | biological process | RNA metabolism                                                  | GO:0016070 | 8419 | 334  | 5  | 5  | 9.55E-08 |
| Exosome         | biological process | organelle organization and biogenesis                           | GO:0006996 | 8419 | 573  | 5  | 5  | 1.44E-06 |
| Exosome         | biological process | cell organization and biogenesis                                | GO:0016043 | 8419 | 708  | 5  | 5  | 4.15E-06 |
| Exosome         | biological process | biopolymer metabolism                                           | GO:0043283 | 8419 | 1223 | 5  | 5  | 6.42E-05 |
| FA              | molecular function | cytoskeletal protein binding                                    | GO:0008092 | 9140 | 239  | 40 | 14 | 6.07E-13 |
| FA              | molecular function | actin binding                                                   | GO:0003779 | 9140 | 163  | 40 | 11 | 6.12E-11 |
| FA              | molecular function | phorbol ester receptor activity                                 | GO:0001565 | 9140 | 10   | 40 | 5  | 3.07E-10 |
| FA              | molecular function | protein kinase C activity                                       | GO:0004697 | 9140 | 10   | 40 | 5  | 3.07E-10 |
| FA              | molecular function | protein kinase activity                                         | GO:0004672 | 9140 | 463  | 40 | 13 | 4.19E-08 |
| FA              | molecular function | protein serine/threonine kinase activity                        | GO:0004674 | 9140 | 357  | 40 | 11 | 2.31E-07 |
| FA              | molecular function | phosphotransferase activity, alcohol group as acceptor          | GO:0016773 | 9140 | 540  | 40 | 13 | 2.54E-07 |
| FA              | molecular function | protein binding                                                 | GO:0005515 | 9140 | 2108 | 40 | 24 | 5.61E-07 |
| FA              | molecular function | protein-tyrosine kinase activity                                | GO:0004713 | 9140 | 235  | 40 | 9  | 5.75E-07 |
| FA              | molecular function | diacylglycerol binding                                          | GO:0019992 | 9140 | 39   | 40 | 5  | 6.40E-07 |
| FA              | molecular function | kinase activity                                                 | GO:0016301 | 9140 | 642  | 40 | 13 | 1.84E-06 |
| FA              | molecular function | transferase activity, transferring phosphorus-containing groups | GO:0016772 | 9140 | 728  | 40 | 13 | 7.43E-06 |
| FA              | cellular component | cytoskeleton                                                    | GO:0005856 | 7684 | 545  | 30 | 15 | 2.74E-10 |
| FA              | cellular component | actin cytoskeleton                                              | GO:0015629 | 7684 | 159  | 30 | 8  | 1.12E-07 |
| FA              | cellular component | non-membrane-bound organelle                                    | GO:0043228 | 7684 | 893  | 30 | 15 | 2.44E-07 |
| FA              | cellular component | intracellular non-membrane-bound organelle                      | GO:0043232 | 7684 | 893  | 30 | 15 | 2.44E-07 |
| FA              | cellular component | caveolar membrane                                               | GO:0016599 | 7684 | 4    | 30 | 2  | 8.80E-05 |
| FA              | biological process | cell communication                                              | GO:0007154 | 8419 | 2315 | 34 | 27 | 4.14E-10 |
| FA              | biological process | phosphorus metabolism                                           | GO:0006793 | 8419 | 634  | 34 | 16 | 5.44E-10 |
| FA              | biological process | phosphate metabolism                                            | GO:0006796 | 8419 | 634  | 34 | 16 | 5.44E-10 |
| FA              | biological process | intracellular signaling cascade                                 | GO:0007242 | 8419 | 809  | 34 | 17 | 2.09E-09 |
| FA              | biological process | protein amino acid phosphorylation                              | GO:0006468 | 8419 | 443  | 34 | 13 | 6.70E-09 |
| FA              | biological process | phosphorylation                                                 | GO:0016310 | 8419 | 513  | 34 | 13 | 3.90E-08 |
| FA              | biological process | signal transduction                                             | GO:0007165 | 8419 | 1850 | 34 | 22 | 1.01E-07 |
| FA              | biological process | protein modification                                            | GO:0006464 | 8419 | 1253 | 34 | 15 | 4.06E-05 |
| LRS             | molecular function | structural constituent of ribosome                              | GO:0003735 | 9140 | 140  | 18 | 18 | 7.00E-34 |
| LRS             | molecular function | structural molecule activity                                    | GO:0005198 | 9140 | 473  | 18 | 18 | 5.19E-24 |
| LRS             | molecular function | RNA binding                                                     | GO:0003723 | 9140 | 415  | 18 | 11 | 3.55E-11 |
| LRS             | molecular function | rRNA binding                                                    | GO:0019843 | 9140 | 5    | 18 | 2  | 3.65E-05 |
| LRS             | cellular component | ribosome                                                        | GO:0005840 | 7684 | 119  | 18 | 18 | 6.92E-34 |
| LRS             | cellular component | ribonucleoprotein complex                                       | GO:0030529 | 7684 | 251  | 18 | 18 | 9.80E-28 |
| LRS             | cellular component | large ribosomal subunit                                         | GO:0015934 | 7684 | 24   | 18 | 11 | 5.73E-25 |
| LRS             | cellular component | cytosolic large ribosomal subunit (sensu Eukaryota)             | GO:0005842 | 7684 | 15   | 18 | 10 | 6.65E-25 |

| Protein complex | Ontology type      | GO Term                                                    | GO ID      | N    | M    | n  | m  | P-value  |
|-----------------|--------------------|------------------------------------------------------------|------------|------|------|----|----|----------|
| LRS             | cellular component | cytosolic ribosome (sensu Eukaryota)                       | GO:0005830 | 7684 | 26   | 18 | 10 | 1.16E-21 |
| LRS             | cellular component | non-membrane-bound organelle                               | GO:0043228 | 7684 | 893  | 18 | 18 | 1.28E-17 |
| LRS             | cellular component | intracellular non-membrane-bound organelle                 | GO:0043232 | 7684 | 893  | 18 | 18 | 1.28E-17 |
| LRS             | cellular component | protein complex                                            | GO:0043234 | 7684 | 1274 | 18 | 18 | 8.10E-15 |
| LRS             | cellular component | cytosol                                                    | GO:0005829 | 7684 | 226  | 18 | 10 | 1.42E-11 |
| LRS             | cellular component | cytoplasm                                                  | GO:0005737 | 7684 | 2299 | 18 | 18 | 3.52E-10 |
| LRS             | cellular component | organelle                                                  | GO:0043226 | 7684 | 4267 | 18 | 18 | 2.48E-05 |
| LRS             | cellular component | intracellular organelle                                    | GO:0043229 | 7684 | 4267 | 18 | 18 | 2.48E-05 |
| LRS             | biological process | protein biosynthesis                                       | GO:0006412 | 8419 | 400  | 18 | 18 | 1.05E-24 |
| LRS             | biological process | macromolecule biosynthesis                                 | GO:0009059 | 8419 | 447  | 18 | 18 | 8.09E-24 |
| LRS             | biological process | cellular biosynthesis                                      | GO:0044249 | 8419 | 706  | 18 | 18 | 3.44E-20 |
| LRS             | biological process | biosynthesis                                               | GO:0009058 | 8419 | 737  | 18 | 18 | 7.53E-20 |
| LRS             | biological process | cellular protein metabolism                                | GO:0044267 | 8419 | 2230 | 18 | 18 | 3.92E-11 |
| LRS             | biological process | protein metabolism                                         | GO:0019538 | 8419 | 2246 | 18 | 18 | 4.46E-11 |
| LRS             | biological process | cellular macromolecule metabolism                          | GO:0044260 | 8419 | 2394 | 18 | 18 | 1.41E-10 |
| LRS             | biological process | macromolecule metabolism                                   | GO:0043170 | 8419 | 2512 | 18 | 18 | 3.37E-10 |
| LRS             | biological process | primary metabolism                                         | GO:0044238 | 8419 | 4747 | 18 | 18 | 3.27E-05 |
| LRS             | biological process | cellular metabolism                                        | GO:0044237 | 8419 | 4914 | 18 | 18 | 6.10E-05 |
| Nucleosome      | molecular function | DNA binding                                                | GO:0003677 | 9140 | 1324 | 24 | 24 | 6.09E-21 |
| Nucleosome      | molecular function | nucleic acid binding                                       | GO:0003676 | 9140 | 2115 | 24 | 24 | 5.02E-16 |
| Nucleosome      | cellular component | chromatin                                                  | GO:0000785 | 7684 | 100  | 24 | 24 | 0.00E+00 |
| Nucleosome      | cellular component | nucleosome                                                 | GO:0000786 | 7684 | 45   | 24 | 24 | 0.00E+00 |
| Nucleosome      | cellular component | chromosome                                                 | GO:0005694 | 7684 | 182  | 24 | 24 | 2.06E-40 |
| Nucleosome      | cellular component | non-membrane-bound organelle                               | GO:0043228 | 7684 | 893  | 24 | 24 | 2.80E-23 |
| Nucleosome      | cellular component | intracellular non-membrane-bound organelle                 | GO:0043232 | 7684 | 893  | 24 | 24 | 2.80E-23 |
| Nucleosome      | cellular component | protein complex                                            | GO:0043234 | 7684 | 1274 | 24 | 24 | 1.55E-19 |
| Nucleosome      | cellular component | nucleus                                                    | GO:0005634 | 7684 | 2551 | 24 | 24 | 2.99E-12 |
| Nucleosome      | cellular component | membrane-bound organelle                                   | GO:0043227 | 7684 | 3750 | 24 | 24 | 3.21E-08 |
| Nucleosome      | cellular component | intracellular membrane-bound organelle                     | GO:0043231 | 7684 | 3750 | 24 | 24 | 3.21E-08 |
| Nucleosome      | cellular component | organelle                                                  | GO:0043226 | 7684 | 4267 | 24 | 24 | 7.18E-07 |
| Nucleosome      | cellular component | intracellular organelle                                    | GO:0043229 | 7684 | 4267 | 24 | 24 | 7.18E-07 |
| Nucleosome      | cellular component | intracellular                                              | GO:0005622 | 7684 | 5168 | 24 | 24 | 7.21E-05 |
| Nucleosome      | biological process | chromatin assembly or disassembly                          | GO:0006333 | 8419 | 85   | 24 | 24 | 0.00E+00 |
| Nucleosome      | biological process | nucleosome assembly                                        | GO:0006334 | 8419 | 54   | 24 | 24 | 0.00E+00 |
| Nucleosome      | biological process | establishment and/or maintenance of chromatin architecture | GO:0006325 | 8419 | 161  | 24 | 24 | 9.73E-43 |
| Nucleosome      | biological process | DNA packaging                                              | GO:0006323 | 8419 | 167  | 24 | 24 | 2.51E-42 |
| Nucleosome      | biological process | protein complex assembly                                   | GO:0006461 | 8419 | 190  | 24 | 24 | 6.91E-41 |
| Nucleosome      | biological process | chromosome organization and biogenesis (sensu Eukaryota)   | GO:0007001 | 8419 | 197  | 24 | 24 | 1.74E-40 |
| Nucleosome      | biological process | chromosome organization and biogenesis                     | GO:0051276 | 8419 | 204  | 24 | 24 | 4.24E-40 |
| Nucleosome      | biological process | DNA metabolism                                             | GO:0006259 | 8419 | 411  | 24 | 24 | 1.75E-32 |
| Nucleosome      | biological process | organelle organization and biogenesis                      | GO:0006996 | 8419 | 573  | 24 | 24 | 6.19E-29 |
| Nucleosome      | biological process | cell organization and biogenesis                           | GO:0016043 | 8419 | 708  | 24 | 24 | 1.09E-26 |

| Protein complex | Ontology type      | GO Term                                                        | GO ID      | N    | M    | n  | m  | P-value  |
|-----------------|--------------------|----------------------------------------------------------------|------------|------|------|----|----|----------|
| Nucleosome      | biological process | biopolymer metabolism                                          | GO:0043283 | 8419 | 1223 | 24 | 24 | 6.42E-21 |
| Nucleosome      | biological process | nucleobase, nucleoside, nucleotide and nucleic acid metabolism | GO:0006139 | 8419 | 2192 | 24 | 24 | 8.58E-15 |
| Nucleosome      | biological process | cellular protein metabolism                                    | GO:0044267 | 8419 | 2230 | 24 | 24 | 1.30E-14 |
| Nucleosome      | biological process | protein metabolism                                             | GO:0019538 | 8419 | 2246 | 24 | 24 | 1.54E-14 |
| Nucleosome      | biological process | cellular macromolecule metabolism                              | GO:0044260 | 8419 | 2394 | 24 | 24 | 7.19E-14 |
| Nucleosome      | biological process | macromolecule metabolism                                       | GO:0043170 | 8419 | 2512 | 24 | 24 | 2.29E-13 |
| Nucleosome      | biological process | primary metabolism                                             | GO:0044238 | 8419 | 4747 | 24 | 24 | 1.04E-06 |
| Nucleosome      | biological process | cellular metabolism                                            | GO:0044237 | 8419 | 4914 | 24 | 24 | 2.39E-06 |
| Nucleosome      | biological process | metabolism                                                     | GO:0008152 | 8419 | 5217 | 24 | 24 | 1.01E-05 |
| Proteasome      | molecular function | threonine endopeptidase activity                               | GO:0004298 | 9140 | 19   | 20 | 13 | 4.23E-33 |
| Proteasome      | molecular function | endopeptidase activity                                         | GO:0004175 | 9140 | 274  | 20 | 13 | 7.66E-16 |
| Proteasome      | molecular function | peptidase activity                                             | GO:0008233 | 9140 | 398  | 20 | 13 | 9.81E-14 |
| Proteasome      | molecular function | hydrolase activity                                             | GO:0016787 | 9140 | 1414 | 20 | 18 | 3.26E-13 |
| Proteasome      | molecular function | catalytic activity                                             | GO:0003824 | 9140 | 3662 | 20 | 18 | 5.07E-06 |
| Proteasome      | cellular component | proteasome complex (sensu Eukaryota)                           | GO:0000502 | 7684 | 35   | 23 | 21 | 0.00E+00 |
| Proteasome      | cellular component | cytosol                                                        | GO:0005829 | 7684 | 226  | 23 | 23 | 1.94E-36 |
| Proteasome      | cellular component | proteasome core complex (sensu Eukaryota)                      | GO:0005839 | 7684 | 19   | 23 | 13 | 5.95E-31 |
| Proteasome      | cellular component | endoplasmic reticulum                                          | GO:0005783 | 7684 | 377  | 23 | 21 | 4.32E-26 |
| Proteasome      | cellular component | protein complex                                                | GO:0043234 | 7684 | 1274 | 23 | 23 | 9.50E-19 |
| Proteasome      | cellular component | cytoplasm                                                      | GO:0005737 | 7684 | 2299 | 23 | 23 | 8.19E-13 |
| Proteasome      | cellular component | nucleus                                                        | GO:0005634 | 7684 | 2551 | 23 | 23 | 9.06E-12 |
| Proteasome      | cellular component | membrane-bound organelle                                       | GO:0043227 | 7684 | 3750 | 23 | 23 | 6.59E-08 |
| Proteasome      | cellular component | intracellular membrane-bound organelle                         | GO:0043231 | 7684 | 3750 | 23 | 23 | 6.59E-08 |
| Proteasome      | cellular component | proteasome regulatory particle (sensu Eukaryota)               | GO:0005838 | 7684 | 5    | 23 | 3  | 2.33E-07 |
| Proteasome      | cellular component | organelle                                                      | GO:0043226 | 7684 | 4267 | 23 | 23 | 1.30E-06 |
| Proteasome      | cellular component | intracellular organelle                                        | GO:0043229 | 7684 | 4267 | 23 | 23 | 1.30E-06 |
| Proteasome      | biological process | protein catabolism                                             | GO:0030163 | 8419 | 452  | 19 | 19 | 5.13E-25 |
| Proteasome      | biological process | biopolymer catabolism                                          | GO:0043285 | 8419 | 461  | 19 | 19 | 7.51E-25 |
| Proteasome      | biological process | macromolecule catabolism                                       | GO:0009057 | 8419 | 549  | 19 | 19 | 2.21E-23 |
| Proteasome      | biological process | ubiquitin-dependent protein catabolism                         | GO:0006511 | 8419 | 105  | 19 | 13 | 2.10E-21 |
| Proteasome      | biological process | modification-dependent protein catabolism                      | GO:0019941 | 8419 | 105  | 19 | 13 | 2.10E-21 |
| Proteasome      | biological process | catabolism                                                     | GO:0009056 | 8419 | 699  | 19 | 19 | 2.33E-21 |
| Proteasome      | biological process | proteolysis and peptidolysis                                   | GO:0006508 | 8419 | 440  | 19 | 16 | 2.00E-18 |
| Proteasome      | biological process | cellular protein catabolism                                    | GO:0044257 | 8419 | 440  | 19 | 16 | 2.00E-18 |
| Proteasome      | biological process | cellular macromolecule catabolism                              | GO:0044265 | 8419 | 537  | 19 | 16 | 4.92E-17 |
| Proteasome      | biological process | biopolymer metabolism                                          | GO:0043283 | 8419 | 1223 | 19 | 19 | 1.07E-16 |
| Proteasome      | biological process | cellular catabolism                                            | GO:0044248 | 8419 | 650  | 19 | 16 | 1.04E-15 |
| Proteasome      | biological process | protein metabolism                                             | GO:0019538 | 8419 | 2246 | 19 | 19 | 1.18E-11 |
| Proteasome      | biological process | macromolecule metabolism                                       | GO:0043170 | 8419 | 2512 | 19 | 19 | 9.99E-11 |
| Proteasome      | biological process | cellular protein metabolism                                    | GO:0044267 | 8419 | 2230 | 19 | 16 | 2.33E-07 |
| Proteasome      | biological process | cellular macromolecule metabolism                              | GO:0044260 | 8419 | 2394 | 19 | 16 | 6.75E-07 |
| Proteasome      | biological process | primary metabolism                                             | GO:0044238 | 8419 | 4747 | 19 | 19 | 1.84E-05 |
| RNA Pol II      | molecular function | DNA-directed RNA polymerase activity                           | GO:0003899 | 9140 | 29   | 10 | 10 | 1.80E-26 |

| Protein complex | Ontology type      | GO Term                                                         | GO ID      | N    | M    | n  | m  | P-value   |
|-----------------|--------------------|-----------------------------------------------------------------|------------|------|------|----|----|-----------|
| RNA Pol II      | molecular function | nucleotidyltransferase activity                                 | GO:0016779 | 9140 | 79   | 10 | 10 | 1.29E-21  |
| RNA Pol II      | molecular function | transferase activity, transferring phosphorus-containing groups | GO:0016772 | 9140 | 728  | 10 | 10 | 9.71E-12  |
| RNA Pol II      | molecular function | transferase activity                                            | GO:0016740 | 9140 | 1197 | 10 | 10 | 1.44E-09  |
| RNA Pol II      | molecular function | nucleic acid binding                                            | GO:0003676 | 9140 | 2115 | 10 | 9  | 1.49E-05  |
| RNA Pol II      | cellular component | RNA polymerase complex                                          | GO:0030880 | 7684 | 19   | 10 | 8  | 1.13E-20  |
| RNA Pol II      | cellular component | DNA-directed RNA polymerase II, core complex                    | GO:0005665 | 7684 | 15   | 10 | 7  | 2.46E-18  |
| RNA Pol II      | cellular component | DNA-directed RNA polymerase II, holoenzyme                      | GO:0016591 | 7684 | 54   | 10 | 7  | 6.68E-14  |
| RNA Pol II      | cellular component | nucleoplasm                                                     | GO:0005654 | 7684 | 193  | 10 | 7  | 6.37E-10  |
| RNA Pol II      | cellular component | nucleus                                                         | GO:0005634 | 7684 | 2551 | 10 | 10 | 1.61E-05  |
| RNA Pol II      | cellular component | protein complex                                                 | GO:0043234 | 7684 | 1274 | 10 | 8  | 1.84E-05  |
| RNA Pol II      | biological process | transcription                                                   | GO:0006350 | 8419 | 1436 | 10 | 10 | 2.03E-08  |
| RNA Pol II      | biological process | transcription from Pol II promoter                              | GO:0006366 | 8419 | 367  | 10 | 7  | 3.03E-08  |
| RNA Pol II      | biological process | nucleobase, nucleoside, nucleotide and nucleic acid metabolism  | GO:0006139 | 8419 | 2192 | 10 | 10 | 1.41E-06  |
| RNA Pol II      | biological process | transcription, DNA-dependent                                    | GO:0006351 | 8419 | 1340 | 10 | 8  | 1.34E-05  |
| RNA Pol III     | molecular function | DNA-directed RNA polymerase activity                            | GO:0003899 | 9140 | 29   | 5  | 5  | 2.24E-13  |
| RNA Pol III     | molecular function | nucleotidyltransferase activity                                 | GO:0016779 | 9140 | 79   | 5  | 5  | 4.24E-11  |
| RNA Pol III     | molecular function | transferase activity, transferring phosphorus-containing groups | GO:0016772 | 9140 | 728  | 5  | 5  | 3.17E-06  |
| RNA Pol III     | molecular function | transferase activity                                            | GO:0016740 | 9140 | 1197 | 5  | 5  | 3.82E-05  |
| RNA Pol III     | molecular function | DNA binding                                                     | GO:0003677 | 9140 | 1324 | 5  | 5  | 6.34E-05  |
| RNA Pol III     | cellular component | DNA-directed RNA polymerase III complex                         | GO:0005666 | 7684 | 4    | 5  | 3  | 5.291E-10 |
| RNA Pol III     | cellular component | RNA polymerase complex                                          | GO:0030880 | 7684 | 19   | 5  | 3  | 1.278E-07 |
| RNA Pol III     | biological process | transcription from Pol III promoter                             | GO:0006383 | 8419 | 19   | 5  | 3  | 9.719E-08 |
| RNA Pol III     | biological process | regulation of transcription from Pol III promoter               | GO:0006359 | 8419 | 6    | 5  | 2  | 4.229E-06 |
| SRP             | cellular component | signal recognition particle (sensu Eukaryota)                   | GO:0005786 | 7684 | 8    | 4  | 4  | 4.823E-13 |
| SRP             | cellular component | signal recognition particle                                     | GO:0048500 | 7684 | 8    | 4  | 4  | 4.823E-13 |
| SRP             | biological process | cotranslational protein-membrane targeting                      | GO:0006613 | 8419 | 10   | 3  | 2  | 3.807E-06 |
| SRP             | biological process | protein-ER targeting                                            | GO:0045047 | 8419 | 10   | 3  | 2  | 3.807E-06 |
| SRP             | biological process | protein-membrane targeting                                      | GO:0006612 | 8419 | 18   | 3  | 2  | 1.294E-05 |
| SRS             | molecular function | structural constituent of ribosome                              | GO:0003735 | 9140 | 140  | 20 | 20 | 1.241E-37 |
| SRS             | molecular function | structural molecule activity                                    | GO:0005198 | 9140 | 473  | 20 | 20 | 1.29E-26  |
| SRS             | molecular function | RNA binding                                                     | GO:0003723 | 9140 | 415  | 20 | 7  | 1.753E-05 |
| SRS             | cellular component | ribosome                                                        | GO:0005840 | 7684 | 119  | 20 | 18 | 1.282E-31 |
| SRS             | cellular component | ribonucleoprotein complex                                       | GO:0030529 | 7684 | 251  | 20 | 20 | 9.013E-31 |
| SRS             | cellular component | small ribosomal subunit                                         | GO:0015935 | 7684 | 31   | 20 | 9  | 1.285E-17 |
| SRS             | cellular component | cytosolic small ribosomal subunit (sensu Eukaryota)             | GO:0005843 | 7684 | 11   | 20 | 7  | 8.126E-17 |
| SRS             | cellular component | eukaryotic 48S initiation complex                               | GO:0016283 | 7684 | 11   | 20 | 7  | 8.126E-17 |
| SRS             | cellular component | protein complex                                                 | GO:0043234 | 7684 | 1274 | 20 | 20 | 2.174E-16 |

| Protein complex | Ontology type      | GO Term                                                                      | GO ID      | N    | M    | n  | m  | P-value   |
|-----------------|--------------------|------------------------------------------------------------------------------|------------|------|------|----|----|-----------|
| SRS             | cellular component | non-membrane-bound organelle                                                 | GO:0043228 | 7684 | 893  | 20 | 18 | 1.94E-15  |
| SRS             | cellular component | intracellular non-membrane-bound organelle                                   | GO:0043232 | 7684 | 893  | 20 | 18 | 1.94E-15  |
| SRS             | cellular component | eukaryotic 43S preinitiation complex                                         | GO:0016282 | 7684 | 24   | 20 | 7  | 8.359E-14 |
| SRS             | cellular component | cytosolic ribosome (sensu Eukaryota)                                         | GO:0005830 | 7684 | 26   | 20 | 7  | 1.584E-13 |
| SRS             | cellular component | cytoplasm                                                                    | GO:0005737 | 7684 | 2299 | 20 | 18 | 3.452E-08 |
| SRS             | cellular component | cytosol                                                                      | GO:0005829 | 7684 | 226  | 20 | 7  | 9.706E-07 |
| SRS             | biological process | protein biosynthesis                                                         | GO:0006412 | 8419 | 400  | 18 | 18 | 1.051E-24 |
| SRS             | biological process | macromolecule biosynthesis                                                   | GO:0009059 | 8419 | 447  | 18 | 18 | 8.093E-24 |
| SRS             | biological process | cellular biosynthesis                                                        | GO:0044249 | 8419 | 706  | 18 | 18 | 3.442E-20 |
| SRS             | biological process | biosynthesis                                                                 | GO:0009058 | 8419 | 737  | 18 | 18 | 7.529E-20 |
| SRS             | biological process | cellular protein metabolism                                                  | GO:0044267 | 8419 | 2230 | 18 | 18 | 3.916E-11 |
| SRS             | biological process | protein metabolism                                                           | GO:0019538 | 8419 | 2246 | 18 | 18 | 4.456E-11 |
| SRS             | biological process | cellular macromolecule metabolism                                            | GO:0044260 | 8419 | 2394 | 18 | 18 | 1.411E-10 |
| SRS             | biological process | macromolecule metabolism                                                     | GO:0043170 | 8419 | 2512 | 18 | 18 | 3.365E-10 |
| SRS             | biological process | primary metabolism                                                           | GO:0044238 | 8419 | 4747 | 18 | 18 | 3.272E-05 |
| SRS             | biological process | cellular metabolism                                                          | GO:0044237 | 8419 | 4914 | 18 | 18 | 6.103E-05 |
| TAFIID          | molecular function | general RNA polymerase II transcription factor activity                      | GO:0016251 | 9140 | 29   | 13 | 6  | 9.932E-13 |
| TAFIID          | molecular function | transcription regulator activity                                             | GO:0030528 | 9140 | 881  | 13 | 12 | 7.126E-12 |
| TAFIID          | molecular function | RNA polymerase II transcription factor activity                              | GO:0003702 | 9140 | 164  | 13 | 8  | 1.08E-11  |
| TAFIID          | molecular function | DNA binding                                                                  | GO:0003677 | 9140 | 1324 | 13 | 12 | 9.223E-10 |
| TAFIID          | molecular function | nucleic acid binding                                                         | GO:0003676 | 9140 | 2115 | 13 | 12 | 2.355E-07 |
| TAFIID          | molecular function | transcription factor activity                                                | GO:0003700 | 9140 | 606  | 13 | 8  | 3.411E-07 |
| TAFIID          | molecular function | transcription initiation factor activity                                     | GO:0016986 | 9140 | 5    | 13 | 2  | 1.863E-05 |
| TAFIID          | cellular component | transcription factor TFIID complex                                           | GO:0005669 | 7684 | 13   | 13 | 10 | 4.156E-28 |
| TAFIID          | cellular component | transcription factor complex                                                 | GO:0005667 | 7684 | 80   | 13 | 11 | 5.861E-21 |
| TAFIID          | cellular component | DNA-directed RNA polymerase II. holoenzyme                                   | GO:0016591 | 7684 | 54   | 13 | 10 | 3.427E-20 |
| TAFIID          | cellular component | nucleoplasm                                                                  | GO:0005654 | 7684 | 193  | 13 | 11 | 1.412E-16 |
| TAFIID          | cellular component | protein complex                                                              | GO:0043234 | 7684 | 1274 | 13 | 11 | 1.412E-07 |
| TAFIID          | cellular component | nucleus                                                                      | GO:0005634 | 7684 | 2551 | 13 | 13 | 5.831E-07 |
| TAFIID          | cellular component | membrane-bound organelle                                                     | GO:0043227 | 7684 | 3750 | 13 | 13 | 8.813E-05 |
| TAFIID          | cellular component | intracellular membrane-bound organelle                                       | GO:0043231 | 7684 | 3750 | 13 | 13 | 8.813E-05 |
| TAFIID          | biological process | transcription initiation                                                     | GO:0006352 | 8419 | 42   | 13 | 8  | 2.391E-16 |
| TAFIID          | biological process | transcription                                                                | GO:0006350 | 8419 | 1436 | 13 | 13 | 9.885E-11 |
| TAFIID          | biological process | transcription. DNA-dependent                                                 | GO:0006351 | 8419 | 1340 | 13 | 12 | 2.816E-09 |
| TAFIID          | biological process | regulation of transcription                                                  | GO:0045449 | 8419 | 1372 | 13 | 12 | 3.726E-09 |
| TAFIID          | biological process | regulation of nucleobase, nucleoside, nucleotide and nucleic acid metabolism | GO:0019219 | 8419 | 1398 | 13 | 12 | 4.656E-09 |
| TAFIID          | biological process | regulation of metabolism                                                     | GO:0019222 | 8419 | 1521 | 13 | 12 | 1.265E-08 |
| TAFIID          | biological process | nucleobase, nucleoside, nucleotide and nucleic acid metabolism               | GO:0006139 | 8419 | 2192 | 13 | 13 | 2.461E-08 |
| TAFIID          | biological process | regulation of transcription. DNA-dependent                                   | GO:0006355 | 8419 | 1292 | 13 | 11 | 6.192E-08 |
| TAFIID          | biological process | regulation of physiological process                                          | GO:0050791 | 8419 | 1924 | 13 | 12 | 2.03E-07  |

| Protein complex | Ontology type      | GO Term                                     | GO ID      | N    | M    | n  | m  | P-value   |
|-----------------|--------------------|---------------------------------------------|------------|------|------|----|----|-----------|
| TAFIID          | biological process | regulation of biological process            | GO:0050789 | 8419 | 2196 | 13 | 12 | 9.587E-07 |
| TAFIID          | biological process | regulation of transcription factor activity | GO:0051090 | 8419 | 6    | 13 | 2  | 3.29E-05  |
| VHL             | biological process | ubiquitin cycle                             | GO:0006512 | 8419 | 438  | 4  | 4  | 7.231E-06 |