Table S3 Classification of GO annotations (the top 50 GO terms)

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| --- | --- | --- | --- |
| **GO ID** | **GO Term** | **Namespace** | **Gene numbers** |
| GO:0005515 | protein binding | molecular\_function | 4812 |
| GO:0005524 | ATP binding | molecular\_function | 3907 |
| GO:0006468 | protein phosphorylation | biological\_process | 2273 |
| GO:0004672 | protein kinase activity | molecular\_function | 2272 |
| GO:0055114 | oxidation-reduction process | biological\_process | 1833 |
| GO:0043531 | ADP binding | molecular\_function | 1725 |
| GO:0016020 | membrane | cellular\_component | 1656 |
| GO:0016021 | integral component of membrane | cellular\_component | 1571 |
| GO:0003676 | nucleic acid binding | molecular\_function | 1265 |
| GO:0007165 | signal transduction | biological\_process | 1255 |
| GO:0003677 | DNA binding | molecular\_function | 1203 |
| GO:0055085 | transmembrane transport | biological\_process | 1181 |
| GO:0008270 | zinc ion binding | molecular\_function | 1057 |
| GO:0006355 | regulation of transcription, DNA-templated | biological\_process | 945 |
| GO:0008152 | metabolic process | biological\_process | 845 |
| GO:0016491 | oxidoreductase activity | molecular\_function | 788 |
| GO:0003824 | catalytic activity | molecular\_function | 766 |
| GO:0005634 | nucleus | cellular\_component | 748 |
| GO:0005975 | carbohydrate metabolic process | biological\_process | 628 |
| GO:0006508 | proteolysis | biological\_process | 589 |
| GO:0006810 | transport | biological\_process | 585 |
| GO:0016887 | ATPase activity | molecular\_function | 504 |
| GO:0046872 | metal ion binding | molecular\_function | 481 |
| GO:0003723 | RNA binding | molecular\_function | 465 |
| GO:0005622 | intracellular | cellular\_component | 420 |
| GO:0003735 | structural constituent of ribosome | molecular\_function | 419 |
| GO:0006412 | translation | biological\_process | 418 |
| GO:0005840 | ribosome | cellular\_component | 408 |
| GO:0003700 | transcription factor activity | molecular\_function | 407 |
| GO:0020037 | heme binding | molecular\_function | 407 |
| GO:0016787 | hydrolase activity | molecular\_function | 402 |
| GO:0005525 | GTP binding | molecular\_function | 388 |
| GO:0004553 | hydrolase activity | molecular\_function | 381 |
| GO:0005506 | iron ion binding | molecular\_function | 330 |
| GO:0006886 | intracellular protein transport | biological\_process | 314 |
| GO:0042626 | ATPase activity | molecular\_function | 299 |
| GO:0005509 | calcium ion binding | molecular\_function | 297 |
| GO:0016705 | oxidoreductase activity | molecular\_function | 291 |
| GO:0015074 | DNA integration | biological\_process | 280 |
| GO:0009058 | biosynthetic process | biological\_process | 279 |
| GO:0003924 | GTPase activity | molecular\_function | 267 |
| GO:0015979 | photosynthesis | biological\_process | 239 |
| GO:0046983 | protein dimerization activity | molecular\_function | 235 |
| GO:0008168 | methyltransferase activity | molecular\_function | 234 |
| GO:0006629 | lipid metabolic process | biological\_process | 223 |
| GO:0006351 | transcription, DNA-templated | biological\_process | 208 |
| GO:0005737 | cytoplasm | cellular\_component | 200 |
| GO:0016192 | vesicle-mediated transport | biological\_process | 195 |
| GO:0016301 | kinase activity | molecular\_function | 190 |