**Table S10**. **Enriched functional GO terms for proteins duplicated at the different relative ages shown in Table S9.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Age** | **Ontology** | **Go Term** | **Go Name** |
| **1** | Biological process | GO:0006259 | DNA metabolic process |
| **1** | Biological process | GO:0006278 | RNA-dependent DNA replication |
| **1** | Biological process | GO:0006313 | transposition |
| **1** | Biological process | GO:0006810 | transport |
| **1** | Biological process | GO:0006814 | sodium ion transport |
| **1** | Biological process | GO:0009253 | peptidoglycan catabolic process |
| **1** | Biological process | GO:0015074 | DNA integration |
| **1** | Biological process | GO:0032196 | transposition |
| **1** | Biological process | GO:0034641 | cellular nitrogen compound metabolic process |
| **1** | Biological process | GO:0050877 | neurological system process |
| **1** | Molecular function | GO:0003676 | nucleic acid binding |
| **1** | Molecular function | GO:0003964 | RNA-directed DNA polymerase activity |
| **1** | Molecular function | GO:0004523 | ribonuclease H activity |
| **1** | Molecular function | GO:0004803 | transposase activity |
| **1** | Molecular function | GO:0005234 | extracellular-glutamate-gated ion channel activity |
| **1** | Molecular function | GO:0005272 | sodium channel activity |
| **1** | Molecular function | GO:0008745 | N-acetylmuramoyl-L-alanine amidase activity |
| **1** | Molecular function | GO:0016705 | oxidoreductase activity |
| **1** | Molecular function | GO:0022857 | transmembrane transporter activity |
| **1** | Cellular Component | GO:0016020 | membrane |
| **3** | Biological process | GO:0006030 | chitin metabolic process |
| **3** | Biological process | GO:0006066 | alcohol metabolic process |
| **3** | Biological process | GO:0006259 | DNA metabolic process |
| **3** | Biological process | GO:0006508 | proteolysis |
| **3** | Biological process | GO:0006810 | transport |
| **3** | Biological process | GO:0006814 | sodium ion transport |
| **3** | Biological process | GO:0015074 | DNA integration |
| **3** | Biological process | GO:0055085 | transmembrane transport |
| **3** | Molecular function | GO:0003676 | nucleic acid binding |
| **3** | Molecular function | GO:0004252 | serine-type endopeptidase activity |
| **3** | Molecular function | GO:0004601 | peroxidase activity |
| **3** | Molecular function | GO:0005215 | transporter activity |
| **3** | Molecular function | GO:0005234 | extracellular-glutamate-gated ion channel activity |
| **3** | Molecular function | GO:0008061 | chitin binding |
| **3** | Molecular function | GO:0008233 | peptidase activity |
| **3** | Molecular function | GO:0008812 | choline dehydrogenase activity |
| **3** | Molecular function | GO:0020037 | heme binding |
| **3** | Molecular function | GO:0022857 | transmembrane transporter activity |
| **3** | Cellular Component | GO:0005921 | gap junction |
| **3** | Cellular Component | GO:0016020 | membrane |
| **4** | Biological process | GO:0006208 | pyrimidine nucleobase catabolic process |
| **4** | Biological process | GO:0006810 | transport |
| **4** | Biological process | GO:0006811 | ion transport |
| **4** | Molecular function | GO:0005230 | extracellular ligand-gated ion channel activity |
| **4** | Molecular function | GO:0022857 | transmembrane transporter activity |
| **4** | Cellular Component | GO:0016020 | membrane |
| **4** | Cellular Component | GO:0045211 | postsynaptic membrane |
| **5** | Biological process | GO:0005975 | carbohydrate metabolic process |
| **5** | Biological process | GO:0006508 | proteolysis |
| **5** | Biological process | GO:0006810 | transport |
| **5** | Biological process | GO:0006835 | dicarboxylic acid transport |
| **5** | Biological process | GO:0006836 | neurotransmitter transport |
| **5** | Biological process | GO:0007166 | cell surface receptor signaling pathway |
| **5** | Biological process | GO:0007186 | G-protein coupled receptor signaling pathway |
| **5** | Biological process | GO:0009253 | peptidoglycan catabolic process |
| **5** | Molecular function | GO:0004930 | G-protein coupled receptor activity |
| **5** | Molecular function | GO:0005328 | neurotransmitter:sodium symporter activity |
| **5** | Molecular function | GO:0008233 | peptidase activity |
| **5** | Molecular function | GO:0008745 | N-acetylmuramoyl-L-alanine amidase activity |
| **5** | Molecular function | GO:0016810 | hydrolase activity |
| **5** | Molecular function | GO:0022857 | transmembrane transporter activity |
| **5** | Cellular Component | GO:0016020 | membrane |
| **5** | Cellular Component | GO:0016021 | integral to membrane |
| **6** | Biological process | GO:0006508 | proteolysis |
| **6** | Biological process | GO:0006810 | transport |
| **6** | Biological process | GO:0006811 | ion transport |
| **6** | Biological process | GO:0006836 | neurotransmitter transport |
| **6** | Biological process | GO:0007186 | G-protein coupled receptor signaling pathway |
| **6** | Biological process | GO:0015074 | DNA integration |
| **6** | Biological process | GO:0055085 | transmembrane transport |
| **6** | Molecular function | GO:0004252 | serine-type endopeptidase activity |
| **6** | Molecular function | GO:0004871 | signal transducer activity |
| **6** | Molecular function | GO:0004872 | receptor activity |
| **6** | Molecular function | GO:0005234 | extracellular-glutamate-gated ion channel activity |
| **6** | Molecular function | GO:0005328 | neurotransmitter:sodium symporter activity |
| **6** | Molecular function | GO:0008233 | peptidase activity |
| **6** | Molecular function | GO:0022857 | transmembrane transporter activity |
| **6** | Molecular function | GO:0050254 | rhodopsin kinase activity |
| **6** | Cellular Component | GO:0005886 | plasma membrane |
| **6** | Cellular Component | GO:0016020 | membrane |
| **6** | Cellular Component | GO:0016021 | integral to membrane |
| **6** | Cellular Component | GO:0030054 | cell junction |
| **6** | Cellular Component | GO:0030288 | outer membrane-bounded periplasmic space |
| **6** | Cellular Component | GO:0030312 | external encapsulating structure |
| **6** | Cellular Component | GO:0045211 | postsynaptic membrane |
| **7** | Biological process | GO:0006184 | GTP catabolic process |
| **7** | Biological process | GO:0006468 | protein phosphorylation |
| **7** | Biological process | GO:0006508 | proteolysis |
| **7** | Biological process | GO:0006754 | ATP biosynthetic process |
| **7** | Biological process | GO:0006810 | transport |
| **7** | Biological process | GO:0006812 | cation transport |
| **7** | Biological process | GO:0006836 | neurotransmitter transport |
| **7** | Biological process | GO:0006913 | nucleocytoplasmic transport |
| **7** | Biological process | GO:0007017 | microtubule-based process |
| **7** | Biological process | GO:0007018 | microtubule-based movement |
| **7** | Biological process | GO:0007156 | homophilic cell adhesion |
| **7** | Biological process | GO:0007165 | signal transduction |
| **7** | Biological process | GO:0007223 | Wnt receptor signaling pathway |
| **7** | Biological process | GO:0007264 | small GTPase mediated signal transduction |
| **7** | Biological process | GO:0008152 | metabolic process |
| **7** | Biological process | GO:0009056 | catabolic process |
| **7** | Biological process | GO:0015031 | protein transport |
| **7** | Biological process | GO:0016055 | Wnt receptor signaling pathway |
| **7** | Biological process | GO:0043401 | steroid hormone mediated signaling pathway |
| **7** | Biological process | GO:0043687 | post-translational protein modification |
| **7** | Biological process | GO:0044281 | small molecule metabolic process |
| **7** | Biological process | GO:0051246 | regulation of protein metabolic process |
| **7** | Biological process | GO:0051276 | chromosome organization |
| **7** | Biological process | GO:0051603 | proteolysis involved in cellular protein catabolic process |
| **7** | Biological process | GO:0055085 | transmembrane transport |
| **7** | Biological process | GO:0055114 | oxidation-reduction process |
| **7** | Biological process | GO:0065003 | macromolecular complex assembly |
| **7** | Molecular function | GO:0003707 | steroid hormone receptor activity |
| **7** | Molecular function | GO:0003777 | microtubule motor activity |
| **7** | Molecular function | GO:0003924 | GTPase activity |
| **7** | Molecular function | GO:0003995 | acyl-CoA dehydrogenase activity |
| **7** | Molecular function | GO:0004222 | metalloendopeptidase activity |
| **7** | Molecular function | GO:0004298 | threonine-type endopeptidase activity |
| **7** | Molecular function | GO:0004386 | helicase activity |
| **7** | Molecular function | GO:0004674 | protein serine/threonine kinase activity |
| **7** | Molecular function | GO:0004702 | receptor signaling protein serine/threonine kinase activity |
| **7** | Molecular function | GO:0004767 | sphingomyelin phosphodiesterase activity |
| **7** | Molecular function | GO:0004871 | signal transducer activity |
| **7** | Molecular function | GO:0005328 | neurotransmitter:sodium symporter activity |
| **7** | Molecular function | GO:0005509 | calcium ion binding |
| **7** | Molecular function | GO:0005524 | ATP binding |
| **7** | Molecular function | GO:0005525 | GTP binding |
| **7** | Molecular function | GO:0008026 | ATP-dependent helicase activity |
| **7** | Molecular function | GO:0008233 | peptidase activity |
| **7** | Molecular function | GO:0008568 | microtubule-severing ATPase activity |
| **7** | Molecular function | GO:0016301 | kinase activity |
| **7** | Molecular function | GO:0016491 | oxidoreductase activity |
| **7** | Molecular function | GO:0016772 | transferase activity |
| **7** | Molecular function | GO:0016887 | ATPase activity |
| **7** | Molecular function | GO:0016905 | myosin heavy chain kinase activity |
| **7** | Molecular function | GO:0019787 | small conjugating protein ligase activity |
| **7** | Molecular function | GO:0019829 | cation-transporting ATPase activity |
| **7** | Molecular function | GO:0019899 | enzyme binding |
| **7** | Molecular function | GO:0042624 | ATPase activity |
| **7** | Molecular function | GO:0046872 | metal ion binding |
| **7** | Molecular function | GO:0046982 | protein heterodimerization activity |
| **7** | Cellular Component | GO:0000786 | nucleosome |
| **7** | Cellular Component | GO:0005839 | proteasome core complex |
| **7** | Cellular Component | GO:0005856 | cytoskeleton |
| **7** | Cellular Component | GO:0005875 | microtubule associated complex |
| **7** | Cellular Component | GO:0016021 | integral to membrane |