**Supplementary File 8:**

Identification of antioxidant genes in the Antarctic sponge *Isodictya* sp. via sequence similarity searches.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Contig ID | Gene | Length (bp) | Accession number | Closest match | % Identities | Expect |
| DN32241 | mtMn-SOD | 1912 | XP\_022799031 | mitochondrial manganese superoxide dismutase [*Stylophora pistillata*] | |  |  | | --- | --- | |  | 67 | | |  | | --- | | 3e-101 | |
| DN3280 | mtMn-SOD | 674 | XP\_002290645 | mitochondrial manganese superoxide dismutase [*Thalassiosira pseudonana* CCMP1335] | 70 | |  |  | | --- | --- | |  | 6e-112 | |
| DN22531 | Cu,Zn-SOD | 847 | ABD58974 | Cu/ Zn superoxide dismutase [*Azumapecten farreri*] | |  |  | | --- | --- | |  | 73 | | 1e-69 |
| DN17486 | Cu,Zn-SOD | 529 | ALT54496 | [Cu/Zn-superoxide dismutase [*Tegillarca granosa*]](https://blast.ncbi.nlm.nih.gov/Blast.cgi#alnHdr_966751928) | 69 | 3e-68 |
| DN65 | Cu,Zn-SOD | 787 | XP\_007519762 | superoxide dismutase [Cu-Zn] [*Erinaceus europaeus*] | 60 | 1e-45 |
| DN35772 | Cu,Zn-SOD | 611 | ATU82785 | Superoxide disumutase protein [*Pristhesancus plagipennis*] | 47 | 3e-53 |
| DN6504 | CAT | 1802 | XP\_005090060 | catalase-like isoform X2 [*Aplysia californica*] | 78 | 0.0 |
| DN28381 | CAT | 2969 | AET34916 | catalase [*Macrobrachium rosenbergii*] | 70 | 0.0 |
| DN29099 | CAT | 1674 | XP\_003389936 | catalase-like [*Amphimedon queenslandica*] | 75 | 0.0 |
| DN31298 | GST | 1026 | AJH66211 | sigma class glutathione S-transferase [*Baylisascaris schroederi*] | 43 | 4e-42 |
| DN19521 | GST | 412 | XP\_002731499 | hematopoietic prostaglandin D synthase-like [*Saccoglossus kowalevskii*] | 56 | 3e-39 |
| DN25244 | GST | 1017 | XP\_003386742 | glutathione S-transferase 1-like [*Amphimedon queenslandica*] | 45 | 1e-50 |
| DN49353 | GST | 542 | XP\_019637401 | hematopoietic prostaglandin D synthase-like [*Branchiostoma belcheri*] | 43 | 2e-42 |
| DN19609 | GST | 617 | XP\_019637401 | hematopoietic prostaglandin D synthase-like [*Branchiostoma belcheri*] | 50 | 1e-40 |
| DN33330 | GST | 921 | XP\_003386765 | glutathione S-transferase-like [*Amphimedon queenslandica*] | 43 | 1e-43 |
| DN25905 | GST | 1976 | XP\_003386742 | glutathione S-transferase 1-like [*Amphimedon queenslandica*] | 41 | 3e-46 |
| DN32811 | Glutaredoxin | 471 | GAX11604 | glutaredoxin 3 [*Fistulifera solaris*] | 54 | 6e-16 |
| DN32811 | Thioredoxin | 287 | XP\_005025145 | thioredoxin reductase 3 [*Anas platyrhynchos*] | 60 | 1e-15 |
| DN30012 | OSGIN2 | 3656 | XP\_022100915 | oxidative stress-induced growth inhibitor 2-like [*Acanthaster planci*] | 38 | 1e-99 |