**Supplementary Table 2.** The sequence ID, total number of Sec residues, and Sec residue number upstream and including the APOER2 binding site within the C-terminal domain (SEPP1←APOER2), and the region downstream of the APOER2 binding site (SEPP1APOER2→) of SEPP1 in vertebrate species included in this study and closely related species (fish).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Class** | **Species** | **Sequence ID** | **Total Sec** | **SEPP1 ←APOER2** | **SEPP1APOER2→** |
| **Mammals** | Human | SPP00000082\_2.0 | 10 | 4 | 5 |
| Mouse (*Mus musculus*) | SPP00001581\_2.0 | 10 | 4 | 5 |
| Rat (*Rattus norvegicus*) | SPP00002361\_2.0 | 10 | 4 | 5 |
| Guinea pig (*Cavia porcellus*) | SPP00000465\_2.0 | 7 | 1 | 5 |
| Pig (*Sus scrofa*) | SPP00002497\_2.0 | 14 | 8 | 5 |
| Cow (*Bos taurus*) | SPP00000267\_2.0 | 12 | 6 | 5 |
| Dog (*Canis lupus*) | SPP00000415\_2.0 | 15 | 9 | 5 |
| Horse (*Equus caballus*) | SPP00000876\_2.0 | 13 | 7 | 5 |
| Sheep (*Ovis aries*)\*\* | Lobanov et al. (2008). | 12 | 6 | 5 |
| **Birds** | Chicken (*Gallus gallus*)\*\* | Lobanov et al. (2008). | 13 | 7 | 5 |
| Duck (*Anas platyrhynchos*)\* | ENSAPLG00000012149 | 13 | 7 | 5 |
| Turkey (*Meleagris gallopavo*) | SPP00001437\_2.0 | 13 | 7 | 5 |
| **Fish** | Zebrafish (*Danio rerio*) | SPP00000643\_2.0 | 17 | 11 | 5 |
| Rainbow trout (*Oncorhynchus mykiss*)\*\* | Lobanov et al. (2008). | 17 | 11 | 5 |
| Channel catfish (Ictalurus punctatus)\*\* | Lobanov et al. (2008). | 15 | 8 | 5 |
| Medaka (*Oryzias latipes*) | SPP00001987\_2.0 | 16 | 10 | 5 |
| Atlantic salmon (*Salmo salar*)\*\* | Lobanov et al. (2008). | 17 | 11 | 5 |
| Tilapia (*Oreochromis niloticus*) | SPP00001837\_2.0 | 17 | 11 | 5 |
| Common carp (*Cyprinus carpio*)\*\* | Lobanov et al. (2008). | 17 | 11 | 5 |
| Tetraodon (*Tetraodon nigroviridis*) | SPP00002685\_2.0 | 17 | 11 | 5 |
| Fugu (*Takifugu rubripes*) | SPP00002593\_2.0 | 17 | 11 | 5 |
| Cave fish (*Astyanax mexicanus*)\* | ENSAMXT00000006031 | 16 | 10 | 5 |
| Stickleback (*Gasterosteus aculeatus*) | SPP00001102\_2.0 | 15 | 9 | 5 |

\*Sequence obtained at ensemble.org then searched for Sec and SECIS elements using <http://seblastian.crg.es/>

\*\*Sequences obtained from Lobanov et al. (2008).