

**Table S1. List of the species for which new sequence data have been incorporated in the protein alignments:**

*Amoebidium parasiticum*  
*Sphaeroforma arctica*  
*Capsaspora owczarzaki*  
*Monosiga brevicollis*  
*Oscarella carmela*  
*Reniera sp.*  
*Suberites domuncula*  
*Nematostella vectensis*  
*Hydra magnipapillata*  
*Hydra vulgaris*  
*Hydractinia echinata*  
*Podocoryne carnea*  
*Acropora millepora*  
*Acropora palmata*  
*Montastraea faveolata*  
*Paracentrotus lividus*  
*Asterina pectinifera*  
*Solaster stimpsonii*  
*Saccoglossus kowalevskii*  
*Xenoturbella bocki*  
*Molgula tectiformis*  
*Halocynthia roretzi*  
*Petromyzon marinus*  
*Biomphalaria glabrata*  
*Aplysia californica*  
*Lymnaea stagnalis*  
*Haliotis discos*  
*Crassostrea virginica*  
*Macrostomum lignano*  
*Dugesia ryukyuensis*  
*Dugesia japonica*  
*Ixodes scapularis*  
*Daphnia pulex*  
*Daphnia magna*  
*Pediculus humanus*