Saccharomyces cerevisiae
Candida albicans
Tricholoma matsutake
Mucor racemosus
Buddenbrockia plumatellae
Myxobolus dogieli
Myxobolus
Parvicapsula limandae
Kudoa trifolia
Kudoa unicapsula
Monosiga brevicollis
Salpingoeca infusionum
Leucosolenia sp.
Mycale fibrexilis
Suberites ficus
Pleurobrachia bachei
Beroe ovata
Mnemiopsis leidyi
Polypodium hydriforme (Host: P. spathula)
Polypodium hydriforme (Host: A. ruthenus)
Caenorhabditis elegans
Meara stichopi
Strongylocentrotus purpuratus
Styela plicata
Thalia democratica
Petromyzon marinus
Oncorhynchus kisutch
Raja schmidti
Triakis semifasciata
Balano sp.
Ptychodera flava
Cephalodiscus gracilis
Peripatus sp.
Harrimania sp.
Saccoglossus kowalevskii
Proceraea cornuta
Parvicardium minimum
Phascolopsis gouldii
Milnesium tardigradum
Diclidophora denticulata
Stylochus zebra
Amphiporus sp.
Chordodes morgani
Stenostomum leucops
Urechis caupo
Phoronis vancouverensis
Placopecten magellanicus
Limulus polyphemus
Tenebrio molitor
Priapulus caudatus
Pycnophyes sp. Tjarno
Antipathes galapagensis
Moritastraea franksi
Atolla vanhoeffeni
Nausithoe rubra
Chrysaora melanaster
Aurelia sp.
Catostylus sp.
Phacellophora camtschatica
Craterolophus convolvulus
Haliclystus octoradiatus
Haliclystus sanjuanensis
Chironex fleckeri
Chiropsalmus sp.
Darwin carybdeid sp.
Carybdea rastonii
Tripedalia cystophora
Limnocnida tanganyicae
Olindias phosphorica
Apolemia sp.
Physophora hydrostatica
Nectopyramis sp.
Sulculeolaria quadrivalvis
Cordagalma cordiforme
Nanomia bijuga
Agalma elegans
Halistemma rubrum
Hydractinia symbiolongicarpus
Clava multicornis
Podocoryne carnea
Adelopora crassilabrum
Lepidopora microstylus
Crypthelia cryptotrema
Pseudocrypthelia pachypoma
Melicertum octocostatum
Polyorchis penicillatus
Scrippsia pacifica
Dipurena ophiogaster
Moerisia sp.
Pennaria disticha
Cladocoryne floccosa
Porpita sp.
Velella sp.
Solanderia ericopsis
Zanclea prolifera
Dicoryne conybearei
Hydrichthella epigorgia
Brinckmannia hexactinellidophila
Garveia sp.
Lizzia blondina
Rathkea octopunctata
Fabienna sphaerica
Proboscidactyla ornata
Eudendrium racemosum
Leuckartiara octona
Hydrichthys boycei
Pandea sp.
Koellikerina fasciculate
Corydendrium sp.
Pruvotella grisea
Turritopsis dohrnii
Clavactinia gallensis
Pachycordyle pusilla
Bimeria vestita
Cordylophora caspia
Bougainvillia carolinensis
Rhizogeton nudus
Candelabrum cocksii
Euphysora bigelowi
Ectopleura dumortieri
Zyzzyzus calderi
Ralpharia gorgoniae
Hydra circumcincta
Clytia noliformis
Octophialucium indicum
Anthohebella parasitica
Plumularia setacea
Halopteris minuta
Aglaophenia tubiformis
Halecium muricatum
Abietinaria filicula
Amphisbetia minima

Outgroups
Myxozoa
Outgroups
Bilateria
Cnidaria

Additional file 5- Parsimony topology of 18s rDNA sequences of 132 taxa with gaps coded as missing. Strict consensus of 40 most parsimonious trees of 11168 steps. Bootstrap values greater than 50 are indicated by *, where space permits.