Gonactinia prolifera
Protanthea simplex
Boloceroides mcmurrichi
Viatrix globulifera
Alicia mirabilis
Alicia sansibarensis
Exaiptasia brasiliensis
Exaiptasia pallida
Bartholomea annulata
Aiptasia mutabilis
Laviactis lucida
Sagartiogeton laceratus
Sagartiogeton undatus
Diadumene cincta
Diadumene sp
Diadumene lineata
Diadumene leucolena
Acricoactis brachyacontis
Charisea saxicola
Spongiactis japonica
Metridium senile
Metridium senile lobatum
Antipodactis awii
Cereus herpetodes
Actinothoe sphyrodeta
Anthothoe chilensis
Cereus pedunculatus
Neoaiptasia morbilla
Ostiactis pearseae
Isanthus capensis
Isoparactis ferax
Isoparactis fionae
Paraisanthus fabiani
Alvinactis chessi
Cyananthea hourdezi
Kadosactis antarctica
Jasonactis erythraios
Galatheanthemum profundale
Galatheanthemum sp
Peronanthus sp
Actinoscyphia plebeia
Amphianthus sp
Andvakia boniensis
Andvakia discipulorum
Telmatactis sp
Phellia exlex
Phellia gausapata
Nemanthus nitidus
Paracalliactis sp
Paraphelliactis sp
Chondrophellia orangina
Actinauge richardi
Hormathia pectinata
Allantactis parasitica
Hormathia armata
Hormathia lacunifera
Calliactis japonica
Adamsia palliata
Calliactis parasitica
Calliactis polypus
Calliactis tricolor
Cactosoma sp
Halcampoides purpureus
Halcampoides sp (Kamchatka)
Haloclava producta
Peachia cylindrica
Epiactis japonica
Epiactis ritteri
Epiactis fernaldi
Epiactis handi
Epiactis lisbethae
Aulactinia stella
Aulactinia incubans
Aulactinia stella
Cribrinopsis fernaldi
Cribrinopsis rubens
Cribrinopsis albopunctata
Cribrinopsis similis
Cribrinopsis olegi
Urticina grebelnyi
Urticina crassicornis
Urticina fecunda
Harenactis argentina
Stephanthus antarcticus
Anthopleura dowii
Anthopleura elegantissima
Anthopleura rosea
Bolocera kerguelensis
Liponema brevicornis
Anthopleura thallia
Heteractis magnifica
Stichodactyla gigantea
Anthopleura atodai
Anthopleura handi
Gyractis sesere
Anemonia viridis
Anthopleura ballii
Actinia fragacea
Anthopleura fuscoviridis
Anthopleura kurogane
Anthopleura insignis
Anthopleura krebsi
Bunodactis reynaudi
Anthopleura anneae
Oulactis muscosa
Anthostella stephensoni
Korsaranthus sp
Preactis millardae
Bunodosoma cavernatum
Bunodosoma grande
Aulactinia verrucosa
Bunodosoma granuliferum
Phymanthus crucifer
Tealidium konoplinorum MIMB 41364
Tealidium konoplinorum MIMB 41360
Tealidium konoplinorum MIMB 41359
Tealidium konoplinorum MIMB 41358
Tealidium konoplinorum MIMB 41365
Hormosoma scotti
Anthosactis janmayeni
Halcampulactis solimar
Capnea georgiana
Sicyonis denisovi MIMB 41371
Sicyonis denisovi MIMB 41372
Sicyonis denisovi MIMB 41367
Sicyonis denisovi MIMB 41368
Sicyonis denisovi MIMB 41366
Sicyonis kuznetsovi
Ophiodiscus bukini
Exocoelactis actinostoloides
Stomphia sp
Stomphia sp
Stomphia sp
Stomphia didemon
Stomphia selaginella
Stomphia coccinea (Kamchatka)
Actinostola sp
Actinostola sp
Actinostola sp
Actinostola sp
Actinostola sp
Actinostola sp (Kamchatka)
Actinostola sp
Actinostola sp
Actinostola chilensis
Actinostola faeculenta
Actinostola faeculenta
Actinostola faeculenta
Actinostola faeculenta
Actinostola georgiana
Actinostola crassicornis
Halcurias pilatus
Isactinernus quadrilobatus
Actinernus elongatus
Nematostella vectensis
Edwardsia elegans
Edwardsia japonica
Edwardsia timida
Edwardsianthus gilbertensis

Anthosactinidae
Halcampulactinidae
Capneidae
Sicyonidae
Exocoelactinidae
Actinostolidae

0.01

Supplement Fig. 1. ML phylogenetic tree based on contacenated datasheet, see text for details. Numbers indicate bootstrap values for Maximum Likelihood.