

Supplemental Information for:**Transcriptome-based target-enrichment baits for stony corals (Cnidaria: Anthozoa: Scleractinia)**

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Table S1. List of COI and histone H3 sequences used in the design of barcoding baits. Bold species denote samples sequenced in this study. Asterisks indicate that reference can be found in the main text.

Species	Accession no.	Reference
COI		
<i>Acanthastrea pachysepta</i>	LN999910	Huang et al. (2016)*
<i>Acropora palmata</i>	AB441246	Fukami et al. (2008)*
<i>Agaricia humilis</i>	AB441219	Fukami et al. (2008)*
<i>Alveopora spongiosa</i>	AB907092	Kitano et al. (2014)*
<i>Anacropora forbesi</i>	AB441251	Fukami et al. (2008)*
<i>Anomastrea irregularis</i>	AM494869	Stefani et al. (2007)
<i>Anthemiphyllia patera</i>	HM018604	Kitahara et al. (2010)*
<i>Astrea curta</i>	HQ203286	Huang et al. (2011)*
<i>Astroides calycularis</i>	JQ343126	Merino-Serrais et al. (2012)
<i>Balanophyllia (Balanophyllia) elegans</i>	DQ445805	Hellberg (2006)
<i>Bernardpora stutchburyi</i>	AB907061	Kitano et al. (2014)*
<i>Blastomussa loyae</i>	HF954191	Benzoni et al. (2014)
<i>Caryophyllia (Caryophyllia) ralphae</i>	HM018617	Kitahara et al. (2010)*
<i>Caulastrea tumida</i>	HQ203249	Huang et al. (2011)*
<i>Cladocora arbuscula</i>	AB117292	Fukami et al. (2004)*
<i>Cladopsammia eguchii</i>	HG965317	Arrigoni et al. (2014)
<i>Coelastrea palauensis</i>	EU371699	Huang et al. (2008)*
<i>Colpophyllia natans</i>	AB117228	Fukami et al. (2004)*
<i>Conotrochus funiculumna</i>	HM018621	Kitahara et al. (2010)*
<i>Coscinaraea columna</i>	AB441210	Fukami et al. (2008)*
<i>Craterastrea levis</i>	HE978509	Benzoni et al. (2012)
<i>Ctenactis crassa</i>	LC191439	Oku et al. (2017)

Species	Accession no.	Reference
<i>Ctenella chagius</i>	AB441208	Fukami et al. (2008)*
<i>Cyathelia axillaris</i>	HM018622	Kitahara et al. (2010)*
<i>Cyathotrochus pileus</i>	HM018623	Kitahara et al. (2010)*
<i>Cycloseris vaughani</i>	LC191476	Oku et al. (2017)
<i>Cynarina lacrymalis</i>	AB117246	Fukami et al. (2004)*
<i>Dactylostrochus cervicornis</i>	HM018624	Kitahara et al. (2010)*
<i>Danafungia horrida</i>	LC191483	Oku et al. (2017)
<i>Dasmosmilia cf. lymani</i>	HM018625	Kitahara et al. (2010)*
<i>Deltocyathus suluensis</i>	HM018631	Kitahara et al. (2010)*
<i>Dendrogyra cylindrus</i>	AB117299	Fukami et al. (2004)*
<i>Desmophyllum dianthus</i>	JQ611387	Addamo et al. (2012)
<i>Dichocoenia stokesii</i>	AY451360	Shearer & Coffroth (2008)
<i>Diploastrea heliopora</i>	EU371660	Huang et al. (2008)*
<i>Diploria labyrinthiformis</i>	AB117224	Fukami et al. (2004)*
<i>Dipsastraea amicornum</i>	AB441193	Fukami et al. (2008)*
<i>Dipsastraea favus</i>	AB117267	Fukami et al. (2004)*
<i>Duncanopsammia axifuga</i>	HG965325	Arrigoni et al. (2014)
<i>Echinophyllia echinoporoides</i>	LT605258	Arrigoni et al. (2016a)
<i>Echinopora pacifica</i>	AB117261	Fukami et al. (2004)*
<i>Eguchipsammia serpentina</i>	HG965327	Arrigoni et al. (2014)
<i>Enallopsammia rostrata</i>	HM018632	Kitahara et al. (2010)*
<i>Eusmilia fastigiata</i>	AB117294	Fukami et al. (2004)*
<i>Favites abdita</i>	HQ203267	Huang et al. (2011)*
<i>Flabellum (Flabellum) vaughani</i>	HM018644	Kitahara et al. (2010)*
<i>Fungiacyathus (Bathyactis) turbinolioides</i>	HM018648	Kitahara et al. (2010)*
<i>Galaxea fascicularis</i>	AB441201	Fukami et al. (2008)*
<i>Gardineria paradoxa</i>	GQ868681	Stolarski et al. (2011)*
<i>Gardineroseris planulata</i>	AB441218	Fukami et al. (2008)*
<i>Goniastrea retiformis</i>	EU371701	Huang et al. (2008)*
<i>Goniopora columna</i>	AB907032	Kitano et al. (2014)*
<i>Halomitra pileus</i>	LC191477	Oku et al. (2017)
<i>Heliofungia actiniformis</i>	EU149876	Gittenberger et al. (2011)

Species	Accession no.	Reference
<i>Helioseris cucullata</i>	AB441221	Kitahara et al. (2008)*
<i>Herpolitha limax</i>	AB441223	Kitahara et al. (2008)*
<i>Heteropsammia cochlea</i>	HG965330	Arrigoni et al. (2014a)
<i>Homophyllia australis</i>	LN875864	Arrigoni et al. (2016b)
<i>Homophyllia bowerbanki</i>	LN875878	Arrigoni et al. (2016b)
<i>Horastrea indica</i>	AM494865	Stefani et al. (2007)
<i>Hydnophora exesa</i>	JQ920443	Unpublished
<i>Isophyllia sinuosa</i>	AB117238	Fukami et al. (2004)*
<i>Isopora palifera</i>	AB441248	Fukami et al. (2008)*
<i>Javania</i> sp.	HM018654	Kitahara et al. (2010)*
<i>Leptastrea pruinosa</i>	AB441196	Fukami et al. (2008)*
<i>Leptopsammia pruvoti</i>	HG965332	Arrigoni et al. (2014a)
<i>Leptoria phrygia</i>	HE654611	Arrigoni et al. (2012)
<i>Letepsammia formosissima</i>	GQ868684	Storlarski et al. (2011)*
<i>Lithophyllon scabra</i>	LC191482	Oku et al. (2017)
<i>Lobactis scutaria</i>	AB441224	Fukami et al. (2008)*
<i>Madracis asanoi</i>	HM018656	Kitahara et al. (2010)*
<i>Madrepora oculata</i>	HM018659	Kitahara et al. (2010)*
<i>Manicina areolata</i>	AB117227	Fukami et al. (2004)*
<i>Meandrina brasiliensis</i>	AB117297	Fukami et al. (2004)*
<i>Merulina ampliata</i>	AB117283	Fukami et al. (2004)*
<i>Micromussa amakusensis</i>	HE654643	Arrigoni et al. (2012)
<i>Montastraea cavernosa</i>	AB117289	Fukami et al. (2004)*
<i>Montipora capitata</i>	HQ246613	Forsman et al. (2010)
<i>Moseleya latistellata</i>	HQ203293	Huang et al. (2011)*
<i>Mussa angulosa</i>	AB117239	Fukami et al. (2004)*
<i>Mussismilia hispida</i>	AB117233	Fukami et al. (2004)*
<i>Mycedium elephantotus</i>	AB117388	Fukami et al. (2004)*
<i>Mycetophyllia danaana</i>	AB117234	Fukami et al. (2004)*
<i>Nemanzophyllia turbida</i>	HF954193	Benzoni et al. (2014)
<i>Oculina diffusa</i>	AB117293	Fukami et al. (2004)*
<i>Orbicella faveolata</i>	KF579908	Kirk et al. (2013)

Species	Accession no.	Reference
<i>Oulastrea crispata</i>	FJ345435	Huang et al. (2009)
<i>Oulophyllia crispa</i>	AB117276	Fukami et al. (2004)*
<i>Oxypora lacera</i>	LT605275	Arrigoni et al. (2016a)
<i>Pachyseris speciosa</i>	AB441222	Fukami et al. (2008)*
<i>Paramontastraea peresi</i>	HE654598	Arrigoni et al. (2012)
<i>Pavona cactus</i>	AB441216	Fukami et al. (2008)*
<i>Pectinia paeonia</i>	AB117386	Fukami et al. (2004)*
<i>Phyllangia papuensis</i>	HM018660	Kitahara et al. (2010)*
<i>Physogyra lichtensteini</i>	KU762014	Unpublished
<i>Placotrochides scaphula</i>	HM018661	Kitahara et al. (2010)*
<i>Platygyra sinensis</i>	HM018662	Kitahara et al. (2010)*
<i>Plerogyra</i> sp.	HM018663	Kitahara et al. (2010)*
<i>Plesiastrea versipora</i>	FR837984	Benzoni et al. (2011)
<i>Pleuractis moluccensis</i>	LC191471	Oku et al. (2017)
<i>Podabacia</i> sp.	EU149888	Gittenberger et al. (2011)
<i>Polyphyllia talpina</i>	EU149915	Gittenberger et al. (2011)
<i>Porites rus</i>	FJ423979	Forsman et al. (2009)
<i>Pourtalosmia anthophyllites</i>	JQ611390	Addamo et al. (2012)
<i>Psammocora contigua</i>	AB441209	Fukami et al. (2008)*
<i>Pseudodiploria strigosa</i>	KF579902	Kirk et al. (2013)
<i>Pseudosiderastrea tayamai</i>	AM494866	Stefani et al. (2007)
<i>Rhizopsammia wettsteini</i>	HG965337	Arrigoni et al. (2014)
<i>Rhizosmia robusta</i>	HM018664	Kitahara et al. (2010)*
<i>Rhombopsammia niphada</i>	GQ868683	Storlarski et al. (2011)*
<i>Sandalolitha dentata</i>	EU149914	Gittenberger et al. (2011)
<i>Scapophyllia cylindrica</i>	FJ345444	Huang et al. (2009)
<i>Sclerophyllia maxima</i>	LM993329	Arrigoni et al. (2014a)*
<i>Scolymia cubensis</i>	AB117236	Fukami et al. (2004)*
<i>Seriatopora hystrix</i>	AB441234	Fukami et al. (2008)*
<i>Siderastrea siderea</i>	AB441211	Fukami et al. (2008)*
<i>Solenastrea bournoni</i>	AB117291	Fukami et al. (2004)*
<i>Stenocyathus vermiformis</i>	HM018619	Kitahara et al. (2010)*

Species	Accession no.	Reference
<i>Stephanocoenia intersepta</i>	AB441228	Fukami et al. (2008)*
<i>Stephanocyathus (Acinocyathus) spiniger</i>	HM018665	Kitahara et al. (2010)*
<i>Stylaraea punctata</i>	AB907071	Kitano et al. (2014)*
<i>Stylocoeniella guentheri</i>	AB441225	Fukami et al. (2008)*
<i>Trachyphyllia geoffroyi</i>	AB117287	Fukami et al. (2004)*
<i>Trochocyathus (Trochocyathus) rhombocolumna</i>	HM018668	Kitahara et al. (2010)*
<i>Tropidocyathus lessonii</i>	HM018669	Kitahara et al. (2010)*
<i>Truncatoflabellum</i> sp.	HM018673	Kitahara et al. (2010)*
<i>Tubastraea coccinea</i>	DQ445807	Hellberg (2006)
<i>Turbinaria peltata</i>	AB441240	Fukami et al. (2008)*
<i>Zoopilus echinatus</i>	EU149916	Gittenberger et al. (2011)
H3		
<i>Acanthastrea rotundoflora</i>	LK022410	Arrigoni et al. (2014b)_
<i>Acropora muricata</i>	M60509	Miller et al. (1990)
<i>Astrea curta</i>	HQ203604	Huang et al. (2011)*
<i>Astreopora expansa</i>	REL0022	MN965796
<i>Bernardpora stutchburyi</i>	REL0029	MN965801
<i>Caulastraea tumida</i>	HQ203524	Huang et al. (2011)*
<i>Coelastrea aspera</i>	KJ666170	Huang et al. (2014a)*
<i>Cynarina lacrymalis</i>	LK022419	Arrigoni et al. (2014b)_
<i>Cyphastrea microphthalma</i>	LT575763	Arrigoni et al. (2017)
<i>Diploastrea heliopora</i>	HQ203531	Huang et al. (2011)*
<i>Dipsastraea matthaii</i>	HQ203553	Huang et al. (2011)*
<i>Oxypora echinata</i>	LK022415	Arrigoni et al. (2014b)_
<i>Fimbriaphyllia ancora</i>	REL0024	MN965798
<i>Favites valenciennesii</i>	HQ203611	Huang et al. (2011)*
<i>Fungia fungites</i>	REL0067	MN965805
<i>Galaxea astreata</i>	REL0020	MN965795
<i>Goniastrea retiformis</i>	KJ666252	Huang et al. (2014a)*
<i>Goniopora stokesi</i>	REL0140	MN965807
<i>Heliofungia actiniformis</i>	REL0153	MN965808
<i>Herpolitha limax</i>	REL0026	MN965800

Species	Accession no.	Reference
<i>Homophyllia australis</i>	LN875938	Arrigoni et al. (2016b)
<i>Hydnophora microconos</i>	HQ203594	Huang et al. (2011)*
<i>Leptoria phrygia</i>	HQ203597	Huang et al. (2011)*
<i>Lobophyllia valenciennesii</i>	LK022427	Arrigoni et al. (2014b)_
<i>Merulina triangularis</i>	KJ666292	Huang et al. (2014a)*
<i>Micromussa amakusensis</i>	LK022401	Arrigoni et al. (2014b)_
<i>Montastraea cavernosa</i>	HQ203601	Huang et al. (2011)*
<i>Montipora stellata</i>	REL0059	MN965804
<i>Moseleya latistellata</i>	HQ203614	Huang et al. (2011)*
<i>Mycedium robokaki</i>	HQ203616	Huang et al. (2011)*
<i>Orbicella annularis</i>	HQ203600	Huang et al. (2011)*
<i>Oulastrea crispata</i>	REL0016	MN965794
<i>Oulophyllia crispa</i>	HQ203620	Huang et al. (2011)*
<i>Oxypora lacera</i>	LK022417	Arrigoni et al. (2014b)_
<i>Pachyseris speciosa</i>	REL0025	MN965799
<i>Paragoniastrea russelli</i>	KJ666178	Huang et al. (2014a)*
<i>Pavona decussata</i>	REL00139	MN965809
<i>Pectinia paeonia</i>	HQ203624	Huang et al. (2011)*
<i>Micromussa multipunctata</i>	HQ203608	Huang et al. (2011)*
<i>Physophyllia ayleni</i>	HQ203622	Huang et al. (2011)*
<i>Platygyra pini</i>	HQ203631	Huang et al. (2011)*
<i>Plesiastrea versipora</i>	HQ203518	Huang et al. (2011)*
<i>Polyphyllia talpina</i>	REL0056	MN965803
<i>Porites monticulosa</i>	REL0124	MN965806
<i>Scapophyllia cylindrica</i>	HQ203637	Huang et al. (2011)*
<i>Trachyphyllia geoffroyi</i>	HQ203638	Huang et al. (2011)*
<i>Tubastraea diaphana</i>	REL0052	MN965802
<i>Turbinaria mesenterina</i>	REL0023	MN965797

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Table S2. Collection information for species sampled in this study. Also included are catalogue numbers of specimens deposited at the Zoological Reference Collection, Lee Kong Chian Natural History Museum (Singapore).

Species	Location	GPS coordinates	Catalog numbers
Scleractinia			
<i>Acropora aspera</i>	Terumbu Raya	1.2138° N, 103.7530° E	ZRC.CNI.1418
<i>Astreopora expansa</i>	Sisters Islands	1.215° N, 103.8333° E	ZRC.CNI.1419
<i>Cyphastrea serailia</i>	Pulau Hantu	1.2223°N, 103.7499° E	ZRC.CNI.1427
<i>Diploastrea heliopora</i>	Raffles Lighthouse	1.1600° N, 103.7409° E	ZRC.CNI.1426
<i>Dipsastraea maxima</i>	Terumbu Raya	1.2138° N, 103.7530° E	ZRC.CNI.1417
<i>Fimbriaphyllia ancora</i>	Raffles Lighthouse	1.1600° N, 103.7409° E	ZRC.CNI.1425
<i>Galaxea astreata</i>	Pulau Hantu	1.2223°N, 103.7499° E	ZRC.CNI.1429
<i>Goniastrea retiformis</i>	Terumbu Raya	1.2138° N, 103.7530° E	ZRC.CNI.1416
<i>Goniopora lobata</i>	St John's Island	1.2167° N, 103.8500° E	ZRC.CNI.1430
<i>Herpolitha limax</i>	Raffles Lighthouse	1.1600° N, 103.7409° E	ZRC.CNI.1421
<i>Lobophyllia radians</i>	Raffles Lighthouse	1.1600° N, 103.7409° E	ZRC.CNI.1415
<i>Oulastrea crispata</i>	Pulau Hantu	1.2223°N, 103.7499° E	ZRC.CNI.1428
<i>Pachyseris speciosa</i>	Raffles Lighthouse	1.1600° N, 103.7409° E	ZRC.CNI.1424
<i>Platygyra sinensis</i>	Sisters Islands	1.215° N, 103.8333° E	ZRC.CNI.1413
<i>Plesiastrea versipora</i>	Kusu Island	1.2232° N, 103.8611° E	ZRC.CNI.1422
<i>Pocillopora acuta</i>	Sisters Islands	1.215° N, 103.8333° E	ZRC.CNI.1423
<i>Porites lobata</i>	Pulau Hantu	1.2223°N, 103.7499° E	ZRC.CNI.1420
<i>Turbinaria mesenterina</i>	Pulau Hantu	1.2223°N, 103.7499° E	ZRC.CNI.1414
Corallimorpharia			
<i>Rhodactis inchoata</i>	Sisters Islands	1.215° N, 103.8333° E	ZRC.CNI.1349
<i>Rhodactis indosinensis</i>	Sisters Islands	1.215° N, 103.8333° E	ZRC.CNI.1351

Table S3. Numbers of alignments, regions and baits designed based on reference genomes listed in Table 1.

Gene model	Number of alignments	Number of regions	Number of baits
<i>Acropora digitifera</i>	51	87	1376
<i>Acropora tenuis</i>	27	63	788
<i>Fungia</i> sp.	48	90	1118
<i>Galaxea fascicularis</i>	80	193	2113
<i>Goniastrea aspera</i>	30	73	883
<i>Montastraea cavernosa</i>	86	132	2041
<i>Orbicella faveolata</i>	28	40	617
<i>Pocillopora damicornis</i>	44	56	834
<i>Porites lutea</i>	84	156	2493
<i>Stylophora pistillata</i>	127	249	3656

Table S4. Statistics of Illumina sequencing reads.

Species	Raw reads	Trimmed reads (paired)	Mapped barcoding reads (reads / %)
Scleractinia			
<i>Acropora aspera</i>	12,474,167	10,449,179	–
<i>Astreopora expansa</i>	12,494,661	10,751,086	5,489,096 / 51.06
<i>Cyphastrea serailia</i>	13,036,636	10,688,227	3,995,496 / 37.38
<i>Diploastrea heliopora</i>	8,383,376	7,512,634	–
<i>Dipsastraea maxima</i>	10,317,986	9,304,707	3,972,234 / 42.69
<i>Fimbriaphyllia ancora</i>	11,045,605	9,045,157	3,386,460 / 37.44
<i>Galaxea astreata</i>	16,119,962	14,368,535	5,852,956 / 40.73
<i>Goniastrea retiformis</i>	12,483,736	10,839,136	–
<i>Goniopora lobata</i>	6,220,293	4,941,626	–
<i>Herpolitha limax</i>	9,627,166	8,699,061	3,017,964 / 34.69
<i>Lobophyllia radians</i>	9,468,583	7,769,008	–
<i>Oulastrea crispata</i>	8,603,319	7,625,188	2,732,530 / 35.84
<i>Pachyseris speciosa</i>	8,585,709	7,585,519	1,788,640 / 23.58
<i>Platygyra sinensis</i>	11,893,764	9,881,863	2,293,294 / 23.21
<i>Plesiastrea versipora</i>	8,890,660	7,077,524	1,440,808 / 20.36
<i>Pocillopora acuta</i>	6,597,280	5,664,946	–
<i>Porites lobata</i>	9,948,439	9,089,241	1,676,524 / 18.45
<i>Turbinaria mesenterina</i>	9,925,475	8,679,417	–
Corallimorpharia			
<i>Rhodactis inchoata</i>	7,601,449	6,538,492	–
<i>Rhodactis indosinensis</i>	6,825,624	5,832,989	1,290,036 / 22.12

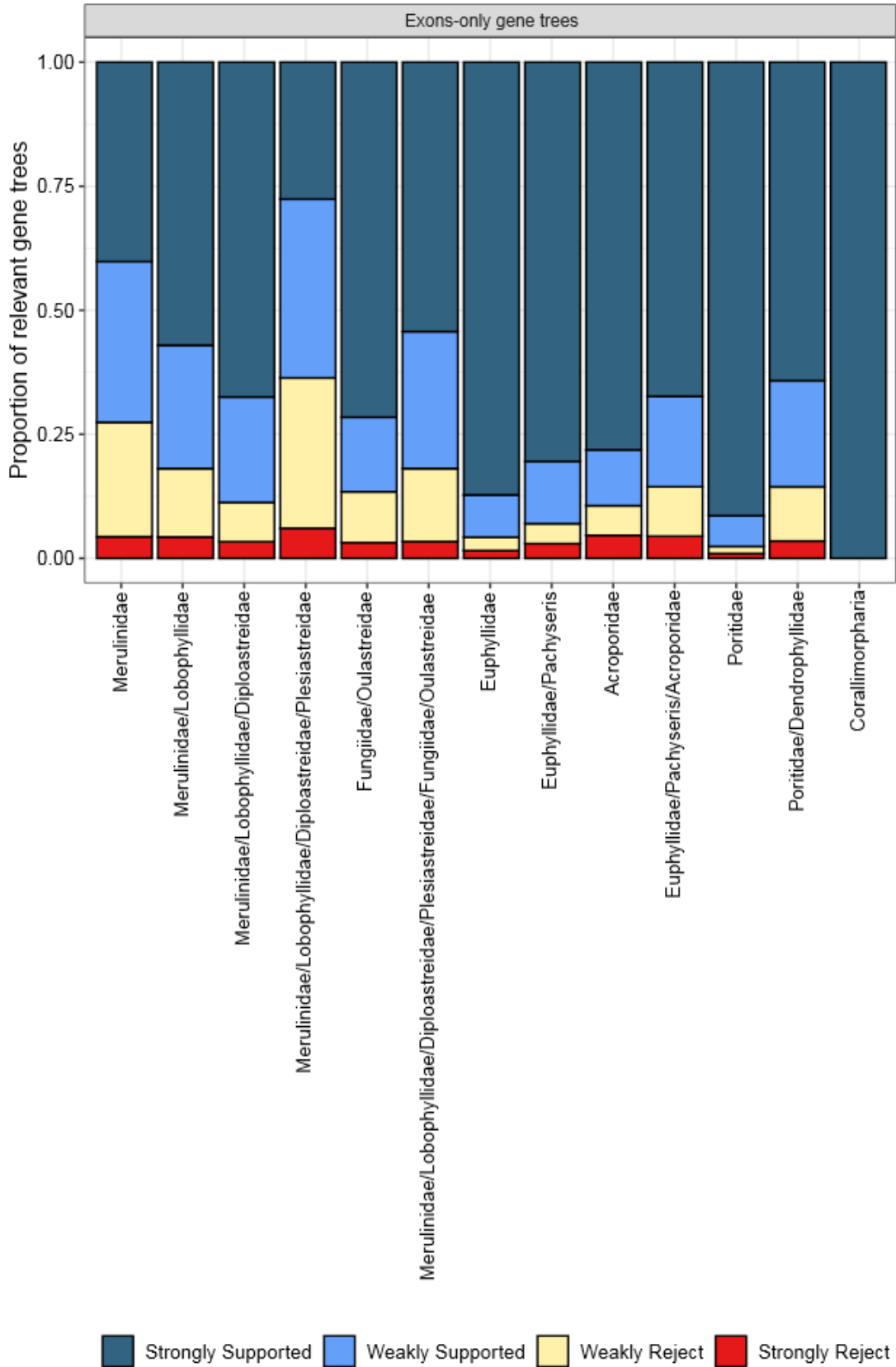


Figure S1. Proportion of maximum likelihood gene trees (RAxML) supporting family-level monophyly as inferred by DiscoVista compared to Figure 1.

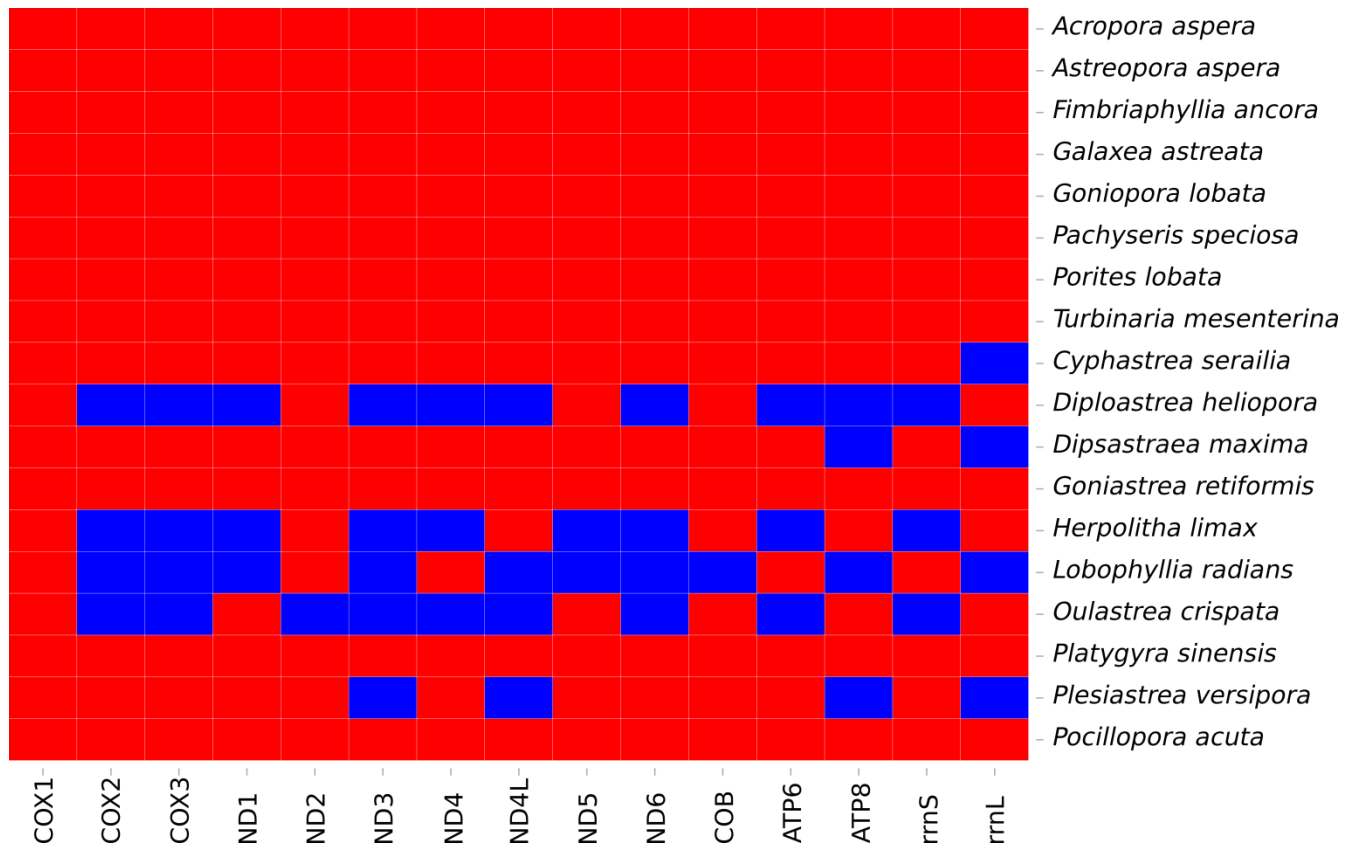


Figure S2. Coverage of mitogenomic signal recovered from assembly of trimmed reads as annotated by MITOS2 (red: present; blue: absent).

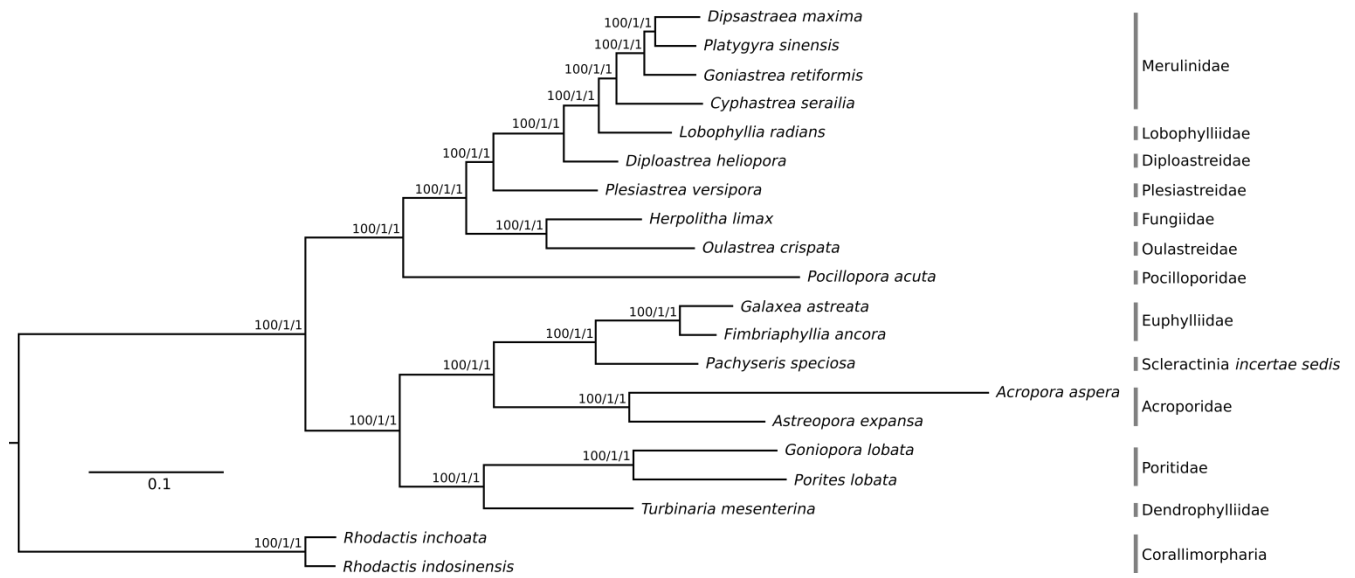


Figure S3. Maximum likelihood phylogeny of Scleractinia for exons-only dataset (minimum taxon occupancy of 3 scleractinian taxa per loci; 30.86% missing data; 452 loci over 865 exon regions; 201,137 bp) with *Rhodactis* as outgroup. Numbers on nodes represent bootstrap values (RAxML) / posterior probability (ExaBayes) / posterior probability (ASTRAL).