

Table S3. The conserved domains identified in selected hits from *Prorocentrum cordatum* CCMP1329 and 2233, and *Amphidinium carterae* CCMP1314 transcriptome assemblies.

Protein	CD_Name	CD_Accession
alpha-galactosidase	GH27	cd14792
	PLN02808	PLN02808
	Melibiase_2	pfam16499
	Melibiase_C	pfam17801
actin-related protein 2/3 complex subunit 1	WD40	cd00200
	WD40	COG2319
actin-related protein 2/3 complex subunit 2	P34-Arc	pfam04045
actin-related protein 2/3 complex subunit 4	ARPC4	pfam05856
	PTZ00278	PTZ00278
AP-2 complex subunit mu	AP-2_Mu2_Cterm	cd09251
	Adap_comp_sub	pfam00928
	AP2_Mu_N	cd14836
cathepsin D	Asp	pfam00026
	Cathepsin_D2	cd05490
	PTZ00165	PTZ00165
cathepsin L, isoform CRA_a	Peptidase_C1	pfam00112
	Peptidase_C1A	cd02248
	Pept_C1	smart00645
	PTZ00203	PTZ00203
	COG4870	COG4870
	Inhibitor_I29	smart00848
	Inhibitor_I29	pfam08246
charged multivesicular body protein 3	Snf7	pfam03357
charged multivesicular body protein 5	PTZ00464	PTZ00464
	Snf7	pfam03357
charged multivesicular body protein 6	Snf7	pfam03357
clathrin light chain	Clathrin_lg_ch	pfam01086
clathrin heavy chain	Clathrin_H_link	pfam13838
	CLH	smart00299
	Clathrin	pfam00637
coronin-1	PTZ00420	PTZ00420
	DUF1899	pfam08953
	WD40	cd00200
	WD40	COG2319
dynamamin	Dynamamin_M	pfam01031
	DLP_1	cd08771
	DYNc	smart00053
	CrfC	COG0699
	Dynamamin_N	pfam00350
	Dynamamin_M	pfam01031
	GED	pfam02212
	GED	smart00302
EH domain-containing proteins	EHD	cd09913
	DUF5600	pfam18150
	EH	smart00027
	EH	cd00052
	Dynamamin_N	pfam00350
	EF-hand_4	pfam12763
	EHD_N	pfam16880
Epsin	ENTH	cd03571
	ENTH	pfam01417
	ENTH	smart00273
folate receptor precursor	Folate_rec	pfam03024
	Folate_rec	pfam03024
phosphatidylinositol 3-kinase phosphatidylinositol 3-kinase catalytic subunit type 3	PI3Kc_III	cd00896
	PI3Kc	smart00146
	PI3_PI4_kinase	pfam00454
	TEL1	COG5032
	PIPKc	cd00139

phosphatidylinositol 4-phosphate 5-kinase-like protein 1	PIP5K	pfam01504
	PIPKc	smart00330
	MSS4	COG5253
	C2A_C2C_Synaptotagmin_like	cd08391
	PLN03185	PLN03185
	C2	pfam00168
	C2	smart00239
phospholipase D	PLN02866	PLN02866
	PLDc_vPLD1_2_yPLD_like_2	cd09141
	ClS	COG1502
protein transport protein Sec61 subunit alpha	PTZ00219	PTZ00219
	3a0501s007	TIGR00967
	SecY	pfam00344
	SecY	COG0201
protein transport protein Sec61 subunit beta	Sec61_beta	pfam03911
	PRK01253	PRK01253
protein transport protein Sec61 subunit gamma	PTZ00478	PTZ00478
	Sss1	COG2443
ras-related protein Rab-4A	RAB	smart00175
	Rab	cd00154
	Ras	pfam00071
	PLN03108	PLN03108
	Gem1	COG1100
	small_GTP	TIGR00231
	Rab4	cd04113
ras-related protein Rab-5A	Rab5_related	cd01860
	Rab5_related	cd01860
	Ras	pfam00071
	RAB	smart00175
	Ras	pfam00071
	RAB	smart00175
	PLN03110	PLN03110
	Gem1	COG1100
	PLN03110	PLN03110
	Gem1	COG1100
	small_GTP	TIGR00231
small_GTP	TIGR00231	
ras-related protein Rab-7a	Rab7	cd01862
	RAB	smart00175
	Ras	pfam00071
	PLN03108	PLN03108
	Gem1	COG1100
	small_GTP	TIGR00231
ras-related protein Rab-11A	Rab11_like	cd01868
	PLN03110	PLN03110
	RAB	smart00175
	Ras	pfam00071
	Gem1	COG1100
	small_GTP	TIGR00231
syntaxin 7	SNARE_Qa	cd15840
tripeptidyl-peptidase 1 (lysosomal pepstatin insensitive protease)	Peptidases_S53	cd04056
	Pro-kuma_activ	pfam09286
	Pro-peptidase_S53	cd11377
	Pro-kuma_activ	smart00944
	COG4934	COG4934
tumor susceptibility gene 101 protein	UEV	pfam05743
	Vps23_core	pfam09454
vacuolar protein sorting VPS4-1	RecA-like_VPS4	cd19521
	SpoVK	COG0464
	CDC48	TIGR01243
	PRK03992	PRK03992
	AAA	pfam00004
	Vps4_C	pfam09336

	AAA	smart00382
vacuolar protein-sorting-associated protein 25	ESCRT-II	pfam05871
vacuolar protein sorting-associated protein 26	Vps26	pfam03643
vacuolar protein sorting-associated protein 29	MPP_Vps29	cd07394
vacuolar protein sorting-associated protein 35	Vps35	pfam03635
vacuolar protein-sorting-associated protein 36	EAP30	pfam04157
vacuolar protein sorting-associated protein 45	Sec1	pfam00995
	SEC1	COG5158
vacuolar protein sorting-associated protein VTA1 homolog	Vta1	pfam04652
vacuolar-sorting protein SNF8	EAP30	pfam04157
V-type proton ATPase 116 kDa subunit a3	V_ATPase_I	pfam01496
	Ntpl	COG1269
	PRK05771	PRK05771
WASH complex subunit 4	WASH-7_mid	pfam14744
	WASH-7_C	pfam14746
WASH complex subunit 5	Strumpellin	pfam10266