

Table S2. List of biogeographic origin and sequence IDs and accession numbers of used contigs for all antioxidant sequences presented in this study. New sequences generated in this study are highlighted (*).

Gene	Sequence name	ITS2 type	Culture ID	Host	Geographic origin	Contigs used for sequence assembly
MnSOD	A1 Casskb8 MnSOD _c18645	A1	Casskb8	<i>Cassiopea xamachana</i>	Hawai'i	kb8_c18645
MnSOD	A1 Casskb8 MnSOD rep_c710	A1	Casskb8	<i>Cassiopea xamachana</i>	Hawai'i	kb8_rep_c710
MnSOD	A1 Casskb8 SymMnSOD3 rep_c4192	A1	Casskb8	<i>Cassiopea xamachana</i>	Hawai'i	kb8_rep_c4192
MnSOD	A1 CCMP2467 MnSOD Assembly1	A1	CCMP2467	<i>Stylophora pistillata</i>	Red Sea	gi 556381675 gb GAKY01035952.1 gi 556381673 gb GAKY01035954.1 gi 556381670 gb GAKY01035956.1 gi 556381668 gb GAKY01035958.1 gi 556375787 gb GAKY01041471.1
MnSOD	A1 CCMP2467 MnSOD Assembly3	A1	CCMP2467	<i>Stylophora pistillata</i>	Red Sea	gi 556374884 gb GAKY01042229.1 gi 556374883 gb GAKY01042230.1 gi 556374881 gb GAKY01042231.1 gi 556374878 gb GAKY01042234.1
MnSOD	A1 CCMP2467 MnSOD Assembly4	A1	CCMP2467	<i>Stylophora pistillata</i>	Red Sea	gi 556374880 gb GAKY01042232.1 gi 556374879 gb GAKY01042233.1 gi 556242634 gb GAKY01158064.1
MnSOD	A1 CCMP2467 SymMnSOD3 Assembly2	A1	CCMP2467	<i>Stylophora pistillata</i>	Red Sea	gi 556202041 gb GAKY01194558.1 gi 556202040 gb GAKY01194559.1 gi 556202039 gb GAKY01194560.1 gi 556202038 gb GAKY01194561.1 gi 556202037 gb GAKY01194562.1
MnSOD	A1 CCMP2467 SymMnSOD3 Assembly6	A1	CCMP2467	<i>Stylophora pistillata</i>	Red Sea	gi 556239202 gb GAKY01161046.1 gi 556202036 gb GAKY01194563.1

*MnSOD	B1 Ap1 SymMnSOD1 KJ672521	B1	Ap1	<i>Aiptasia pulchella</i>	Hawai'i	GenBank KJ672521
MnSOD	B1 Mf1.05b MnSOD_c29099	B1	Mf1.05b	<i>Orbicella faveolata</i>	Florida Keys	mf105_c29099
MnSOD	B1 Mf1.05b SymMnSOD1 Assembly2	B1	Mf1.05b	<i>Orbicella faveolata</i>	Florida Keys	mf105_rep_c3255 mf105_s63926 mf105_s64469
MnSOD	B1 Mf1.05b SymMnSOD2 Assembly1	B1	Mf1.05b	<i>Orbicella faveolata</i>	Florida Keys	mf105_c50851 mf105_rep_c50851 mf105_rep_c9010 mf105_s74052
MnSOD	B1 Mf1.05b SymMnSOD2 rep_c13368	B1	Mf1.05b	<i>Orbicella faveolata</i>	Florida Keys	mf105_rep_c13368
MnSOD	B1 Mf1.05b SymMnSOD3_c19510	B1	Mf1.05b	<i>Orbicella faveolata</i>	Florida Keys	mf105_c19510
MnSOD	C1 CCMP2466 SymMnSOD1 AHI54358	C1	CCMP2466	<i>Discosoma sanctithomae</i>	Jamaica	GenBank AHI54358
*MnSOD	C15 M.digitata SymMnSOD1 KJ672522	C15	N/A	<i>Montipora digitata</i>	Great Barrier Reef	GenBank KJ672522
MnSOD	C3 A.aspera SymMnSOD1 FE866047	C3	N/A	<i>Acropora aspera</i>	Great Barrier Reef	GenBank FE866047
*MnSOD	C3 Mp SymMnSOD1 KJ672520	C3	Mp	<i>Mastigias papua</i>	Palau	GenBank KJ672520
MnSOD	D A.hyacinthus SymMnSOD2 GAFF01017905	D	N/A	<i>Acropora hyacinthus</i>	American Samoa	gi 452163680 gb GAFF01017905.1
MnSOD	D A.hyacinthus SymMnSOD3 GAFF01006955	D	N/A	<i>Acropora hyacinthus</i>	American Samoa	gi 452174630 gb GAFF01006955.1
MnSOD	F1 CCMP2468 SymMnSOD2 Assembly1	F1	CCMP2468	<i>Montipora capitata</i>	Hawai'i	gi 512780496 gb KC937118.1 gi 512783950 gb KC940572.1 gi 512788616 gb KC945238.1 gi 512788962 gb KC945584.1 gi 512793081 gb KC949703.1 gi 512793147 gb KC949769.1 gi 512794392 gb KC951014.1
FeSOD	A PF-2005 SymFeSOD AY916504	A	PF-2005	?	?	GenBank AY916504
*FeSOD	B1 Ap1 SymFeSOD KJ672519	B1	Ap1	<i>Aiptasia pulchella</i>	Hawai'i	GenBank KJ672519

*FeSOD	E CCMP421 SymFeSOD KJ672517	E	CCMP421	free-living	New Zealand	GenBank KJ672517
*FeSOD	F1 Mv SymFeSOD KJ672518	F1	Mv	<i>Montipora capitata</i>	Hawai'i	GenBank KJ672518
APX	A1 Casskb8 APX Assembly4	A1	Casskb8	<i>Cassiopea xamachana</i>	Hawai'i	kb8_rep_c17856 kb8_rep_c21314
APX	A1 Casskb8 SymAPX rep_c1337	A1	Casskb8	<i>Cassiopea xamachana</i>	Hawai'i	kb8_rep_c1337
APX	A1 Casskb8 SymAPX1 rep_c1302	A1	Casskb8	<i>Cassiopea xamachana</i>	Hawai'i	kb8_rep_c1302
APX	A1 Casskb8 SymAPX1 rep_c1797	A1	Casskb8	<i>Cassiopea xamachana</i>	Hawai'i	kb8_rep_c1797
APX	A1 Casskb8 SymAPX2 Assembly1	A1	Casskb8	<i>Cassiopea xamachana</i>	Hawai'i	kb8_rep_c25023 kb8_rep_c47803 kb8_rep_c53272 kb8_s59539 kb8_s66605
APX	A1 Casskb8 SymAPX3 Assembly2	A1	Casskb8	<i>Cassiopea xamachana</i>	Hawai'i	kb8_rep_c161 kb8_s59940 kb8_s66277
APX	A1 Casskb8 SymAPX3 Assembly3	A1	Casskb8	<i>Cassiopea xamachana</i>	Hawai'i	kb8_rep_c2735 kb8_s66202
APX	A1 Casskb8 SymAPX3 rep_c280	A1	Casskb8	<i>Cassiopea xamachana</i>	Hawai'i	kb8_rep_c280
APX	A1 Casskb8 SymAPX5 rep_c18778	A1	Casskb8	<i>Cassiopea xamachana</i>	Hawai'i	kb8_rep_c18778
APX	A1 CCMP2467 APX Locus_35678	A1	CCMP2467	<i>Stylophora pistillata</i>	Red Sea	gi 556278914 gb GAKY01124934.1
APX	A1 CCMP2467 SymAPX1 Assembly8	A1	CCMP2467	<i>Stylophora pistillata</i>	Red Sea	gi 556203728 gb GAKY01192980.1 + Locus_33092
APX	A1 CCMP2467 SymAPX1 GAKY01045714	A1	CCMP2467	<i>Stylophora pistillata</i>	Red Sea	gi 556370780 gb GAKY01045714.1
APX	A1 CCMP2467 SymAPX1 Locus_51655	A1	CCMP2467	<i>Stylophora pistillata</i>	Red Sea	gi 556237089 gb GAKY01162872.1

							gi 556237087 gb GAKY01162873.1
							gi 556237086 gb GAKY01162874.1
APX	A1 CCMP2467 SymAPX1 Locus_9887	A1	CCMP2467	<i>Stylophora pistillata</i>	Red Sea		gi 556370789 gb GAKY01045707.1
							gi 556370788 gb GAKY01045708.1
							gi 556370779 gb GAKY01045715.1
*APX	A1 CCMP2467 SymAPX2 KJ672516	A1	CCMP2467	<i>Stylophora pistillata</i>	Red Sea		NCBI KJ672516
APX	A1 CCMP2467 SymAPX2 Locus_1984	A1	CCMP2467	<i>Stylophora pistillata</i>	Red Sea		gi 556411510 gb GAKY01009605.1
							gi 556411509 gb GAKY01009606.1
							gi 556411508 gb GAKY01009607.1
							gi 556411507 gb GAKY01009608.1
							gi 556411506 gb GAKY01009609.1
							gi 556411504 gb GAKY01009610.1
APX	A1 CCMP2467 SymAPX3 Assembly4	A1	CCMP2467	<i>Stylophora pistillata</i>	Red Sea		gi 556282844 gb GAKY01121695.1
							gi 556248744 gb GAKY01152490.1
							gi 556210679 gb GAKY01186456.1
							gi 556210677 gb GAKY01186457.1
APX	A1 CCMP2467 SymAPX3 Locus_31699	A1	CCMP2467	<i>Stylophora pistillata</i>	Red Sea		gi 556288848 gb GAKY01116859.1
							gi 556288847 gb GAKY01116860.1
							gi 556288845 gb GAKY01116861.1
							gi 556288844 gb GAKY01116862.1
							gi 556288843 gb GAKY01116863.1
							gi 556288842 gb GAKY01116864.1
APX	A1 CCMP2467 SymAPX5 Locus_10740	A1	CCMP2467	<i>Stylophora pistillata</i>	Red Sea		gi 556366894 gb GAKY01049344.1
							gi 556366892 gb GAKY01049346.1
							gi 556366889 gb GAKY01049349.1
APX	A1 CCMP2467 SymAPX6 Locus_36434	A1	CCMP2467	<i>Stylophora pistillata</i>	Red Sea		gi 556275911 gb GAKY01127507.1
							gi 556275910 gb GAKY01127508.1
*APX	B1 Ap1 SymAPX1 KJ672513	B1	Ap1	<i>Aiptasia pulchella</i>	Hawai'i		GenBank KJ672513

APX	B1 Mf1.05b SymAPX1 Assembly1	B1	Mf1.05b	<i>Orbicella faveolata</i>	Florida Keys	mf105_rep_c1375 mf105_rep_c20868
APX	B1 Mf1.05b SymAPX1 Assembly3	B1	Mf1.05b	<i>Orbicella faveolata</i>	Florida Keys	mf105_rep_c1624 mf105_s62425
APX	B1 Mf1.05b SymAPX1 Assembly4	B1	Mf1.05b	<i>Orbicella faveolata</i>	Florida Keys	mf105_c30166 mf105_s54996
APX	B1 Mf1.05b SymAPX1 rep_c30083	B1	Mf1.05b	<i>Orbicella faveolata</i>	Florida Keys	mf105_rep_c30083
APX	B1 Mf1.05b SymAPX1 rep_c960	B1	Mf1.05b	<i>Orbicella faveolata</i>	Florida Keys	mf105_rep_c960
APX	B1 Mf1.05b SymAPX2 rep_c23432	B1	Mf1.05b	<i>Orbicella faveolata</i>	Florida Keys	mf105_rep_c23432
APX	B1 Mf1.05b SymAPX4 Assembly2	B1	Mf1.05b	<i>Orbicella faveolata</i>	Florida Keys	mf105_rep_c287 mf105_s64607 mf105_s71948
APX	B1 Mf1.05b SymAPX6 rep_c6573	B1	Mf1.05b	<i>Orbicella faveolata</i>	Florida Keys	mf105_rep_c6573
*APX	C1 CCMP2466 SymAPX1 KF835562	C1	CCMP2466	<i>Discosoma sanctithomae</i>	Jamaica	GenBank KF835562
*APX	C15 M.digitata SymAPX1 KJ672515	C15	N/A	<i>Montipora digitata</i>	Great Barrier Reef	GenBank KJ672515
APX	C3 A.aspera SymAPX1 FE865713	C3	N/A	<i>Acropora aspera</i>	Great Barrier Reef	gi 186958871 gb FE865713.1 FE865713
APX	C3 A.aspera SymAPX2 Assembly1	C3	N/A	<i>Acropora aspera</i>	Great Barrier Reef	gi 169299971 gb FE538076.1 FE538076 gi 169299972 gb FE538077.1 FE538077
APX	C3 S.hystrix SymAPX1 HM156698	C3	N/A	<i>Seriatopora hystrix</i>	Republic of China	NCBI HM156698
APX	D A.hyacinthus SymAPX1 GAFP01005798	D	N/A	<i>Acropora hyacinthus</i>	American Samoa	gi 452175787 gb GAFP01005798.1
APX	D A.hyacinthus SymAPX1 GAFP01021256	D	N/A	<i>Acropora hyacinthus</i>	American Samoa	gi 452160329 gb GAFP01021256.1
APX	D A.hyacinthus SymAPX2 GAFP01007188	D	N/A	<i>Acropora hyacinthus</i>	American Samoa	gi 452174397 gb GAFP01007188.1
APX	D A.hyacinthus SymAPX2 GAFP01018157	D	N/A	<i>Acropora hyacinthus</i>	American Samoa	gi 452163428 gb GAFP01018157.1
APX	D A.hyacinthus SymAPX3 GAFP01006424	D	N/A	<i>Acropora hyacinthus</i>	American Samoa	gi 452175161 gb GAFP01006424.1
APX	D A.hyacinthus SymAPX4 GAFP01007747	D	N/A	<i>Acropora hyacinthus</i>	American Samoa	gi 452173838 gb GAFP01007747.1
APX	D A.hyacinthus SymAPX5 Assembly1	D	N/A	<i>Acropora hyacinthus</i>	American Samoa	gi 452178808 gb GAFP01002806.1

gi|452181480|gb|GAFP01000134.1|

APX	F1	CCMP2468	SymAPX1	Assembly2	F1	CCMP2468	<i>Montipora capitata</i>	Hawai'i	gi 512790905 gb KC947527.1 gi 512792839 gb KC949461.1 gi 512793621 gb KC950243.1 gi 512794239 gb KC950861.1
APX	F1	CCMP2468	SymAPX1	Assembly3	F1	CCMP2468	<i>Montipora capitata</i>	Hawai'i	gi 512786816 gb KC943438.1 gi 512791389 gb KC948011.1 gi 512792900 gb KC949522.1 gi 512793754 gb KC950376.1
APX	F1	CCMP2468	SymAPX1	Assembly7	F1	CCMP2468	<i>Montipora capitata</i>	Hawai'i	gi 512787724 gb KC944346.1 gi 512794427 gb KC951049.1
APX	F1	CCMP2468	SymAPX4	KC944388	F1	CCMP2468	<i>Montipora capitata</i>	Hawai'i	gi 512787766 gb KC944388.1
*APX	F1	Mv	SymAPX1	KJ672514	F1	Mv	<i>Montipora capitata</i>	Hawai'i	GenBank KJ672514
KatG	A1	Casskb8	SymKatG1	Assembly2	A1	Casskb8	<i>Cassiopea xamachana</i>	Hawai'i	kb8_c15217 kb8_c40578 kb8_rep_c52653 kb8_rep_c52669
*KatG	A1	CCMP2467	SymKatG1	KJ735681	A1	CCMP2467	<i>Stylophora pistillata</i>	Red Sea	GenBank KJ735681
KatG	A1	CCMP2467	SymKatG1	Assembly1	A1	CCMP2467	<i>Stylophora pistillata</i>	Red Sea	gi 556313331 gb GAKY01096276.1 gi 556313326 gb GAKY01096280.1 gi 556313330 gb GAKY01096277.1 gi 556313328 gb GAKY01096279.1 gi 556313329 gb GAKY01096278.1
KatG	A1	CCMP2467	SymKatG1	Assembly3	A1	CCMP2467	<i>Stylophora pistillata</i>	Red Sea	gi 556419849 gb GAKY01002437.1 gi 556419848 gb GAKY01002438.1 gi 556419847 gb GAKY01002439.1
*KatG	B1	Ap1	SymKatG1	KJ672511	B1	Ap1	<i>Aiptasia pulchella</i>	Hawai'i	GenBank KJ672511
KatG	B1	Mf1.05b	SymKatG1	Assembly1	B1	Mf1.05b	<i>Orbicella faveolata</i>	Florida Keys	mf105_rep_c11051 mf105_rep_c14326

mf105_rep_c169
mf105_rep_c35625
mf105_rep_c50341
mf105_s50647
mf105_s58339
mf105_s62531
mf105_s72023
mf105_s74129

*KatG	C1 CCMP2466 SymKatG1 KF835563	C1	CCMP2466	<i>Discosoma sanctithomae</i>	Jamaica	GenBank KF835563
KatG	C3 A.aspera SymKatG1 Assembly1	C3	N/A	<i>Acropora aspera</i>	Great Barrier Reef	gi 145309691 gb EH036045.1 EH036045 gi 145309692 gb EH036046.1 EH036046 gi 145309693 gb EH036047.1 EH036047 gi 145309694 gb EH036048.1 EH036048 gi 186961140 gb FE866054.1 FE866054
KatG	D A.hyacinthus SymKatG1 GAFF01010732	D	N/A	<i>Acropora hyacinthus</i>	American Samoa	gi 452170853 gb GAFF01010732.1
KatG	D A.hyacinthus SymKatG1 GAFF1022639	D	N/A	<i>Acropora hyacinthus</i>	American Samoa	gi 452158946 gb GAFF01022639.1
*KatG	E CCMP421 SymKatG1 KJ672510	E	CCMP421	free-living	New Zealand	GenBank KJ672510
*KatG	F1 Mv SymKatG1 KJ672509	F1	Mv	<i>Montipora capitata</i>	Hawai'i	GenBank KJ672509
KatG	A1 Casskb8 SymKatG2 _c15386	A1	Casskb8	<i>Cassiopea xamachana</i>	Hawai'i	kb8_c15386
KatG	A1 CCMP2467 SymKatG2 Assembly2	A1	CCMP2467	<i>Stylophora pistillata</i>	Red Sea	gi 556242872 gb GAKY01157826.1 gi 556242873 gb GAKY01157825.1 gi 556374816 gb GAKY01042285.1 gi 556374818 gb GAKY01042284.1
KatG	B1 Mf1.05b SymKatG2 c_32035	B1	Mf1.05b	<i>Orbicella faveolata</i>	Florida Keys	mf105_c32035
KatG	D A.hyacinthus SymKatG2 GAFF01010883	D	N/A	<i>Acropora hyacinthus</i>	American Samoa	gi 452170702 gb GAFF01010883.1