The following supplement accompanies the article

Distribution of lipids and fatty acids in corals by their taxonomic position and presence of zooxanthellae

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Supplement 1. Collection sites and species of corals from Vietnam, their main fatty acid and lipid class compositions (% of total)

Table S1. Species names and collection sites of the corals (the South China Sea, Vietnam). Stn: 1: Dong Kho Island, 4-6 m, 21°58' N, 107°35' E, SCUBA; 2: Baht Long Vi Island, 4-6 m, 20°09' N, 107°43' E, SCUBA; 3: Baht Long Vi Island, 10-12 m, 20°08' N, 107°44' E, SCUBA; 4: Baht Long Vi Island, 4-6 m, 20°09' N, 107°43' E, SCUBA; 5: 83 m, 25°27' N, 109°08' E, drag; 6: Re Island, 3-4 m, 15°23' N, 109°06' E, SCUBA; 7: Re Island, 16 m, 15°23' N, 109°05' E, SCUBA; 8: Re Island, 12 m, 15°23' N, 109°05' E, SCUBA; 9: Ladd reef, 150-100 m, 8°41' N; 111°42 E, drag; 10: Ladd reef, 300-113 m, 8°42' N; 111°42' E, drag; 11: Ladd reef, 18 m, 8°39' N, 111°42' E, SCUBA; 12: Alexander bank, 250-90 m, 7°58' N, 110°36' E, drag

No.	Family	Genus	Species	Station
1	Acroporidae	*Acropora*	*A. cytherea*	1
2			*A. cytherea*	1
3			*A. acuminate*	1
4			*A. microphthalma*	1
5			*A. hacinthum*	1
6			*A. nobilis*	2
7			*A. grandis*	4
8			*A. samoensis*	4
9			*A. humilis*	4
10		*Astreopora*	*A. ocelata*	4
11	Agariciidae	*Pavona*	*P. frondifera*	1
12			*P. frondifera*	4
13[a]	Dendrophylliidae	*Balanophyllia*	*Balanophyllia sp.*	4
14[a]		*Tubastrea*	*T. aurea*	2
15		*Turbinaria*	*T. mesenterina*	1
16			*T. mesenterina*	1
17			*T. peltata*	1
18			*T. peltata*	1
19			*T. peltata*	1
20	Euphyllidae	*Euphyllia*	*E. ancora*	7
21			*E. ancora*	7
22	Faviidae	*Cyphastrea*	*C. chalcidicum*	4
23			*C. serailia*	4
24		*Goniastrea*	*G. chinensis*	1
25			*G. pectinata*	4

26		*Favia*	*F. lizardensis*	1
27			*F. maxima*	1
28			*F. maxima*	1
29			*F. maritima*	4
30			*F. favus*	1
31		*Favites*	*F. abdita*	4
32			*F. chinensis*	1
33			*F. flexuosa*	4
34	Fungiidae	*Fungia*	*F. scutaria*	8
35			*F. fungites*	8
36			*F. scutaria*	8
37			*F. scrupusa*	8
38		*Cycloseris*	*C. costulata*	8
39		*Litophyllon*	*L. undulatum*	1
40		*Podobacia*	*P. crustacean*	8
41		*Sandalolitha*	*S. robusta*	8
42	Pectinidae	*Echinophyllia*	*E. orphensis*	1
43			*E. ehinata*	1
44	Poritidae	*Goniopora*	*G. lobata*	1
45			*G. stokesi*	1
46		*Porites*	*P. lutea*	1
47			*P. lutea*	4
48			*P. solida*	4
49	Oculinidae	*Galaxea*	*G. fascicularis*	4
50	Milleporida	*Millepora*	*M. dichotoma*	6
51			*M. platyphylla*	6
52	Helioporidae	*Heliopora*	*H. coerulea*	6
53[b]	Clavulariidae	*Carijoa*	*C. riisei*	11
54[b]			*C. riisei*	11
55[b]	Alcyoniidae	*Klyxum*	*K. molle*	2
56		*Cladiella*	*C. laciniosa*	2
57			*C. subtilis*	1
58			*C. pachyclados*	2
59		*Lobophytum*	*L. michaelae*	6
60			*L. ransoni*	11
61			*L. batarum*	6
62			*L. crassum*	6
63			*Lobophytum* sp.	6
64		*Sarcophyton*	*S. crassum*	6
65			*S. ehrenbergi*	6
66			*S.* cf. *glaucum*	6
67			*S. regulare*	6
68			*S. cinereum*	6
69			*S. spongiosum*	11
70			*Sarcophyton* sp.	11
71		*Sinularia*	*S.* cf. *robusta*	2
72			*S.* aff. *exilis*	2
73			*S. brassica*	2
74			*S. brassica*	2
75			*S. erecta*	3
76			*S.* aff. *polydactila*	3
77			*S. siaesensis*	3
78			*S. siaesensis*	3
79			*S. gibberosa*	6

80			*Sinularia* sp.	6
81			*S. polydactila*	6
82			*S. flexibilis*	6
83[a]	Nephtheidae	*Dendronephthya*	*D.* cf. *cervicornis*	11
84[a]			*Dendronephthya* sp.	11
85[a]			*D.* cf. *pulchella*	11
86		*Lemnalia*	*L.* cf. *exilis*	11
87			*L.* cf. *peristyla*	11
88		*Nephthea*	*N. capnelliformis*	6
89			*Nephthea* sp.	11
90			*Nephthea* sp.	11
91[a]	Nidaliidae	*Siphonogorgia*	*S. variabilis*	1
92[a]			*S.* cf. *harrisoni*	11
93[a]			*S.* cf. *harrisoni*	11
94[a]	Subergorgiidae	*Annella*	*A. mollis*	11
95[a]			*A. mollis*	11
96[a]	Melithaeidae	*Mopsella*	*Mopsella* sp.	1
97[a]			*M.* cf. *spinosa*	1
98[a]	Parisididae	*Parisis*	*P.* cf. *minor*	5
99[a]	Plexauridae	*Menella*	*M.* cf. *praelonga*	1
100[a]			*M.* cf. *praelonga*	1
101[a]			*M. flora*	1
102[a]		*Echinogorgia*	*E.* cf. *gracillima*	1
103[a]		*Paracis*	*P.* cf. *horrida*	12
104	Gorgoniidae	*Hicksonella*	*H. princeps*	6
105			*H. princeps*	6
106[a]	Ellisellidae	*Viminella*	*V.* cf. *petila*	1
107[a]			*V.* cf. *crassa*	1
108[b]	Primnoidae	*Narella*	*Narella* sp.	10
109[b]	Plexauridae spp. 1			9
110[b]	Plexauridae spp. 2			9

[a]Azooxanthellate species; [b]no data on zooxanthellae

Table S2. Lipid class composition (% of total lipids) of corals (the South China Sea, Vietnam). Data are means of triplicate analyses. For all data, SD values were less than 10% of the means. PL: polar lipids, ST: sterols, FFA: free fatty acids, TG: triacylglycerols, MADAG: monoalkyldiacylglycerols, WE: wax esters, SE: sterol esters. Species names are numbered as in Table S1

Lipid class	Species																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PL	16.1	24.1	14.4	18.5	22.6	16.9	11.9	23.7	12.9	12.5	25.3	17.4	25.4	32.2	15.3	11.6	12.5	10.2	12.1	11.1
ST	5.7	7.6	3.8	5.5	7.9	4.4	4.6	10.0	4.8	5.0	5.8	5.2	12.7	10.6	7.4	6.8	5.9	3.9	3.9	3.7
FFA	1.6	1.1	2.5	2.9	1.5	1.2	1.3	1.2	0.9	0.9	1.1	1.1	1.9	1.7	2.0	1.1	1.3	1.2	0.6	0.5
TG	31.8	19.1	30.4	28.0	23.7	21.5	31.4	28.6	33.2	32.9	26.3	31.5	10.4	9.0	15.2	22.2	29.1	30.8	29.8	43.1
MADAG	3.6	1.9	2.6	0.9	12.5	2.8	8.8	1.0	3.2	6.2	4.8	6.9	5.4	3.1	4.3	5.9	6.5	3.0	8.1	8.4
WE	38.9	42.8	44.3	42.2	30.1	45.6	40.4	33.9	43.9	41.1	35.7	36.4	42.2	40.3	53.6	51.3	43.0	49.4	44.6	32.4
Others	2.3	3.4	2.0	2.0	1.7	7.6	1.6	1.6	1.1	1.4	1.0	1.5	2.0	3.1	2.2	1.1	1.7	1.5	0.9	0.8

Lipid class	Species																			
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PL	19.5	24.2	4.0	10.4	16.0	7.6	8.8	11.8	17.5	10.1	17.6	4.9	12.1	27.2	15.8	15.4	14.8	12.8	20.3	18.8
ST	5.4	5.0	3.9	2.2	5.5	3.2	5.7	5.2	6.1	10.6	6.5	4.4	5.9	5.3	4.0	4.2	5.7	3.3	5.4	4.5
FFA	0.9	1.5	1.2	0.8	0.5	1.5	1.2	0.7	0.6	1.5	0.6	3.0	0.8	0.8	0.4	0.5	0.6	0.3	0.9	0.5
TG	38.4	8.8	27.2	27.4	25.7	25.3	26.1	13.8	16.6	32.4	13.8	20.0	20.8	7.8	17.8	25.8	19.1	16.9	20.1	16.7
MADAG	6.2	1.2	7.1	3.1	4.2	4.2	2.6	1.4	3.4	14.5	1.6	1.7	2.7	0.4	2.8	5.1	3.8	4.1	4.7	2.4
WE	29.6	57.5	55.6	55.8	46.8	56.4	54.4	66.4	54.9	29.0	58.7	62.8	56.6	58.1	58.8	48.5	55.5	62.4	47.5	57.1
Others	0.0	1.8	1.0	0.3	1.3	1.8	1.2	0.7	0.9	1.9	1.2	3.2	1.1	0.4	0.4	0.5	0.5	0.2	1.1	0.0

Lipid class	Species																			
	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
PL	18.4	7.4	19.8	18.4	10.5	14.9	19.3	15.7	23.9	19.2	15.1	18.3	32.8	37.7	27.7	19.9	31.4	43.7	20.3	33.6
ST	5.1	4.4	5.3	6.0	4.3	5.6	7.9	7.5	7.6	5.6	5.4	5.7	6.1	7.8	5.5	5.4	9.0	9.8	14.7	8.1
FFA	0.7	1.4	0.8	0.8	0.9	0.6	1.6	0.8	0.5	0.7	0.9	0.8	1.6	1.8	1.6	1.5	1.6	2.3	1.5	1.5
TG	15.1	21.1	8.2	10.0	20.7	39.1	18.1	39.7	25.7	22.8	22.0	20.1	12.8	17.8	4.9	3.5	8.6	3.7	6.6	10.0
MADAG	2.1	2.4	2.7	6.7	5.5	9.3	6.3	9.1	3.1	17.4	18.6	20.1	12.1	19.6	14.1	12.5	20.7	15.6	25.3	20.8
WE	58.5	61.9	62.4	57.6	57.2	29.3	44.6	26.4	35.9	26.7	37.1	33.9	32.6	13.1	44.4	55.5	26.9	22.5	30.1	24.4
Others	0.1	1.4	0.8	0.5	0.9	1.2	2.2	0.8	3.3	7.6	0.9	1.1	2.0	2.2	1.8	1.7	1.8	2.4	1.5	1.6

Table S2 (continued)

Lipid class	Species																			
	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
PL	24.3	35.1	13.7	22.4	36.5	16.0	34.9	40.0	22.4	18.6	33.2	24.4	32.6	34.6	30.0	37.4	18.9	21.4	25.5	30.0
ST	5.6	11.9	12.8	5.9	8.3	3.9	9.0	9.1	7.0	4.1	4.9	4.9	6.9	6.9	10.6	9.6	6.4	2.7	5.0	6.7
FFA	0.8	1.9	1.8	0.7	2.1	0.5	1.5	1.5	1.4	0.8	2.0	1.5	1.4	1.7	1.5	1.5	1.2	0.4	1.3	2.1
TG	7.4	2.4	10.2	9.6	3.5	9.5	11.3	5.0	9.7	7.8	4.6	6.0	4.8	5.3	9.7	9.1	5.3	3.7	7.9	11.1
MADAG	16.0	14.4	20.5	24.8	13.3	21.5	14.6	15.6	12.6	19.5	18.8	25.2	17.1	14.2	19.9	16.7	30.7	18.0	32.7	19.3
WE	38.0	32.7	39.9	35.8	34.1	48.1	27.3	26.9	35.4	48.1	33.6	36.0	35.7	35.7	25.9	23.3	35.8	51.9	25.5	28.7
Others	7.9	1.6	1.1	0.8	2.2	0.5	1.4	1.9	11.5	1.1	2.9	2.0	1.5	1.6	2.4	2.4	1.7	1.9	2.1	2.1

Lipid class	Species																			
	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
PL	45.9	50.7	45.9	31.7	29.2	19.7	28.7	43.3	43.0	40.3	42.9	30.1	35.6	41.9	44.0	30.0	40.2	36.4	42.2	47.5
ST	18.0	20.3	17.6	5.8	6.3	6.1	8.8	13.4	7.1	20.8	17.0	11.2	11.1	14.7	13.9	9.2	12.3	7.3	14.3	14.2
FFA	1.4	1.1	1.3	1.7	1.2	1.4	1.7	1.6	2.3	1.4	2.0	1.5	1.0	2.1	2.5	1.7	1.9	1.5	1.4	3.0
TG	8.6	4.2	8.9	9.7	10.4	21.4	14.6	21.2	8.6	3.4	4.4	21.4	18.7	5.5	14.1	13.9	6.0	6.5	5.7	8.5
MADAG	4.1	3.4	6.4	17.5	14.6	11.0	14.2	13.0	7.5	6.7	7.5	16.8	17.0	5.4	7.0	20.0	11.1	9.5	10.7	9.9
WE	20.6	19.2	18.5	31.7	36.8	38.9	30.1	7.0	27.2	25.0	26.0	17.5	15.5	23.5	15.8	23.5	26.0	33.7	24.3	13.7
Others	1.4	1.1	1.4	1.9	1.5	1.5	1.9	0.5	4.3	2.4	0.2	1.5	1.1	6.9	2.7	1.7	2.5	5.1	1.4	3.2

Lipid class	Species									
	101	102	103	104	105	106	107	108	109	110
PL	27.1	31.6	18.6	19.3	27.1	53.7	15.8	41.1	58.8	25.6
ST	9.7	9.7	5.9	5.1	10.3	11.9	5.9	14.0	8.6	10.6
FFA	1.5	1.1	0.6	1.0	1.5	1.6	2.0	1.1	1.4	2.4
TG	7.1	9.7	13.4	11.0	12.3	7.4	5.8	13.2	11.2	1.9
MADAG	8.0	34.6	51.9	14.1	13.9	5.4	18.0	9.8	5.7	7.5
WE	46.6	12.1	9.3	48.5	33.3	19.0	50.3	18.8	12.9	49.6
Others	0.0	1.2	0.3	1.0	1.6	1.0	2.2	2.0	1.4	2.4

Table S3. Composition of main fatty acids (% of total) of total lipids of hexacorals (the South China Sea, Vietnam). Species names are numbered as in Table S1

Fatty acid	Species																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
14:0	6.0	4.9	6.0	5.7	4.3	6.7	3.7	4.8	5.6	1.9	3.0	3.1	0.7	1.5	2.1	1.7	3.2	2.3	4.3	3.0
16:0	31.5	28.6	33.4	30.2	21.8	29.8	22.3	26.9	29.8	43.7	28.5	36.7	9.5	12.4	28.4	28.0	21.2	31.5	30.9	39.1
16:1n-7	3.7	2.8	3.4	3.0	2.1	3.9	1.8	3.4	3.5	1.7	3.1	2.8	3.2	3.3	1.9	2.7	3.2	2.2	2.5	4.2
7-Me-16:1n-10	0.1	0.1	0.1	0.1	0.1	0.1	0.1	–	0.1	–	0.1	–	1.8	2.3	0.6	0.6	0.5	0.3	0.2	–
18:0	3.8	6.4	4.4	5.8	7.4	4.7	6.1	3.5	3.0	5.7	6.2	6.6	6.1	8.2	8.2	7.1	5.7	7.0	6.4	4.8
18:1n-9	7.0	5.8	9.7	7.9	4.2	7.4	6.8	9.5	9.1	4.2	4.9	4.3	20.5	12.8	5.2	7.0	10.4	8.6	7.8	6.3
18:1n-7	0.3	0.3	0.4	0.4	0.3	0.5	0.2	0.5	0.4	1.2	1.1	1.0	3.4	2.7	0.7	1.0	1.9	1.3	1.4	1.0
18:2n-6	1.5	1.8	2.1	1.8	1.4	1.7	2.6	2.0	2.5	1.7	2.6	1.5	1.5	1.5	1.0	1.8	1.7	0.8	1.4	2.3
18:3n-6	10.9	9.7	10.8	9.7	8.0	9.4	12.5	12.4	15.0	9.3	11.9	10.5	0.9	0.8	7.1	10.2	5.6	4.6	5.3	6.2
18:4n-3	4.1	3.0	2.2	3.2	5.7	3.1	2.9	2.6	2.3	2.1	3.2	2.9	0.6	0.7	3.5	3.1	1.6	1.4	1.0	1.4
20:0	0.6	0.7	0.6	0.6	1.1	0.6	0.7	0.5	0.5	0.7	0.4	0.6	0.6	0.7	1.1	0.8	0.9	0.9	1.1	0.4
20:1n-9	3.3	2.9	3.4	3.8	3.3	3.2	3.8	4.0	3.5	0.3	0.2	0.1	1.9	1.7	3.2	3.9	6.3	4.6	3.8	0.2
20:1n-7	–	–	–	0.1	–	0.1	–	0.1	–	0.1	–	–	0.6	0.4	0.2	0.2	0.5	0.2	0.3	–
20:2n-6	0.4	1.0	0.5	0.8	0.7	0.5	0.7	0.5	0.5	0.4	0.2	0.2	0.9	0.8	0.6	0.5	0.4	1.1	0.3	1.0
20:3n-6	1.4	1.2	1.9	1.5	1.1	1.3	1.4	1.6	1.4	2.4	1.5	1.8	1.1	1.0	2.2	2.9	3.4	3.0	4.5	4.4
20:4n-6	4.1	6.8	2.8	4.2	9.9	3.2	7.3	2.6	2.5	5.6	10.0	6.8	10.9	11.7	11.1	9.8	7.9	4.8	6.3	10.1
20:4n-3	0.2	0.2	0.4	0.3	0.2	0.4	0.3	0.4	0.4	0.5	0.1	0.2	0.5	0.4	0.4	0.7	1.0	1.0	1.3	0.4
20:5n-3	3.7	3.1	2.9	3.5	6.2	5.6	5.7	4.1	4.0	1.2	2.6	1.3	7.3	7.1	3.1	2.1	1.8	1.8	1.3	2.4
22:0	0.1	0.7	–	0.1	0.3	0.1	0.2	0.1	0.1	0.1	0.2	0.4	–	–	0.3	0.1	0.1	–	0.1	0.2
22:1n-9	0.1	–	–	0.1	0.2	0.1	0.1	0.1	0.1	–	–	–	1.2	0.6	0.8	0.7	1.1	0.7	0.5	–
22:4n-6	1.8	3.4	1.8	2.5	5.2	2.0	3.8	1.7	1.3	3.1	3.9	2.7	6.7	8.4	4.9	3.6	2.9	1.5	1.8	1.8
22:5n-6	–	–	–	–	–	–	–	3.0	–	–	–	–	–	–	–	–	–	–	–	–
22:4n-3	–	–	–	–	–	–	–	0.6	–	–	–	–	–	–	0.1	0.2	0.2	–	0.3	–
22:5n-3	1.8	1.9	1.9	1.7	2.8	2.9	3.4	1.7	2.4	8.1	4.9	4.3	13.0	11.8	1.1	1.2	2.7	2.4	2.2	0.4
22:6n-3	7.6	7.0	7.1	5.9	6.4	6.4	9.1	9.3	8.7	3.6	7.9	6.4	1.7	1.2	5.9	6.2	10.0	12.9	9.7	9.6
Other[a]	6.0	7.7	4.2	7.1	7.3	6.1	4.5	7.1	3.3	2.4	3.5	5.8	5.4	8.0	6.3	3.9	5.8	5.1	5.3	0.8

Table S3 (continued)

Fatty acid	Species																			
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
14:0	2.4	5.0	2.6	5.4	3.3	2.0	3.6	2.9	4.4	3.0	3.2	4.7	2.7	1.7	2.7	3.2	2.9	3.2	2.8	2.2
16:0	37.5	32.6	27.5	55.2	32.8	34.7	25.6	37.1	25.8	35.7	21.2	31.8	18.4	34.1	60.6	51.0	40.9	49.3	27.2	31.3
16:1n-7	3.2	3.3	3.4	2.9	3.0	2.0	3.9	2.9	5.7	3.2	3.2	5.5	4.7	2.0	1.3	1.6	2.3	–	3.4	2.0
7-Me-16:1n-10	0.1	0.2	0.1	0.1	0.3	0.2	0.3	–	0.4	0.2	0.5	0.3	0.3	0.3	–	–	0.1	–	0.3	0.3
18:0	6.8	4.1	4.4	9.4	6.7	6.3	5.3	6.4	3.8	4.2	5.7	5.2	3.6	8.9	8.6	9.5	7.5	9.1	5.8	7.7
18:1n-9	5.7	5.1	6.8	3.9	7.9	6.6	6.2	4.8	6.3	7.5	10.4	7.9	8.8	5.3	3.4	3.3	4.9	4.3	8.6	8.3
18:1n-7	1.0	1.0	1.4	1.7	1.9	1.8	2.2	2.1	2.2	2.0	1.9	3.0	2.7	0.9	0.5	0.7	0.8	0.6	2.0	0.8
18:2n-6	2.1	3.8	2.7	1.3	2.3	1.4	2.1	1.2	2.2	1.9	1.7	2.2	2.8	1.5	1.1	1.0	2.2	1.2	3.6	2.2
18:3n-6	6.4	9.4	11.3	3.8	9.6	6.5	6.4	6.5	8.4	6.6	5.6	6.5	11.3	5.5	5.6	6.3	8.1	8.1	9.8	12.6
18:4n-3	1.8	2.2	2.6	0.4	1.3	2.4	3.3	2.8	2.3	2.1	1.6	1.7	2.7	1.5	0.6	0.8	1.3	0.5	1.7	1.5
20:0	0.6	2.3	0.7	0.5	0.5	0.7	0.6	0.8	0.5	0.5	0.9	0.4	0.5	1.1	0.9	0.9	0.8	1.0	0.6	1.1
20:1n-9	0.3	0.6	1.0	0.8	1.8	1.8	2.0	1.0	0.8	1.4	6.3	1.4	1.4	0.5	0.3	0.3	0.4	0.4	1.0	0.8
20:1n-7	–	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.5	0.3	0.2	–	–	–	–	–	0.2	–
20:2n-6	0.9	1.2	0.7	0.5	0.4	0.5	0.7	0.3	0.4	0.6	0.4	0.6	0.6	0.5	0.2	0.2	0.4	0.2	0.8	0.3
20:3n-6	3.3	1.9	3.3	1.3	2.6	3.1	3.0	2.3	2.1	2.5	3.4	1.2	3.2	1.8	1.7	2.2	3.0	3.2	3.6	3.1
20:4n-6	12.3	8.0	8.0	2.9	5.9	4.8	6.2	5.5	7.4	4.1	7.9	5.3	9.1	10.1	2.6	4.0	5.3	4.0	5.8	7.6
20:4n-3	0.3	0.2	0.5	0.1	0.3	0.5	0.6	0.5	0.3	0.4	1.0	0.2	0.6	0.1	0.1	0.2	0.2	0.1	0.5	0.2
20:5n-3	2.5	2.1	2.1	0.6	1.5	1.7	5.2	2.0	3.9	3.0	1.8	3.8	2.1	2.2	1.1	1.7	2.1	1.3	1.0	2.3
22:0	0.3	0.4	0.1	0.1	0.1	0.2	0.2	0.2	0.1	–	0.1	–	0.1	0.3	0.3	0.3	0.3	0.4	–	0.3
22:1n-9	–	0.3	0.2	0.1	0.5	0.3	0.3	0.1	0.1	0.3	1.1	–	0.3	0.1	–	–	–	0.1	0.2	–
22:4n-6	3.4	3.8	1.8	1.0	1.9	1.5	1.5	2.4	2.9	1.4	2.9	1.4	3.2	5.3	1.3	2.0	2.8	2.2	2.7	3.7
22:5n-6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
22:4n-3	–	–	–	–	–	–	–	0.1	0.1	–	0.2	–	–	–	–	–	–	–	–	–
22:5n-3	0.4	2.6	1.1	0.5	2.2	0.5	0.3	0.9	3.0	0.7	2.7	3.5	7.4	4.3	1.5	2.1	2.5	1.9	9.4	1.3
22:6n-3	7.6	5.5	14.1	4.2	10.4	16.5	17.2	11.6	10.1	14.2	10.0	6.2	9.7	6.3	4.6	7.4	9.3	6.1	3.6	8.2
Other[a]	1.1	4.3	3.4	3.1	2.6	3.8	3.0	5.4	6.5	4.3	5.8	6.9	3.6	5.7	1.0	1.3	1.9	2.8	5.4	2.2

Table S3 (continued)

Fatty acid	Species										
	41	42	43	44	45	46	47	48	49	50	51
14:0	2.1	3.4	3.6	2.8	5.4	2.1	1.5	1.0	3.6	2.3	3.1
16:0	28.7	29.2	41.0	16.0	37.0	25.7	17.3	26.2	24.2	19.8	23.6
16:1n-7	3.5	5.2	2.5	2.2	2.8	2.4	1.0	0.9	10.6	–	0.1
7-Me-16:1n-10	0.2	0.1	0.2	0.5	0.4	0.2	–	0.1	0.2	0.4	0.5
18:0	6.6	3.9	7.2	5.7	8.6	5.2	4.7	5.5	4.9	15.3	15.4
18:1n-9	6.5	12.3	4.3	5.4	4.5	16.9	21.5	21.0	4.4	3.9	6.1
18:1n-7	1.2	1.2	1.2	2.9	5.3	1.0	0.5	0.5	1.9	–	0.3
18:2n-6	1.5	3.2	3.0	1.9	1.1	1.1	1.2	0.7	3.0	0.1	0.5
18:3n-6	13.5	9.7	6.8	5.6	3.7	3.3	2.3	2.2	11.0	–	0.2
18:4n-3	1.0	2.0	1.8	2.0	0.6	2.0	3.8	2.2	2.2	1.9	1.5
20:0	0.8	0.4	0.6	0.9	0.6	0.3	0.3	0.2	0.6	5.5	3.3
20:1n-9	0.5	1.0	0.4	4.3	2.5	4.0	4.6	1.6	0.1	0.4	0.2
20:1n-7	–	0.1	0.1	1.0	1.2	0.1	–	–	0.2	–	–
20:2n-6	0.4	0.6	0.3	1.4	1.0	0.8	1.4	0.9	0.6	0.1	0.3
20:3n-6	4.0	3.2	2.1	5.8	2.7	0.8	0.4	0.9	3.6	0.3	0.3
20:4n-6	7.1	6.8	5.9	11.2	6.6	6.1	7.8	7.4	9.4	–	0.7
20:4n-3	0.2	0.4	0.3	1.6	0.3	0.2	0.2	0.4	0.2	–	–
20:5n-3	2.4	1.7	1.2	2.9	0.9	4.4	2.9	2.6	2.0	0.8	0.4
22:0	0.2	–	0.1	0.3	0.1	0.1	–	0.2	0.1	0.5	0.2
22:1n-9	0.1	0.1	0.1	1.3	0.6	0.5	0.5	0.3	–	0.3	0.2
22:4n-6	3.5	1.0	2.8	2.2	1.6	2.9	5.8	4.8	5.5	3.5	2.6
22:5n-6	–	–	–	–	–	–	–	–	–	7.3	6.8
22:4n-3	–	–	–	0.1	–	–	–	–	1.4	–	–
22:5n-3	2.1	1.5	9.4	0.5	0.2	1.4	6.1	2.6	0.1	1.1	0.4
22:6n-3	10.9	8.3	2.7	14.8	8.3	14.7	11.3	14.7	6.2	33.3	32.0
Other[a]	3.0	4.7	2.4	6.6	4.0	3.8	4.9	3.1	4.0	3.2	1.3

[a] 12:0, 14:1, i-15:0, ai-15:0, 15:0, 15:1, i-16:0, ai-16:0, 16:1□-9, 16:1n-5, i-17:0, 16:2n-7, 17:0, 16:3n-4, i-18:0, 18:2, 18:2n-7, 19:0, 18:3n-4, 20:2n-7, 22:2NMI, 22:3n-6, 22:1n-7

Table S4. Composition of main fatty acids (% of total) of total lipids of octocorals (the South China Sea, Vietnam). Species names are numbered as in Table S1

Fatty acid	Species																			
	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
14:0	4.9	1.9	2.7	4.3	7.4	7.3	5.7	2.3	1.2	4.3	1.8	–	1.5	1.8	2.5	1.7	3.4	2.1	1.9	2.7
16:0	45.5	7.4	20.4	13.6	34.6	27.8	17.5	30.0	24.8	25.0	36.8	29.6	30.2	41.6	21.3	35.4	22.9	25.2	28.4	23.1
16:1n-7	2.3	0.7	0.6	5.2	4.0	3.4	4.1	2.0	1.4	4.9	2.1	2.8	2.7	2.4	3.9	2.6	4.5	2.2	1.8	2.8
16:2n-7	0.2	0.3	–	0.4	0.3	0.3	0.3	4.9	4.2	0.6	6.5	13.4	6.3	9.3	16.4	5.9	14.0	8.0	6.1	9.4
7-Me-16:1n-10	0.1	0.3	0.3	0.4	0.2	0.3	0.2	1.8	1.3	4.9	0.9	2.3	0.8	1.4	0.8	1.3	1.7	1.5	2.1	0.4
16:4	–	0.2	0.2	0.4	0.2	0.8	0.4	0.6	0.3	–	0.5	0.3	0.1	0.5	0.9	0.1	–	0.2	0.2	0.8
18:0	6.6	4.7	24.6	6.0	8.3	7.8	12.0	6.3	5.9	7.6	6.7	3.8	8.0	4.4	1.0	5.3	6.0	5.2	7.1	3.9
18:1n-9	2.4	4.9	8.2	5.0	4.9	4.7	2.6	1.6	1.8	3.8	2.7	2.4	3.4	2.5	1.4	2.8	8.5	1.6	1.9	1.9
18:1n-7	0.8	–	0.2	0.3	0.4	0.2	0.2	0.5	0.2	2.4	0.2	0.2	0.4	0.1	–	0.2	2.4	0.1	0.2	0.2
18:2	–	0.7	0.7	0.8	0.7	0.8	0.4	0.3	0.7	–	0.8	1.1	0.9	1.0	0.8	0.5	1.0	0.8	0.4	0.5
18:2n-7	–	0.2	–	–	–	–	0.1	3.7	1.4	–	0.9	2.0	2.4	1.0	1.1	0.7	1.0	1.6	1.3	1.0
18:2n-6	3.2	1.8	1.6	1.7	2.6	1.4	1.5	–	0.2	1.2	0.1	0.3	0.2	–	–	0.2	0.3	0.2	0.1	0.4
18:3n-6	1.0	9.4	4.8	10.6	9.4	0.1	0.2	0.1	–	0.1	–	0.3	–	0.4	0.2	0.7	0.5	0.2	0.2	2.9
18:4n-3	2.7	10.6	4.6	8.7	3.7	4.5	8.3	1.9	3.7	0.4	3.7	4.6	2.8	3.5	6.4	4.5	4.4	4.5	4.0	4.1
20:0	0.5	0.2	2.7	0.1	0.1	0.2	0.1	0.5	0.7	0.7	1.2	0.2	1.1	0.4	0.2	0.7	0.3	0.5	0.6	0.6
20:1n-9	0.6	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	–	–	–	0.2	1.9	–	–	0.2
20:3n-6	0.3	0.9	0.9	0.3	0.3	0.2	0.3	0.1	0.2	0.2	0.3	0.2	0.7	–	0.2	0.3	–	0.2	0.2	0.6
20:4n-6	0.6	17.7	7.4	19.7	9.4	10.6	18.4	22.2	24.1	21.6	13.5	16.1	19.6	11.5	19.6	18.0	11.1	25.2	22.9	16.8
20:4n-3	0.2	1.3	0.7	0.3	0.1	0.2	0.2	0.6	0.7	0.2	0.5	0.9	0.8	0.5	0.6	0.5	0.2	0.3	0.4	0.7
20:5n-3	10.2	11.4	5.8	4.8	2.1	3.6	4.3	1.0	3.4	2.2	1.3	1.9	0.9	1.0	1.7	1.2	1.4	2.4	2.1	3.4
22:0	0.1	–	1.0	–	–	0.1	0.1	0.3	–	0.1	0.4	0.1	0.5	0.2	–	0.3	–	0.2	0.2	0.4
22:4n-6	–	0.7	0.2	0.1	–	–	0.1	0.4	–	0.4	0.1	–	0.2	0.1	–	0.4	0.2	0.2	0.3	0.4
22:5n-6	0.9	–	0.0	0.1	0.1	–	0.1	–	–	0.4	–	0.2	0.1	0.4	0.4	0.2	0.5	0.1	0.2	0.2
22:4n-3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
22:5n-3	1.8	–	0.1	–	–	–	0.1	–	–	0.1	–	–	–	–	–	–	0.3	–	–	–
22:6n-3	9.9	7.3	3.2	6.9	5.2	5.3	5.9	1.5	2.9	1.3	2.2	2.6	1.8	1.7	4.1	2.2	2.1	3.0	2.6	6.4
24:5n-6	2.0	8.9	4.0	5.5	2.2	3.5	3.4	5.5	7.6	2.3	4.0	4.7	6.9	3.2	5.5	7.0	2.1	6.8	7.9	5.1
24:6n-3	–	2.1	0.8	1.2	0.9	2.1	0.5	1.4	2.1	0.4	0.8	1.2	0.8	1.2	0.6	0.7	0.6	1.0	0.9	1.8
Other[a]	3.2	6.2	4.0	3.4	2.7	2.6	3.7	10.4	11.0	14.7	11.8	8.7	6.9	9.9	10.4	6.4	8.7	6.7	6.0	9.3

Table S4 (continued)

Fatty acid	Species																		
	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91
14:0	3.9	5.8	5.7	2.0	1.6	3.5	4.7	1.4	2.6	1.4	1.4	1.3	1.0	1.7	1.5	2.4	2.2	2.1	1.3	1.7
16:0	25.4	19.0	24.1	23.0	23.8	17.3	22.2	29.8	46.7	30.1	44.7	11.2	10.0	12.7	20.3	18.1	16.2	11.1	13.6	11.5
16:1n-7	4.6	3.8	4.2	1.9	1.4	4.1	3.9	2.8	–	1.7	3.5	1.3	0.9	1.5	0.9	0.6	0.4	0.5	0.3	1.8
16:2n-7	0.9	0.4	0.3	6.0	9.1	2.2	1.5	9.3	5.6	5.7	6.5	1.1	0.6	1.6	–	–	0.2	1.2	–	0.3
7-Me-16:1n-10	–	0.3	0.3	0.8	0.5	–	0.1	0.2	–	0.2	0.5	5.9	3.8	5.0	0.2	0.3	0.8	10.8	1.9	3.8
16:4	0.8	1.7	1.2	1.8	2.3	1.4	0.9	0.6	0.2	0.4	0.3	0.9	0.9	1.7	0.2	0.2	0.3	0.5	0.2	11.8
18:0	6.4	3.3	3.5	6.5	4.8	5.8	5.3	10.3	6.7	11.0	7.1	7.7	5.7	6.4	15.8	15.5	7.7	9.3	9.1	5.5
18:1n-9	2.4	2.8	4.0	1.4	0.7	2.1	2.8	3.6	1.5	2.9	2.5	3.9	3.0	3.3	4.1	4.2	33.3	26.8	32.1	3.0
18:1n-7	0.9	0.3	0.4	0.1	–	0.6	0.4	0.9	0.1	0.5	0.3	1.8	1.1	1.6	0.1	0.1	0.2	0.3	0.3	1.9
18:2	0.7	0.6	0.7	0.4	0.3	0.6	1.0	1.2	0.4	0.7	0.7	–	–	–	0.3	0.4	–	0.3	0.1	–
18:2n-7	0.6	–	0.1	2.3	1.4	1.3	0.6	6.5	1.3	5.0	3.2	0.5	–	–	–	–	–	0.6	–	–
18:2n-6	1.5	1.8	1.8	0.8	–	0.9	1.0	–	0.4	0.6	–	1.4	0.8	1.1	2.4	1.3	–	2.6	–	0.8
18:3n-6	14.1	8.4	9.2	2.4	–	10.0	11.7	–	–	0.5	–	0.3	–	–	7.9	4.4	–	0.3	–	0.9
18:4n-3	2.8	3.3	2.1	2.3	3.2	2.6	3.0	2.7	2.1	2.6	2.7	0.6	0.4	0.8	2.6	5.2	1.0	1.0	0.6	–
20:0	0.6	0.5	0.9	1.0	0.7	0.5	0.4	0.7	2.7	1.2	0.6	1.0	0.5	0.4	3.2	1.4	0.7	1.2	1.0	0.8
20:1n-9	0.1	0.2	–	0.1	–	0.1	0.1	–	0.2	0.2	–	0.4	–	–	0.2	0.2	0.8	1.0	1.4	1.7
20:3n-6	0.9	1.1	1.3	1.0	0.5	0.8	0.7	0.7	0.7	1.1	0.4	0.6	0.4	–	1.3	0.7	–	–	0.1	0.7
20:4n-6	12.7	17.4	13.0	22.7	23.6	22.5	15.4	11.8	10.8	13.6	9.0	23.4	34.7	28.3	18.0	2.4	12.5	11.4	15.2	30.5
20:4n-3	1.1	0.4	0.5	1.2	0.7	0.8	0.6	1.6	0.9	1.1	1.2	0.3	0.6	0.5	0.7	1.1	–	0.1	0.2	–
20:5n-3	3.3	3.9	3.1	3.2	3.6	3.5	6.2	0.8	0.6	1.0	0.8	2.5	3.4	3.7	5.9	27.2	4.4	1.5	3.9	1.8
22:0	0.5	0.3	0.4	0.5	0.4	0.3	0.4	0.4	2.2	1.3	0.4	0.4	–	–	0.8	0.5	–	0.2	0.2	–
22:4n-6	0.3	–	–	0.4	0.6	0.6	0.3	0.4	0.3	0.5	–	0.8	1.5	1.1	0.4	0.4	0.3	–	0.1	–
22:5n-6	–	–	0.2	–	–	–	0.1	–	–	0.4	–	1.8	1.2	1.1	0.2	–	–	–	0.2	0.7
22:4n-3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
22:5n-3	–	–	–	–	–	–	0.2	–	0.2	0.3	–	–	–	–	–	0.3	–	–	0.2	0.8
22:6n-3	7.9	8.2	11.8	3.0	3.7	4.7	5.5	1.6	1.3	1.7	2.0	3.7	2.5	2.5	3.2	4.6	9.1	5.2	7.4	1.4
24:5n-6	4.1	5.9	4.2	5.6	7.4	6.8	4.1	4.2	3.7	5.2	3.5	16.5	13.0	11.8	4.8	3.1	4.8	4.1	6.9	10.4
24:6n-3	2.0	3.0	2.8	2.0	2.2	2.5	3.1	1.1	0.7	1.0	1.1	2.8	4.1	2.4	1.6	2.4	1.0	0.6	1.4	1.5
Other[a]	1.5	7.6	4.2	7.6	7.5	4.5	3.8	7.4	8.1	8.1	7.6	7.9	9.9	10.8	3.4	3.0	4.1	7.3	2.3	6.7

Table S4 (continued)

Fatty acid	Species																		
	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110
14:0	2.2	2.2	2.2	1.9	1.6	1.6	1.4	1.6	1.2	2.2	1.9	1.1	2.5	1.9	1.3	1.6	1.9	1.3	1.4
16:0	21.3	14.5	13.2	11.8	11.0	9.8	13.2	9.8	8.3	12.3	10.7	7.8	29.8	35.8	6.1	8.1	14.6	9.6	9.5
16:1n-7	3.0	2.1	1.8	1.7	1.3	1.7	1.7	1.3	1.9	2.2	1.9	2.1	3.1	2.5	2.1	2.1	1.9	1.9	1.3
16:2n-7	–	–	0.3	0.4	0.8	0.6	0.5	0.6	1.0	0.4	0.4	–	0.3	0.1	0.2	0.2	–	0.3	0.8
7-Me-16:1n-10	9.5	6.1	5.5	5.6	0.9	1.2	2.4	1.6	2.0	1.9	2.1	3.6	1.7	1.6	2.2	2.0	1.2	2.5	1.8
16:4	–	–	0.2	0.2	3.6	0.8	2.1	1.5	1.7	1.8	1.6	–	0.3	0.2	1.0	0.6	–	0.3	0.6
18:0	10.0	8.5	6.8	5.6	7.8	6.6	9.0	3.9	3.9	4.8	5.3	4.4	4.6	5.8	5.5	5.8	5.9	5.3	5.7
18:1n-9	5.3	4.2	2.6	2.5	2.9	2.8	3.6	3.1	3.3	2.9	2.4	5.3	3.5	4.2	3.5	3.7	6.4	3.8	3.4
18:1n-7	1.6	2.3	2.1	2.1	1.0	1.4	2.2	1.2	2.5	2.0	1.5	3.2	0.2	0.1	3.1	2.7	1.6	1.6	1.4
18:2	–	–	–	–	0.1	–	–	–	0.1	–	–	–	–	–	–	0.2	–	–	–
18:2n-7	1.6	1.4	–	–	–	0.3	–	–	–	–	–	1.0	0.1	–	–	0.1	–	–	–
18:2n-6	–	–	1.0	0.9	0.7	1.0	0.8	1.1	1.2	0.9	0.8	–	3.0	2.9	1.6	1.5	2.1	0.4	0.5
18:3n-3	0.6	0.2	0.3	0.3	0.2	0.7	0.4	0.3	0.5	0.4	0.5	–	0.3	0.2	1.4	1.2	0.4	0.1	0.2
18:4n-3	0.8	0.4	0.5	0.8	0.6	1.1	0.7	0.2	0.5	0.5	0.7	0.2	3.3	1.6	1.8	1.4	0.2	0.2	0.2
20:0	1.2	0.9	0.5	0.5	0.2	0.3	1.1	0.6	0.7	0.6	0.4	0.4	4.1	7.1	1.4	0.5	0.4	0.8	0.5
20:1n-9	0.4	0.4	0.2	0.2	0.5	0.2	0.5	0.3	0.3	0.3	0.2	0.7	0.4	0.4	1.1	0.7	1.9	1.0	0.5
20:3n-6	0.3	0.5	1.0	1.0	0.6	0.6	0.7	0.3	0.8	0.5	0.4	0.5	0.3	0.5	1.5	0.8	–	0.3	0.2
20:4n-6	21.8	27.1	19.2	19.3	32.4	28.0	22.3	41.2	34.3	36.7	37.6	34.2	17.8	12.5	16.5	25.6	11.6	24.3	34.3
20:4n-3	–	0.4	1.5	1.3	0.3	0.6	0.4	–	0.7	–	0.3	0.4	0.1	–	2.1	1.2	–	0.3	0.1
20:5n-3	1.6	1.5	2.1	2.8	1.6	3.8	4.9	2.7	2.4	4.6	3.6	2.3	5.2	3.2	2.5	3.0	15.9	6.8	3.5
22:0	0.4	0.4	0.4	0.3	–	0.1	0.3	–	1.3	–	–	0.2	2.3	4.9	0.6	0.2	–	0.3	0.2
22:4n-6	0.6	0.5	2.9	2.5	0.7	0.9	1.0	0.8	1.2	1.1	0.8	0.9	1.3	1.1	9.1	9.2	0.7	2.9	0.9
22:5n-6	0.4	0.9	3.2	3.0	1.5	1.5	4.4	0.4	0.6	–	0.5	2.3	0.4	0.7	5.0	3.1	1.9	2.2	2.1
22:4n-3	–	–	0.2	0.2	–	0.3	–	–	–	–	–	–	–	–	1.9	0.5	–	–	–
22:5n-3	0.7	0.2	0.2	0.3	–	0.5	–	0.7	1.1	0.7	0.5	0.7	0.3	–	1.9	1.4	0.9	1.5	0.6
22:6n-3	1.4	1.7	7.1	7.7	1.9	4.1	5.1	1.5	2.2	3.0	3.6	5.3	5.5	6.1	5.8	6.8	8.6	10.7	5.5
24:5n-6	6.4	13.1	10.6	11.3	15.4	13.0	5.8	14.3	13.1	11.3	12.0	13.4	2.0	2.4	1.7	0.5	–	8.8	13.5
24:6n-3	0.6	3.4	2.8	4.4	2.6	6.8	5.5	2.1	4.4	2.8	2.8	3.4	0.2	0.3	7.6	4.6	12.4	1.1	1.4
Other[a]	8.3	7.1	11.7	11.5	8.4	10.1	10.0	8.7	8.7	5.9	7.6	6.5	6.2	3.1	12.5	11.5	9.9	11.6	10.1

[a] 12:0, 14:1, 15:0, i-15:0, ai-15:0, 15:1, i-16:0, ai-16:0, 16:1n-9, 16:3, i-17:0, 17:0, 17:1, di-Me-16:1, i-18:0, 19:0, 18:3n-4, 18:3n-3, 20:2n-6, 22:1