

Rapid Screening of Microalgae as Potential Sources of Natural Antioxidants

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Supplementary tables

Table S1

Table S1. Information of 16 microalgae species

Serial number	Species	Classes	Medium	Source
SCSIO-46784	<i>Chlorella sorokiniana</i>	Chlorophyta	BG-11	Economic Microalgae Culture Collection of Guangdong Province (South China Sea Institute of Oceanography, Chinese Academy of Sciences)
SCSIO-46781	<i>Euglena gracilis</i>	Euglenophyta	EGM	Freshwater Algae Culture of Hydrobiology Collection at the Institute of Hydrobiology, Chinese Academy of Sciences (Wuhan, China), Strain No. FACHB-849
SCSIO-46716	<i>Eustigmatos</i> sp.	Chlorophyta	BG-11	Economic Microalgae Culture Collection of Guangdong Province (South China Sea Institute of Oceanography, Chinese Academy of Sciences)
SCSIO-45217	<i>Nannochloropsis</i> sp.	Chrysophyta	F/2	Economic Microalgae Culture Collection of Guangdong Province (South China Sea Institute of Oceanography, Chinese Academy of Sciences)
SCSIO-45006	<i>Nannochloropsis</i> sp.	Chrysophyta	F/2	Economic Microalgae Culture Collection of Guangdong Province (South China Sea Institute of Oceanography, Chinese Academy of Sciences)
SCSIO-45224	<i>Nannochloropsis</i> sp.	Chrysophyta	F/2	Economic Microalgae Culture Collection of Guangdong Province (South China Sea Institute of Oceanography, Chinese Academy of Sciences)
SCSIO-45120	<i>Phaeodactylum tricornutum</i>	Becillariophyta	F/2	Economic Microalgae Culture Collection of Guangdong Province (South China Sea Institute of Oceanography, Chinese Academy of Sciences)
SCSIO-45949	<i>Porphyridium cruentum</i>	Rhodophyta	ASW	Economic Microalgae Culture Collection of Guangdong Province (South China Sea Institute of Oceanography, Chinese Academy of Sciences)
SCSIO-45707	<i>Rhodorus</i> sp	Rhodophyta	ASW	Economic Microalgae Culture Collection of Guangdong Province (South China Sea

				Institute of Oceanography, Chinese Academy of Sciences)
SCSIO-46548	<i>Asterarcys</i> sp.	Chlorophyta	ZSNT (fresh water)	Economic Microalgae Culture Collection of Guangdong Province (South China Sea Institute of Oceanography, Chinese Academy of Sciences)
SCSIO-45829	<i>Asterarcys</i> sp.	Chlorophyta	ZSNT (seawater)	Economic Microalgae Culture Collection of Guangdong Province (South China Sea Institute of Oceanography, Chinese Academy of Sciences)
SCSIO-46585	<i>Scenedesmus</i> sp.	Chlorophyta	BG-11	Economic Microalgae Culture Collection of Guangdong Province (South China Sea Institute of Oceanography, Chinese Academy of Sciences)
SCSIO-46579	<i>Scenedesmus</i> sp.	Chlorophyta	BG-11	Economic Microalgae Culture Collection of Guangdong Province (South China Sea Institute of Oceanography, Chinese Academy of Sciences)
SCSIO-46591	<i>Scenedesmus</i> sp.	Chlorophyta	BG-11	Economic Microalgae Culture Collection of Guangdong Province (South China Sea Institute of Oceanography, Chinese Academy of Sciences)
SCSIO-44012	<i>Arthrospira platensis</i>	Cyanophyta	Zarrouk	Economic Microalgae Culture Collection of Guangdong Province (South China Sea Institute of Oceanography, Chinese Academy of Sciences)
SCSIO-46782	<i>Uronema</i> sp.	Chlorophyta	BG-11	Economic Microalgae Culture Collection of Guangdong Province (South China Sea Institute of Oceanography, Chinese Academy of Sciences)

Table S2

Table S2. Components of BG11 medium

Serial number	Compound	Concentration
1	NaNO ₃	1.5 g L ⁻¹
2	Na ₂ HPO ₄ ·3H ₂ O	40 mg L ⁻¹
3	MgSO ₄ ·7H ₂ O	75 mg L ⁻¹
4	CaCl ₂ ·2H ₂ O	36 mg L ⁻¹
5	C ₆ H ₈ FeNO ₇	6 mg L ⁻¹
6	C ₆ H ₈ O ₇	6 mg L ⁻¹
7	EDTA	1 mg L ⁻¹
8	Na ₂ CO ₃	20 mg L ⁻¹
9	A ₅	1 mL L ⁻¹

Table S3Table S3. Components of A₅

Serial number	Compound	Concentration
1	H ₃ BO ₃	2.86 g L ⁻¹
2	MnCl ₂ ·4H ₂ O	1.81 g L ⁻¹
3	ZnSO ₄ ·7H ₂ O	0.22 g L ⁻¹
4	Na ₂ MoO ₄ ·2H ₂ O	0.39 g L ⁻¹
5	CuSO ₄ ·5H ₂ O	0.08 g L ⁻¹
6	Co(NO ₃) ₂ ·6H ₂ O	0.05 g L ⁻¹

Table S4

Table S4. Components of F/2 medium

Serial number	Compound	Concentration
1	NaNO ₃	75 mg L ⁻¹
2	NaH ₂ PO ₄ ·2H ₂ O	5 mg L ⁻¹
3	Na ₂ SiO ₃ ·9H ₂ O	30 mg L ⁻¹
4	F/2 trace metal solution	1 mL L ⁻¹
5	F/2 vitamin solution	0.5 mL L ⁻¹

Table S5

Table S5. Components of F/2 trace metal solution

Serial number	Compound	Concentration
1	$\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$	3.15 g L^{-1}
2	$\text{EDTANa}_2 \cdot 2\text{H}_2\text{O}$	4.36 g L^{-1}
3	$\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$	9.8 mg L^{-1}
4	$\text{Na}_2\text{MoO}_4 \cdot 2\text{H}_2\text{O}$	6.3 mg L^{-1}
5	$\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$	22 mg L^{-1}
6	$\text{CoCl}_2 \cdot 6\text{H}_2\text{O}$	10 mg L^{-1}
7	$\text{MnCl}_2 \cdot 4\text{H}_2\text{O}$	180 mg L^{-1}

Table S6

Table S6. Components of F/2 vitamin solution

Serial number	Compound	Concentration
1	Vitamin B ₁₂	1 mg L ⁻¹
2	Biotin	1 mg L ⁻¹
3	Thiamine·HCl	0.2 g L ⁻¹

Table S7

Table S7. Components of ASW medium

Serial number	Compound	Concentration
1	NaCl	27 g L ⁻¹
2	MgSO ₄ ·7H ₂ O	6.6 g L ⁻¹
3	MgCl ₂ ·6H ₂ O	5.6 g L ⁻¹
4	CaCl ₂ ·2H ₂ O	1.5 g L ⁻¹
5	KNO ₃	1.45 g L ⁻¹
6	K ₂ HPO ₄	0.12 g L ⁻¹
7	EDTANa ₂ ·2H ₂ O	4.36 mg L ⁻¹
8	FeCl ₃ ·6H ₂ O	3.15 mg L ⁻¹
9	MnCl ₂ ·4H ₂ O	180 µg L ⁻¹
10	ZnSO ₄ ·7H ₂ O	22 µg L ⁻¹
11	Na ₂ MoO ₄ ·2H ₂ O	6 µg L ⁻¹
12	CoCl ₂ ·6H ₂ O	10 µg L ⁻¹
13	CuSO ₄ ·5H ₂ O	10 µg L ⁻¹

Table S8

Table S8. Components of modified ZSNT medium

Serial number	Compound	Concentration
1	NaNO ₃	1.5 g L ⁻¹
2	NaH ₂ PO ₄ ·2H ₂ O	0.05 g L ⁻¹
3	CaCl ₂	0.02 g L ⁻¹
4	MgSO ₄ ·7H ₂ O	0.05 g L ⁻¹
5	KCl	0.1 g L ⁻¹
6	K ₂ SO ₄	0.3 g L ⁻¹
7	M ₂	1 mL L ⁻¹
8	A ₅	1 mL L ⁻¹

Table S9Table S9. Components of M₂

Serial number	Compound	Concentration
1	FeCl ₃ ·6H ₂ O	2.44 g L ⁻¹
2	EDTANa ₂ ·2H ₂ O	1.89 g L ⁻¹

Table S10

Table S10. Components of modified EGM medium

Serial number	Compound	Concentration
1	NH ₄ Cl	0.83 g L ⁻¹
2	KH ₂ PO ₄	1 g L ⁻¹
3	MgSO ₄ ·7H ₂ O	0.2 g L ⁻¹
4	CaCl ₂	0.02 g L ⁻¹
5	Fe ₂ (SO ₄) ₃	3 mg L ⁻¹
6	EDTANa ₂ ·2H ₂ O	0.48 mg L ⁻¹
7	Vitamin B ₁	0.1 mg L ⁻¹
8	Vitamin B ₁₂	0.1 µg L ⁻¹
9	A ₅	1 mL L ⁻¹

Table S11

Table S11. Components of Zarrouk medium

Serial number	Compound	Concentration
1	NaHCO ₃	5 g L ⁻¹
2	NaNO ₃	0.5 g L ⁻¹
3	FeSO ₄ ·7H ₂ O	5 mg L ⁻¹
4	NaH ₂ PO ₄ ·2H ₂ O	0.02 g L ⁻¹
5	K ₂ SO ₄	0.5 g L ⁻¹
6	MgSO ₄ ·7H ₂ O	0.5 g L ⁻¹
7	CaCl ₂	0.04 g L ⁻¹
8	A ₅	1 mL L ⁻¹

Table S12Table S12. Carotenoids contents (mg g⁻¹ biomass) of the extracts from 16 microalgae strains

Species	One step	Three steps			
	ethanol/water	hexane	ethylacetate	water	total
<i>Chlorella sorokiniana</i> SCSIO-46784	1.02±0.04 ^b	0.28±0.01	0.23±0.01	N.D.	0.51±0.02 ^a
<i>Euglena gracilis</i> SCSIO-46781	3.71±0.14 ^a	2.23±0.02	3.84±0.10	N.D.	6.07±0.12 ^b
<i>Eustigmatus</i> sp. SCSIO-46716	0.08±0.00 ^a	0.05±0.00	0.03±0.00	0.01±0.00	0.09±0.01 ^b
<i>Nannochloropsis</i> sp. SCSIO-45217	0.68±0.00 ^b	0.21±0.03	0.22±0.01	0.14±0.00	0.57±0.03 ^a
<i>Nannochloropsis</i> sp. SCSIO-45006	0.79±0.05 ^a	0.40±0.02	0.47±0.00	N.D.	0.86±0.02 ^a
<i>Nannochloropsis</i> sp. SCSIO-45224	2.37±0.05 ^a	0.86±0.01	1.40±0.03	0.41±0.01	2.67±0.02 ^b
<i>Phaeodactylum tricornutum</i> SCSIO-45120	5.45±0.09 ^b	0.20±0.00	0.28±0.01	0.10±0.00	0.58±0.01 ^a
<i>Porphyridium cruentum</i> SCSIO-45949	0.37±0.03 ^a	0.37±0.03	N.D.	0.04±0.04	0.41±0.07 ^a
<i>Rhodorus</i> sp. SCSIO-45707	0.02±0.00 ^a	0.01±0.00	0.01±0.00	0.03±0.00	0.05±0.01 ^b
<i>Asterarcys</i> sp. SCSIO-46548	1.14±0.02 ^a	0.44±0.04	1.13±0.06	0.20±0.03	1.77±0.13 ^b
<i>Asterarcys</i> sp. SCSIO-45829	2.06±0.05 ^a	1.17±0.14	2.37±0.20	0.17±0.01	3.61±0.35 ^b
<i>Scenedesmus</i> sp. SCSIO-46585	0.29±0.00 ^b	0.02±0.00	0.03±0.00	N.D.	0.05±0.00 ^a
<i>Scenedesmus</i> sp. SCSIO-46579	0.86±0.06 ^b	0.04±0.01	0.05±0.00	N.D.	0.10±0.01 ^a
<i>Scenedesmus</i> sp. SCSIO-46591	0.10±0.00 ^b	0.02±0.00	0.04±0.00	N.D.	0.06±0.01 ^a
<i>Arthrospira platensis</i> SCSIO-44012	1.36±0.06 ^a	1.03±0.03	0.32±0.01	0.18±0.02	1.53±0.01 ^a
<i>Uronema</i> sp. SCSIO-46782	2.22±0.03 ^b	0.16±0.01	0.13±0.01	0.01±0.01	0.31±0.01 ^a

Note: N.D. = not detectable; different letters indicated significant differences in carotenoids contents of microalgae extracts obtained by one-step and three-step methods ($p<0.05$).

Table S13Table S13. Phenols contents (mg g⁻¹ biomass) of the extracts from 16 microalgae strains

Species	One step	Three steps			
	ethanol/water	hexane	ethylacetate	water	total
<i>Chlorella sorokiniana</i> SCSIO-46784	1.81±0.09 ^a	1.08±0.05	N.D.	1.07±0.05	2.16±0.04 ^b
<i>Euglena gracilis</i> SCSIO-46781	3.90±0.06 ^a	4.31±0.07	6.26±0.25	1.16±0.03	11.73±0.22 ^b
<i>Eustigmatos</i> sp. SCSIO-46716	0.58±0.01 ^a	0.37±0.02	0.28±0.00	1.23±0.05	1.88±0.06 ^b
<i>Nannochloropsis</i> sp. SCSIO-45217	1.23±0.01 ^a	1.34±0.09	0.53±0.04	0.50±0.03	2.36±0.15 ^b
<i>Nannochloropsis</i> sp. SCSIO-45006	2.80±0.30 ^a	2.55±0.43	1.19±0.04	1.39±0.12	5.13±0.58 ^b
<i>Nannochloropsis</i> sp. SCSIO-45224	2.39±0.06 ^a	1.51±0.06	2.07±0.20	1.88±0.05	5.46±0.23 ^b
<i>Phaeodactylum tricornutum</i> SCSIO-45120	3.69±0.03 ^b	0.32±0.02	0.40±0.03	1.77±0.01	2.50±0.02 ^a
<i>Porphyridium cruentum</i> SCSIO-45949	0.94±0.02 ^a	0.49±0.03	0.89±0.01	0.61±0.10	1.99±0.11 ^b
<i>Rhodorus</i> sp. SCSIO-45707	0.43±0.05 ^a	0.23±0.01	0.25±0.01	0.38±0.01	0.86±0.02 ^b
<i>Asterarcys</i> sp. SCSIO-46548	2.90±0.23 ^b	0.23±0.05	0.18±0.03	1.90±0.28	2.31±0.36 ^a
<i>Asterarcys</i> sp. SCSIO-45829	2.89±0.06 ^a	0.62±0.36	0.13±0.05	3.01±0.06	3.76±0.47 ^b
<i>Scenedesmus</i> sp. SCSIO-46585	1.51±0.02 ^a	0.30±0.03	N.D.	1.45±0.03	1.76±0.05 ^b
<i>Scenedesmus</i> sp. SCSIO-46579	1.93±0.24 ^a	0.24±0.02	0.29±0.02	1.03±0.12	1.56±0.11 ^a
<i>Scenedesmus</i> sp. SCSIO-46591	1.15±0.04 ^a	0.21±0.02	0.22±0.01	1.23±0.07	1.66±0.08 ^b
<i>Arthrospira platensis</i> SCSIO-44012	1.45±0.12 ^a	0.82±0.05	2.59±0.12	2.03±0.06	5.44±0.11 ^b
<i>Uronema</i> sp. SCSIO-46782	2.17±0.00 ^a	0.39±0.03	0.77±0.15	1.05±0.12	2.21±0.03 ^a

Note: N.D. = not detectable; different letters indicated significant differences in phenols contents of microalgae extracts obtained by one-step and three-step methods ($p<0.05$).

Table S14

Table S14. ABTS radicals scavenging capacity of the ethanol/water extraction extracts and the fractionating procedure extracts from 16 microalgae strains

Species	One step	Three steps			
	ethanol/water	hexane	ethylacetate	water	total
<i>Chlorella sorokiniana</i> SCSIO-46784	24.55±0.97 ^a	6.74±0.15	7.98±0.37	12.76±1.19	27.49±1.06 ^a
<i>Euglena gracilis</i> SCSIO-46781	29.60±0.95 ^a	23.13±2.16	19.52±1.42	13.40±0.37	56.06±3.45 ^b
<i>Eustigmatis</i> sp. SCSIO-46716	6.82±0.37 ^a	1.94±0.04	2.00±0.10	7.80±0.13	11.73±0.20 ^b
<i>Nannochloropsis</i> sp. SCSIO-45217	8.95±0.70 ^a	5.52±0.53	4.84±1.73	4.87±0.38	15.23±1.68 ^b
<i>Nannochloropsis</i> sp. SCSIO-45006	18.22±0.21 ^a	6.11±0.16	7.93±0.28	14.29±0.56	28.33±0.56 ^b
<i>Nannochloropsis</i> sp. SCSIO-45224	28.80±0.27 ^b	7.63±0.39	8.01±0.14	8.69±0.42	24.33±0.68 ^a
<i>Phaeodactylum tricornutum</i> SCSIO-45120	22.62±0.05 ^a	2.09±0.15	2.96±0.12	22.10±0.30	27.15±0.25 ^b
<i>Porphyridium cruentum</i> SCSIO-45949	5.80±0.65 ^a	4.70±0.16	5.77±0.39	5.57±0.38	16.05±0.72 ^b
<i>Rhodorus</i> sp. SCSIO-45707	3.67±0.09 ^a	1.19±0.32	1.54±0.15	5.63±0.03	8.36±0.43 ^b
<i>Asterarcys</i> sp. SCSIO-46548	17.12±0.16 ^b	N.D.	N.D.	5.86±0.47	5.86±0.47 ^a
<i>Asterarcys</i> sp. SCSIO-45829	20.32±0.12 ^b	1.47±0.33	0.09±0.02	8.11±1.07	9.67±1.42 ^a
<i>Scenedesmus</i> sp. SCSIO-46585	13.63±0.62 ^a	N.D.	N.D.	5.55±0.13	12.44±0.34 ^a
<i>Scenedesmus</i> sp. SCSIO-46579	15.21±1.01 ^b	N.D.	0.29±0.12	6.01±0.62	6.30±0.51 ^a
<i>Scenedesmus</i> sp. SCSIO-46591	8.85±0.70 ^a	N.D.	N.D.	7.12±0.77	7.12±0.77 ^a
<i>Arthrospira platensis</i> SCSIO-44012	20.97±1.15 ^a	6.03±0.35	14.98±0.57	21.72±0.05	42.73±0.53 ^b
<i>Uronema</i> sp. SCSIO-46782	24.72±0.25 ^a	3.50±0.07	4.56±0.25	14.04±0.86	22.10±1.12 ^a

Note: N.D. = not detectable; different letters indicated significant differences in ABTS radicals scavenging capacity of microalgae extracts obtained by one-step and three-step methods ($p<0.05$).

Table S15

Table S15. DPPH radicals scavenging capacity of the ethanol/water extraction extracts and the fractionating procedure extracts from 16 microalgae strains

Species	One step	Three steps			
	ethanol/water	hexane	ethylacetate	water	total
<i>Chlorella sorokiniana</i> SCSIO-46784	9.99±0.62 ^a	3.94±0.41	2.37±0.04	3.00±0.39	9.31±0.58 ^a
<i>Euglena gracilis</i> SCSIO-46781	16.84±0.38 ^a	15.49±0.69	13.43±0.74	5.12±0.41	34.04±1.66 ^b
<i>Eustigmatis</i> sp. SCSIO-46716	5.26±0.19 ^a	1.31±0.51	0.10±0.08	2.57±0.14	3.97±0.63 ^a
<i>Nannochloropsis</i> sp. SCSIO-45217	5.43±0.13 ^a	7.83±0.25	2.71±0.15	2.05±0.28	12.60±0.52 ^b
<i>Nannochloropsis</i> sp. SCSIO-45006	7.89±0.28 ^a	7.31±0.63	4.87±0.68	7.60±0.34	19.78±0.41 ^b
<i>Nannochloropsis</i> sp. SCSIO-45224	14.20±0.18 ^a	4.11±0.56	7.26±0.10	7.99±0.56	19.36±0.10 ^b
<i>Phaeodactylum tricornutum</i> SCSIO-45120	18.27±0.69 ^b	1.60±0.17	3.88±0.10	3.20±0.14	8.69±0.41 ^a
<i>Porphyridium cruentum</i> SCSIO-45949	2.58±0.04 ^a	2.48±0.10	2.72±0.13	3.25±0.30	8.45±0.45 ^b
<i>Rhodorus</i> sp. SCSIO-45707	2.45±0.48 ^a	N.D.	N.D.	1.46±0.11	1.46±0.11 ^a
<i>Asterarcys</i> sp. SCSIO-46548	10.14±0.65 ^a	0.93±0.13	3.02±0.02	4.88±0.11	8.83±0.26 ^a
<i>Asterarcys</i> sp. SCSIO-45829	10.26±0.46 ^a	2.60±0.19	4.22±0.02	2.79±0.00	9.61±0.21 ^a
<i>Scenedesmus</i> sp. SCSIO-46585	7.23±0.08 ^b	N.D.	1.84±0.13	3.83±0.29	5.67±0.30 ^a
<i>Scenedesmus</i> sp. SCSIO-46579	9.81±0.22 ^b	N.D.	0.46±0.06	2.30±0.08	2.76±0.13 ^a
<i>Scenedesmus</i> sp. SCSIO-46591	2.06±0.18 ^a	1.97±0.97	0.71±0.21	2.43±0.83	5.12±1.79 ^a
<i>Arthrospira platensis</i> SCSIO-44012	19.99±1.13 ^a	5.94±1.06	12.03±1.14	3.45±0.30	21.42±2.24 ^a
<i>Uronema</i> sp. SCSIO-46782	12.48±0.23 ^b	2.17±0.08	2.26±0.13	3.71±0.54	8.14±0.69 ^a

Note: N.D. = not detectable; different letters indicated significant differences in DPPH radicals scavenging capacity of microalgae extracts obtained by one-step and three-step methods ($p<0.05$).

Table S16

Table S16. FRAP activity of the ethanol/water extraction extracts and the fractionating procedure extracts from 16 microalgae strains

Species	One step	Three steps			
	ethanol/water	hexane	ethylacetate	water	total
<i>Chlorella sorokiniana</i> SCSIO-46784	22.90±0.39 ^a	9.98±0.67	9.27±0.66	4.54±0.12	23.80±0.43 ^a
<i>Euglena gracilis</i> SCSIO-46781	56.49±1.43 ^a	44.71±4.18	83.79±1.89	4.12±1.12	132.62±7.01 ^b
<i>Eustigmatus</i> sp. SCSIO-46716	3.69±0.33 ^a	1.83±0.15	1.73±0.15	3.17±0.66	6.73±0.45 ^b
<i>Nannochloropsis</i> sp. SCSIO-45217	16.33±1.45 ^a	5.10±0.40	4.40±0.17	5.36±0.23	14.86±0.60 ^a
<i>Nannochloropsis</i> sp. SCSIO-45006	13.20±0.57 ^a	6.79±1.22	6.19±0.26	5.30±0.15	18.28±1.05 ^b
<i>Nannochloropsis</i> sp. SCSIO-45224	30.89±0.68 ^a	7.70±0.42	16.94±0.04	11.37±0.40	36.01±0.77 ^b
<i>Phaeodactylum tricornutum</i> SCSIO-45120	45.42±2.28 ^b	4.08±0.51	6.05±0.20	9.33±0.98	19.46±1.37 ^a
<i>Porphyridium cruentum</i> SCSIO-45949	10.80±0.35 ^a	4.76±0.30	6.88±0.21	2.39±0.09	14.03±0.10 ^b
<i>Rhodorus</i> sp. SCSIO-45707	4.66±0.67 ^a	3.02±1.12	1.58±0.85	3.74±0.25	8.34±1.85 ^a
<i>Asterarcys</i> sp. SCSIO-46548	28.02±1.85 ^b	1.10±0.08	0.75±0.02	15.21±0.77	17.06±0.87 ^a
<i>Asterarcys</i> sp. SCSIO-45829	35.42±0.54 ^b	1.37±0.31	N.D.	10.02±0.26	11.39±0.57 ^a
<i>Scenedesmus</i> sp. SCSIO-46585	11.43±0.26 ^b	0.34±0.05	2.30±0.68	5.86±0.25	8.50±0.46 ^a
<i>Scenedesmus</i> sp. SCSIO-46579	30.45±1.40 ^b	1.36±0.07	0.97±0.04	5.15±0.04	7.48±0.08 ^a
<i>Scenedesmus</i> sp. SCSIO-46591	11.49±0.60 ^a	1.39±0.04	1.34±0.11	4.05±0.18	6.78±0.30 ^a
<i>Arthrospira platensis</i> SCSIO-44012	17.50±0.94 ^a	7.48±0.52	22.96±1.98	20.66±0.67	51.10±2.59 ^b
<i>Uronema</i> sp. SCSIO-46782	19.47±1.03 ^a	5.06±0.74	4.12±0.63	9.06±1.52	18.24±1.09 ^a

Note: N.D. = not detectable; different letters indicated significant differences in FRAP activity of microalgae extracts obtained by one-step and three-step methods ($p<0.05$).