

Supplementary Information

Saturated and Polyunsaturated Fatty Acids Production by *Aurantiochytrium* sp. PKU#Mn4 on *Enteromorpha* Hydrolysate

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Table S1. Composition of *Enteromorpha* hydrolysate medium.

<i>Enteromorpha</i> (g)	Sterile distilled water (mL)	98% (w/v) H ₂ SO ₄ (mL)
40	760	8
60	1140	12
80	1520	16
100	1900	20
120	2280	24

Table S2. Fatty acid composition of lipids accumulated during the cultivation of PKU#Mn4 on different concentrations of *Enteromorpha* hydrolysate.

Fatty acid	<i>Enteromorpha</i> hydrolysate (g/L)				
	40	60	80	100	120
C12:0	0.43 ± 0.01	0.59 ± 0.02	0.54 ± 0.03	0.45 ± 0.03	0.59 ± 0.01
C14:0	2.03 ± 0.07	2.15 ± 0.21	2.83 ± 0.08	2.95 ± 0.11	3.44 ± 0.17
C15:0	5.22 ± 0.34	3.69 ± 0.25	8.13 ± 0.39	5.29 ± 0.19	8.87 ± 0.27
C16:0	31.22 ± 1.54	31.06 ± 1.87	32 ± 2.33	34.25 ± 1.65	33.73 ± 0.77
C17:0	1.11 ± 0.02	1.31 ± 0.22	2.1 ± 0.13	1.47 ± 0.1	1.91 ± 0.09
C18:0	2.67 ± 0.22	3.36 ± 0.2	2.13 ± 0.33	2.21 ± 0.02	1.67 ± 0.06
C20:4n-6	0.55 ± 0.01	0.69 ± 0.02	0.68 ± 0.03	0.63 ± 0.01	0.75 ± 0.02
C20:5n-3	2.77 ± 0.03	2.82 ± 0.05	3.16 ± 0.06	2.61 ± 0.11	3.22 ± 0.09
C22:5n-3	7.56 ± 0.72	8.82 ± 0.17	7.95 ± 0.33	8.48 ± 0.56	7.37 ± 0.44
C22:6n-3	37.22 ± 2.44	39.13 ± 1.78	35.99 ± 1.25	37.4 ± 2.1	35.59 ± 1.23
SFA	42.65 ± 3.2	42.18 ± 2.67	47.76 ± 3.31	46.64 ± 2.9	49.64 ± 1.89
PUFA	48.12 ± 1.69	51.48 ± 2.78	47.79 ± 2.55	49.13 ± 1.08	46.95 ± 1.17

Data are expressed as mean ± SD of triplicate experiments. The values (mean ± SD) represent the percent of TFA. SFA and PUFA are acronyms for saturated fatty acids and polyunsaturated fatty acids, respectively. Lipids were extracted at the end of the fermentation.

Table S3. Fatty acid composition of lipids accumulated during the cultivation of PKU#Mn4 strain in different concentrations of glucose.

Fatty acid	Glucose (g/L)				
	10	20	30	40	50
C12:0	0.34 ± 0.02	0.12 ± 0.01	0.28 ± 0.01	0.51 ± 0.02	0.21 ± 0.02
C14:0	5.87 ± 0.16	4.37 ± 0.22	5.54 ± 0.91	7.25 ± 0.65	3.38 ± 0.05
C15:0	0.99 ± 0.65	1.77 ± 0.1	1.67 ± 0.01	0.63 ± 0.04	0.59 ± 0.03
C16:0	36.19 ± 3.71	40.66 ± 2.63	41.12 ± 3.06	40.33 ± 2.92	31.88 ± 2.83
C17:0	0.02 ± 0	0.05 ± 0	0.11 ± 0.01	0.03 ± 0	0.01 ± 0
C18:0	0.63 ± 0.08	0.79 ± 0.06	1.35 ± 0.08	0.97 ± 0.03	1.03 ± 0.01
C20:4n-6	0.24 ± 0.02	0.44 ± 0.01	0.12 ± 0.01	0.1 ± 0	0.28 ± 0.02
C20:5n-3	0.47 ± 0.01	0.32 ± 0.02	0.25 ± 0.01	0.49 ± 0.02	0.39 ± 0.02
C22:5n-3	7.74 ± 0.04	6.79 ± 0.12	6.23 ± 0.09	4.22 ± 0.13	4.48 ± 0.24
C22:6n-3	43.26 ± 3.78	41.98 ± 3.22	37.6 ± 4.73	39.05 ± 3.97	40.11 ± 4.61
SFA	44.09 ± 3.67	47.73 ± 2.79	50.07 ± 4.55	49.72 ± 2.92	37.15 ± 3.37
PUFA	51.64 ± 2.49	49.5 ± 3.65	44.23 ± 2.44	43.84 ± 1.73	45.22 ± 1.46

Data are expressed as mean ± SD of triplicate experiments. The values represent the percent of total fatty acids. SFA and PUFA are acronyms for saturated fatty acids and polyunsaturated fatty acids, respectively. Lipids were extracted at the end of the fermentation.

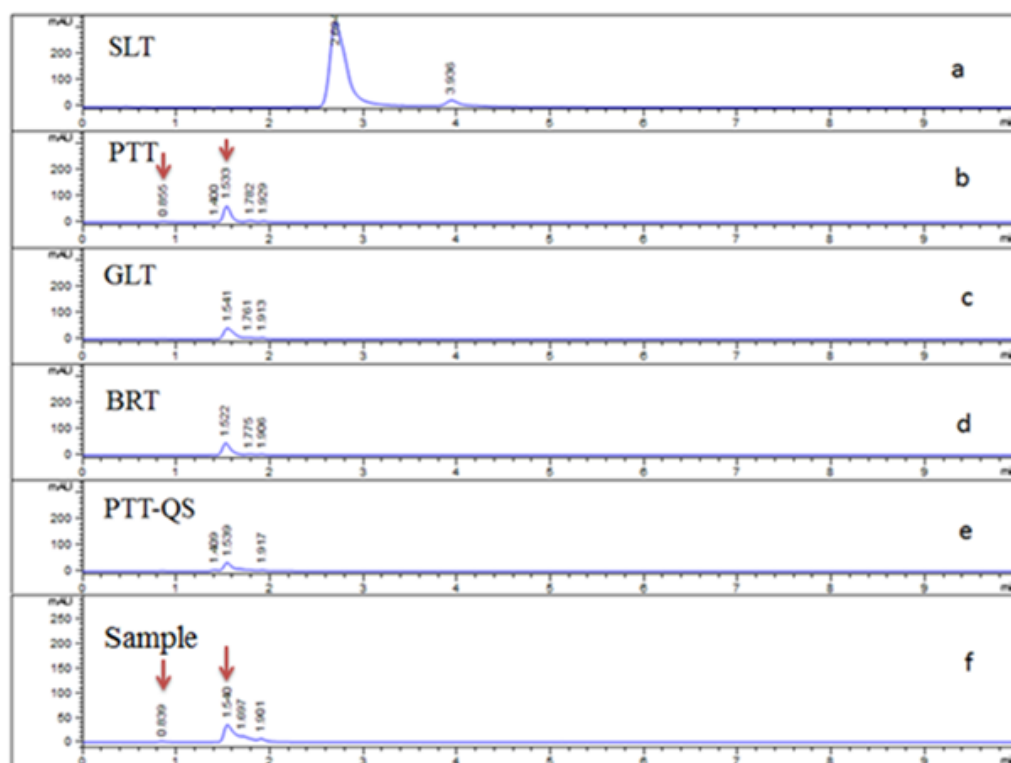


Figure S1. HPLC analysis of monosaccharide standard solution. (a) Rhamnose, (b) Glucose, (c) Mannose, (d) Galactose, (e) Glucuronic acid, and (f) *Enteromorpha* hydrolysate.