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RESEARCH ARTICLE

EXTRACTION AND EVALUATION OF EDIBLE OIL FROM *SCHIZOCHYTRIUM* SP. USING AN AQUEOUS ENZYMATIC METHOD

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SUPPLEMENTARY MATERIALS

Table S1 Experimental design and observed response of microalgal oil to aqueous enzymatic extraction

Run	Coded variables			Process variables			Free oil recovery Y_1 (%, g g^{-1})	Total oil recovery Y_2 (%, g g^{-1})
	A	B	C	Liquid-to-solid ratio (mL g^{-1})	Enzyme concentration (%)	Reaction time (h)		
1	1	0	–1	6	2.5	1.5	29.7	52.6
2	–1	–1	0	4	2.0	2.0	41.5	54.2
3	0	0	0	5	2.5	2.0	49.0	66.3
4	0	0	0	5	2.5	2.0	46.2	65.8
5	–1	0	1	4	2.5	2.5	42.4	54.7
6	–1	1	0	4	3.0	2.0	41.2	56.0
7	0	0	0	5	2.5	2.0	50.6	66.9
8	1	–1	0	6	2.0	2.0	32.2	46.3
9	0	1	–1	5	3.0	1.5	39.1	64.3
10	1	0	1	6	2.5	2.5	42.0	60.8
11	0	1	1	5	3.0	2.5	44.5	66.9
12	0	0	0	5	2.5	2.0	48.9	68.9
13	–1	0	–1	4	2.5	1.5	45.0	57.5
14	0	–1	1	5	2.0	2.5	44.2	65.3
15	0	0	0	5	2.5	2.0	48.8	68.2
16	0	–1	–1	5	2.0	1.5	30.4	55.1
17	1	1	0	6	3.0	2.0	38.0	53.8

Table S2 ANOVA of response surface quadratic model for free oil recovery

Source	Sum of aquares	Degree of freedom	Mean square	*F*-value	*P*-value*
Model	638.1	9	70.9	20.8	0.000
A	98.8	1	98.8	29.0	0.001
B	26.6	1	26.6	7.8	0.027
C	103.8	1	103.8	30.4	0.001
AB	9.3	1	9.3	2.7	0.143
AC	55.3	1	55.3	16.2	0.005
BC	17.9	1	17.9	5.3	0.056
A^2	110.8	1	110.8	32.5	0.001
B^2	120.2	1	120.2	35.3	0.001
C^2	61.9	1	61.9	18.2	0.004
Residual	23.9	7	3.4		
Lack of fit	14.1	3	4.7	1.9	0.267
Pure error	9.8	4	2.4		
Corrected total	661.9	16			

Note: A, Liquid-to-solid ratio (mL g^{-1}); B, Enzyme concentration (%); C, Reaction time (h); R^2 = 0.964 and Adj R^2 = 0.918; *, Highly significant at $P < 0.01$, significant at $0.01 < P < 0.05$, and not significant at $P > 0.05$.

Table S3 ANOVA of response surface quadratic model for total oil recovery

Source	Sum of aquares	Degree of freedom	Mean square	*F*-value	*P*-value*
Model	718.6	9	79.8	18.6	<0.001
A	9.8	1	9.8	2.3	0.174
B	50.4	1	50.4	11.8	0.011
C	41.4	1	41.4	9.7	0.017
AB	8.1	1	8.1	1.9	0.212
AC	30.4	1	30.4	7.1	0.032
BC	14.7	1	14.7	3.4	0.107
A^2	468.8	1	468.8	109.4	< 0.001
B^2	69.6	1	69.6	16.3	0.005
C^2	0.3	1	0.3	0.1	0.801
Residual	30.0	7	4.3		
Lack of fit	23.3	3	7.8	4.7	0.086
Pure error	6.7	4	1.7		
Corrected total	748.6	16			

Note: A, Liquid-to-solid ratio (mL g^{-1}); B, Enzyme concentration (%); C, Reaction time (h); R^2 = 0.960 and Adj R^2 = 0.908; *, Highly significant at $P < 0.01$, significant at $0.01 < P < 0.05$, and not significant at $P > 0.05$.