

Table S1 Analysis of variance for quadratic model for biomass concentration.

Source	Sum of Squares	df	Mean Square	F-value	p-value	Remark
Model	11.13	9	1.24	6.25	0.0123	Significant
A-CG	0.6272	1	0.6272	3.17	0.1183	Significant
B-MG	3.98	1	3.98	20.09	0.0029	
C-BT	0.0685	1	0.0685	0.3458	0.575	
AB	0.087	1	0.087	0.4397	0.5285	
AC	0.9506	1	0.9506	4.8	0.0645	
BC	0.002	1	0.002	0.0102	0.9223	
A ²	0.0594	1	0.0594	0.3	0.6009	Significant
B ²	0.7208	1	0.7208	3.64	0.098	
C ²	4.33	1	4.33	21.86	0.0023	
Residual	1.39	7	0.1979			
Lack of Fit	0.7383	3	0.2461	1.52	0.3384	Not significant
Pure Error	0.6472	4	0.1618			
Cor Total	12.51	16				

CG, calcium gluconate; MG, magnesium gluconate; BT, polypeptides.

Table S2 Analysis of variance for quadratic model for phycoerythrin concentration.

Source	Sum of Squares	df	Mean Square	F-value	p-value	Remark
Model	3444.89	9	382.77	8.32	0.0054	Significant
A-CG	20.54	1	20.54	0.4466	0.5254	
B-MG	5.78	1	5.78	0.1257	0.7334	
C-BT	625.16	1	625.16	13.59	0.0078	Significant
AB	139	1	139	3.02	0.1257	
AC	8.01	1	8.01	0.1741	0.689	
BC	0.1089	1	0.1089	0.0024	0.9626	
A ²	16.74	1	16.74	0.3639	0.5654	
B ²	103.63	1	103.63	2.25	0.1771	
C ²	2481.36	1	2481.36	53.94	0.0002	Significant
Residual	322	7	46			
Lack of Fit	96.21	3	32.07	0.5681	0.6649	Not significant
Pure Error	225.79	4	56.45			
Cor Total	3766.88	16				

CG, calcium gluconate; MG, magnesium gluconate; BT, polypeptides.

Table S3 Analysis of variance for quadratic model for polysaccharide concentration.

Source	Sum of Squares	df	Mean Square	F-value	p-value	Remark
Model	0.6249	9	0.0694	8.29	0.0054	Significant
A-CG	0.2016	1	0.2016	24.06	0.0017	Significant
B-MG	0.1431	1	0.1431	17.08	0.0044	Significant
C-BT	0.0221	1	0.0221	2.63	0.1488	
AB	0.002	1	0.002	0.2417	0.638	
AC	0.0484	1	0.0484	5.78	0.0472	Significant
BC	0.0625	1	0.0625	7.46	0.0293	Significant
A ²	0.0177	1	0.0177	2.11	0.1899	
B ²	0.0235	1	0.0235	2.81	0.1377	
C ²	0.0913	1	0.0913	10.9	0.0131	Significant
Residual	0.0587	7	0.0084			
Lack of Fit	0.038	3	0.0127	2.45	0.2036	Not significant
Pure Error	0.0207	4	0.0052			
Cor Total	0.6836	16				

CG, calcium gluconate; MG, magnesium gluconate; BT, polypeptides.

Table S4 Effect of phycoerythrin and polysaccharide contents in different exogenous substances.

Types	Concentration (g L ⁻¹)	Phycoerythrin content (mg g ⁻¹)	Polysaccharide content (g g ⁻¹)
CG	0	34.3±2.42	0.12±0.01
	2	43.6±1.25	0.19±0.008
	3	40.12±0.98	0.15±0.019
	4	30.67±2.7	0.16±0.013
	5	29.9±2.87	0.15±0.014
	6	30.17±2.97	0.15±0.008
MG	0	59.57±3.38	0.07±0.006
	10	39.52±1.14	0.2±0.1
	11	36.75±0.64	0.22±0.034
	12	54.67±2.99	0.17±0.008
	13	46.18±1.37	0.17±0.005
	14	43.85±5.68	0.22±0.015
BT	0	83.11±7.77	0.1±0.007
	0.5	90.32±6.12	0.09±0.005
	1	85.17±7.21	0.09±0.005
	1.5	75.09±5.23	0.1±0.003
	2	63.02±3.96	0.11±0.011
	2.5	71.19±4.5	0.12±0.004

CG, calcium gluconate; MG, magnesium gluconate; BT, polypeptides.