

Supplementary data

Enhanced Production of Photosynthetic Pigments and Various Metabolites and Lipids in the Cyanobacteria *Synechocystis* sp. PCC 7338 Culture in the Presence of Exogenous Glucose

YuJin Noh ^{1,†}, Hwanhui Lee^{1,†}, Myeongsun Kim¹, Seong-Joo Hong², Hookeun Lee³, Dong-Myung Kim⁴, Byung-Kwan Cho⁵, Choul-Gyun Lee², Hyung-Kyoon Choi^{1,*}

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¹ College of Pharmacy, Chung-Ang University, Seoul 06974, Republic of Korea; n5uuu@naver.com (Y.J.N.); hwanhui56@gmail.com (H.L.); myeongsunkim0242@gmail.com (M.K.)

² Department of Biological Engineering, Inha University, Incheon 22212, Republic of Korea; owlet77@gmail.com (S.J.H.); leecg@inha.ac.kr (C.G.L.)

³ College of Pharmacy, Gachon University, Incheon 13120, Republic of Korea; hkleee@gachon.ac.kr (H.L.)

⁴ Department of Chemical Engineering and Applied Chemistry, Chungnam National University, Daejeon 34134, Republic of Korea; dmkim@cnu.ac.kr (D.M.K.)

⁵ Department of Biological Sciences, KAIST, Daejeon 34141, Republic of Korea; bcho@kaist.ac.kr (B.K.C.)

* Correspondence: hykychoi@cau.ac.kr; Tel.: +82-2-820-5605

† These authors equally contribute to this work.

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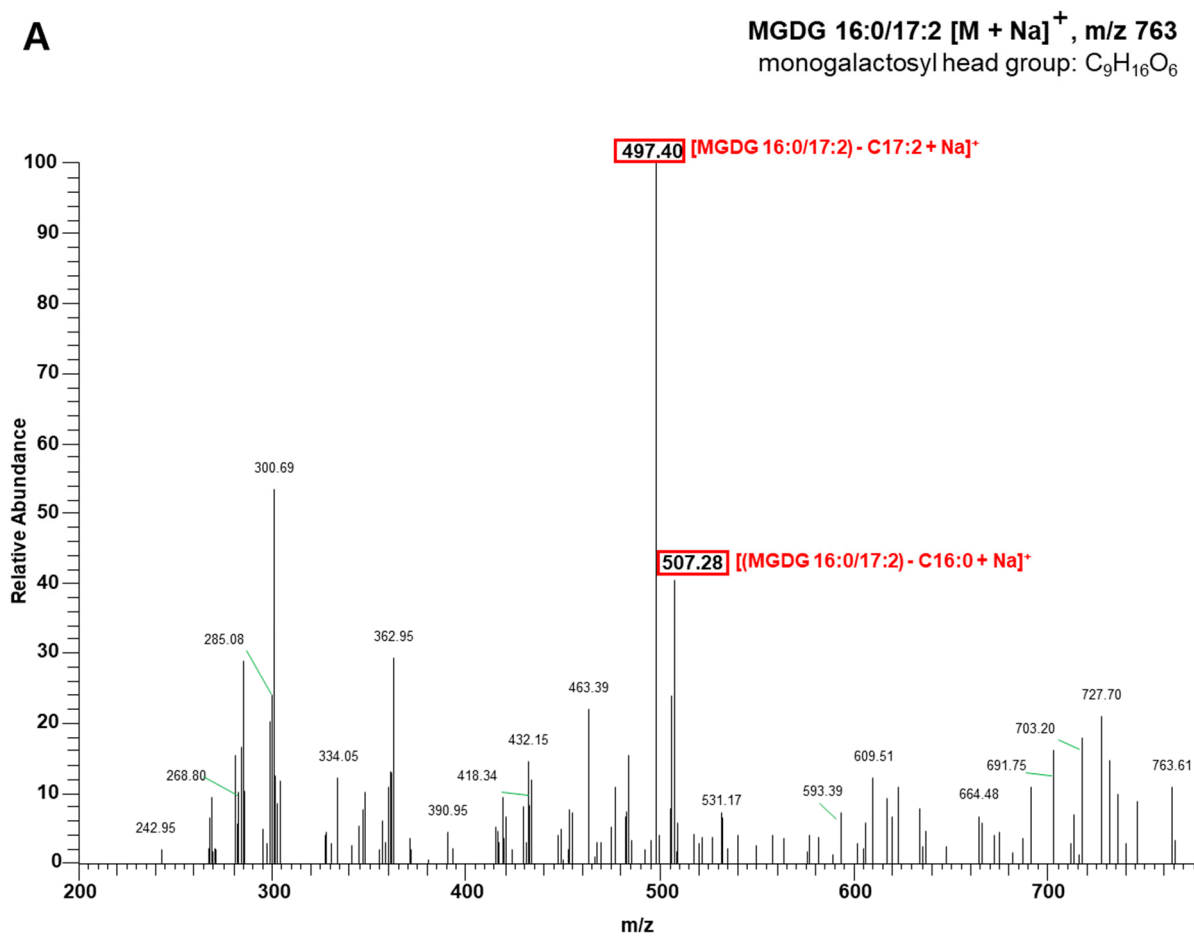
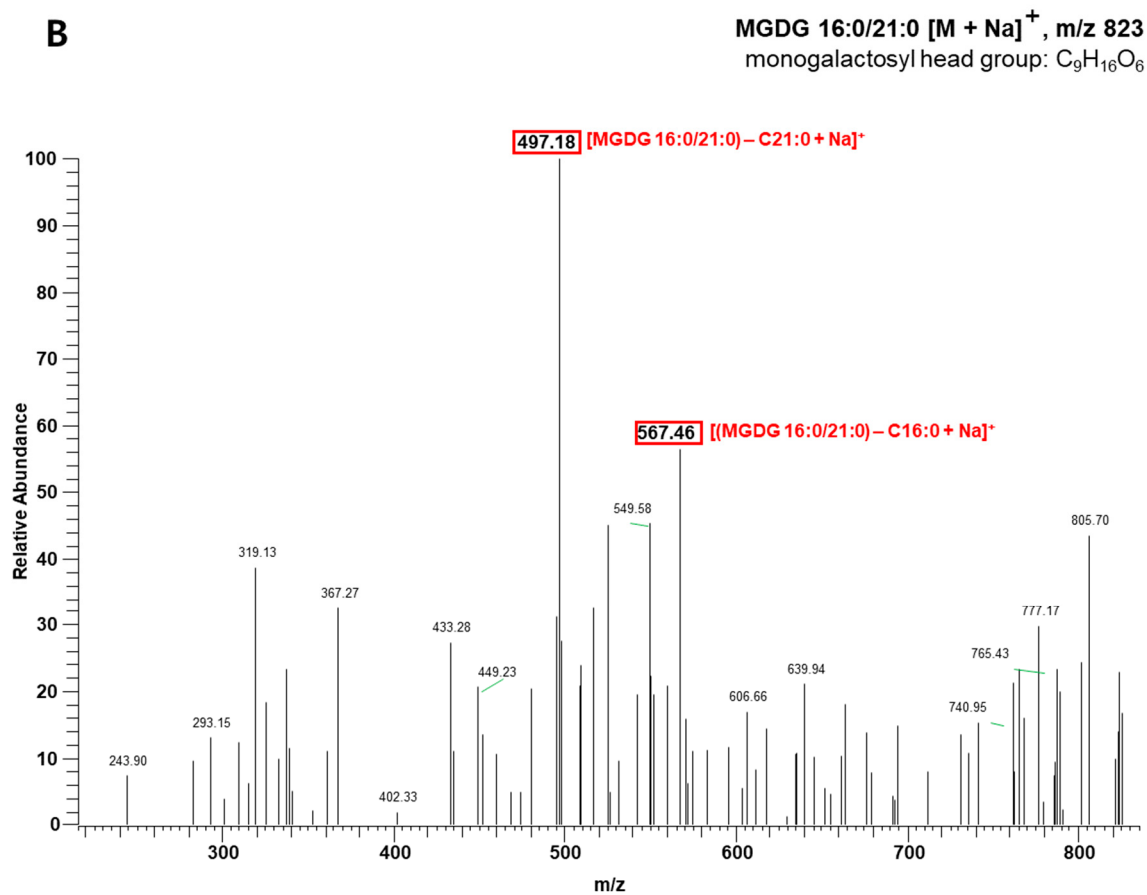
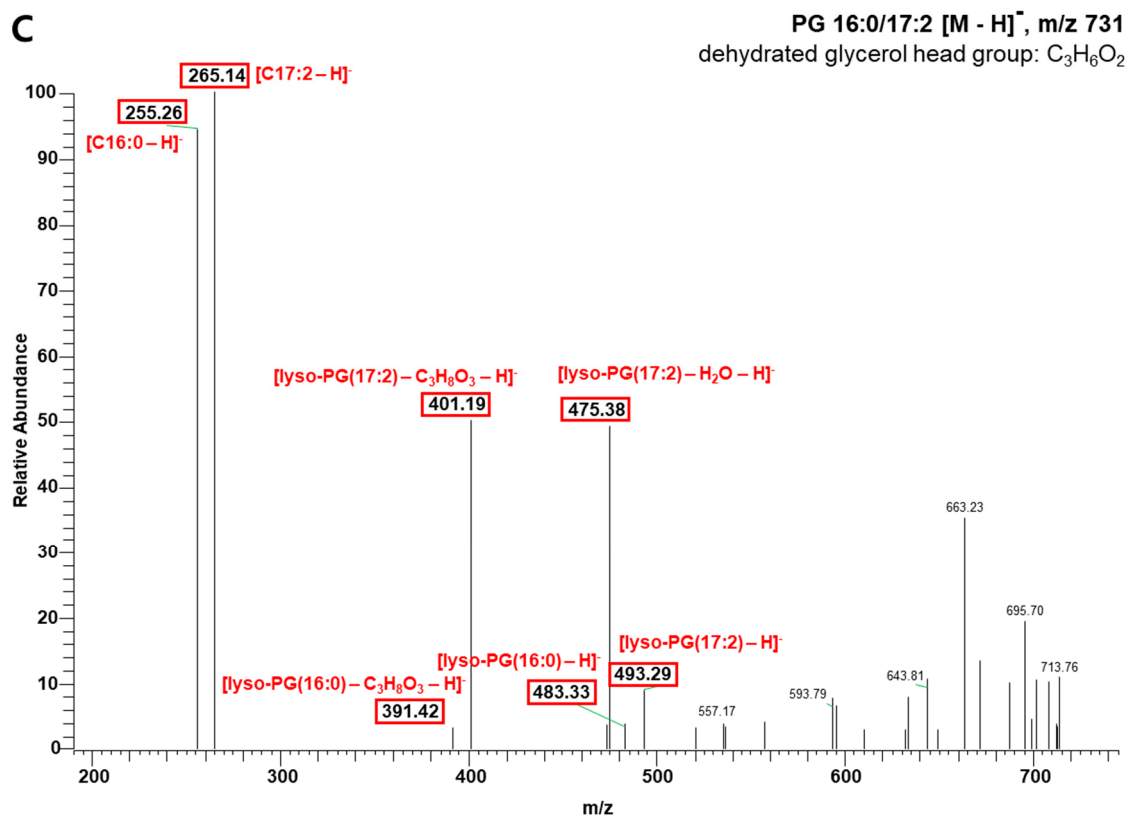
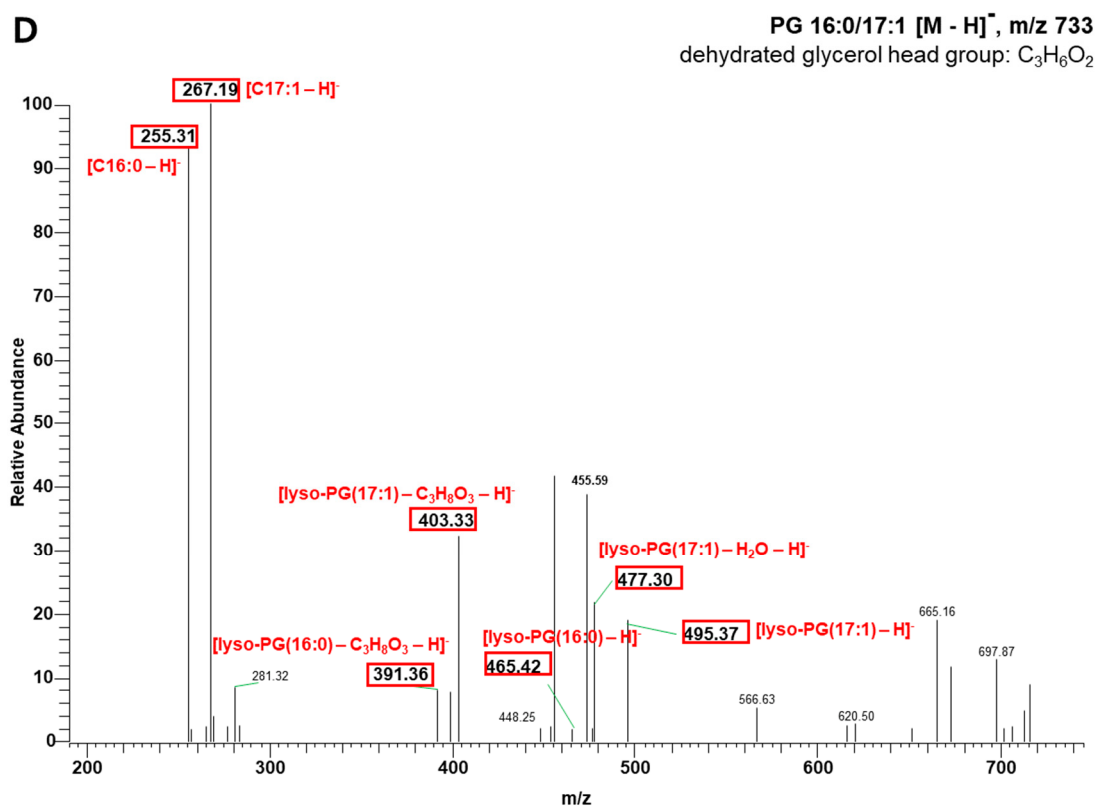
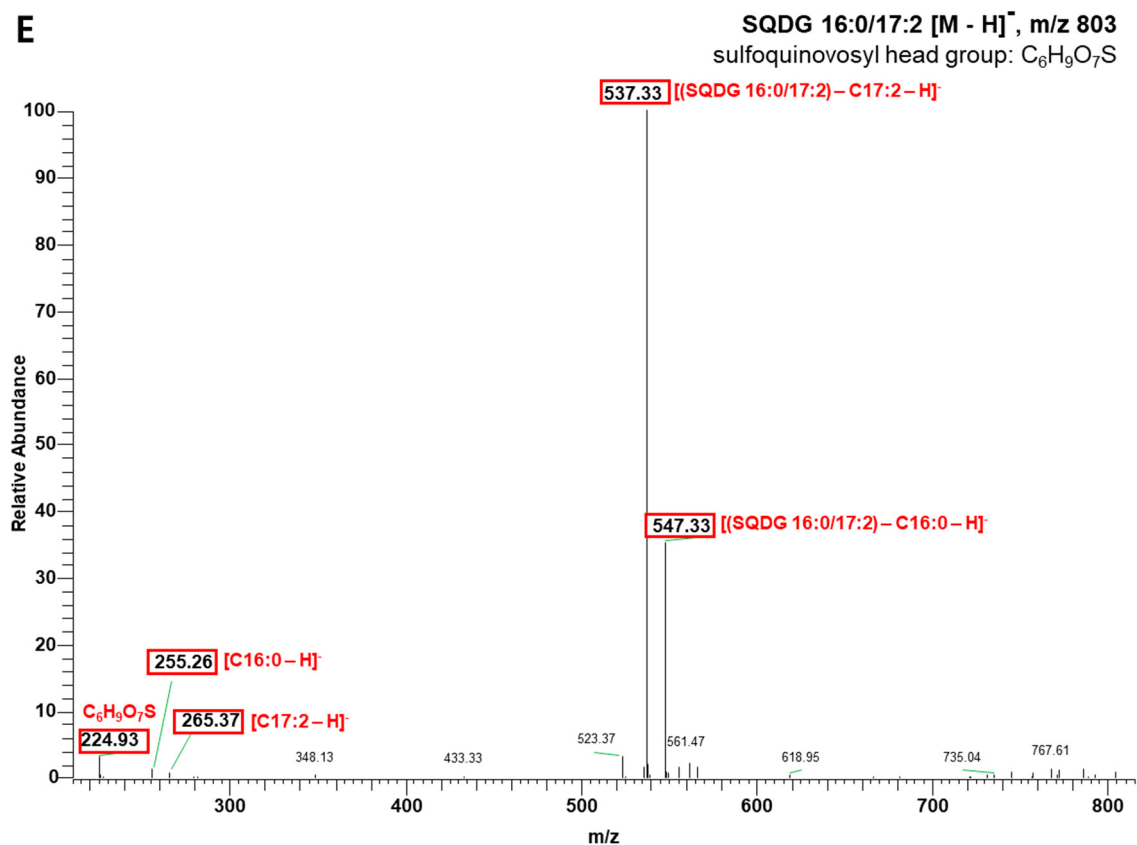


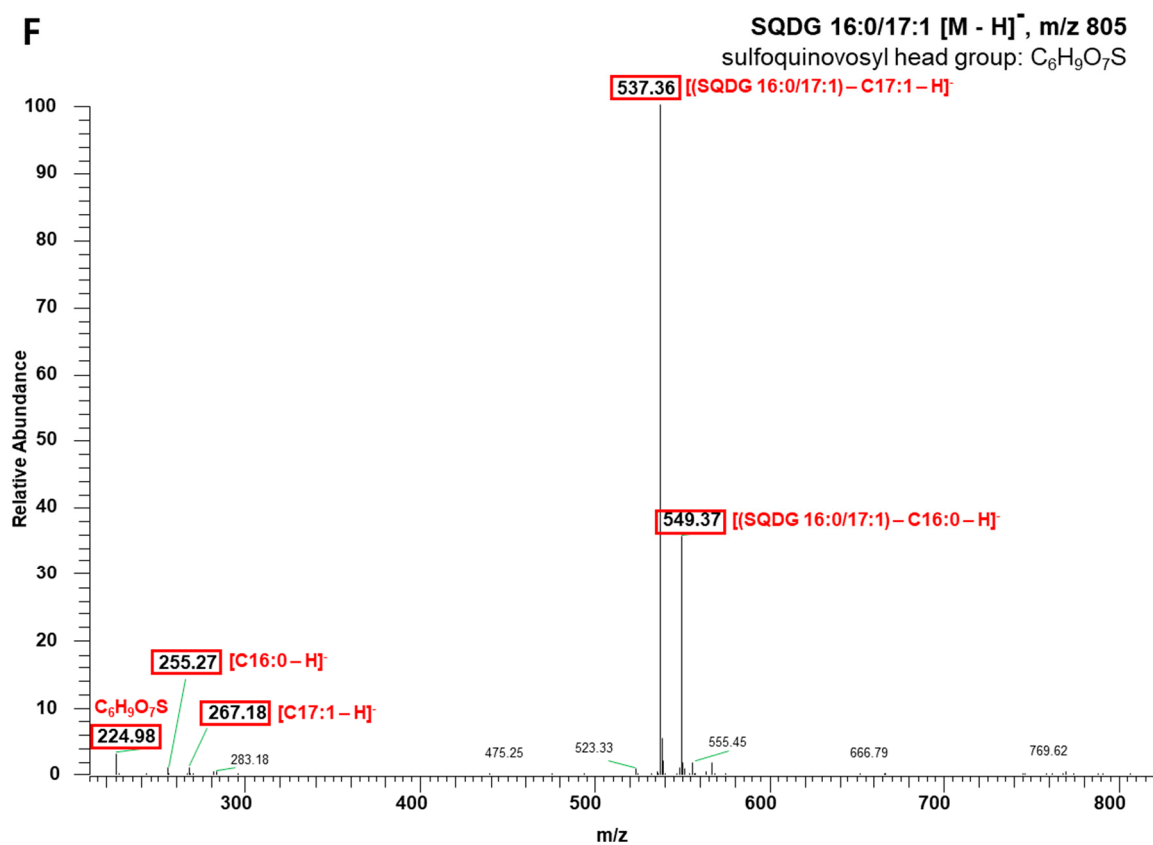
Figure S1. The MS/MS spectra of the identified nine intact lipid species (A–I) in *Synechocystis* sp. PCC 7338 matched to libraries (the authentic references, data base of LIPID MAPS, LipidBlast, and an in-house MS/MS library). The major precursor and fragment ions were indicated red characters. MGDG, monogalactosyldiacylglycerol; DGDG, digalactosyldiacylglycerol; PG, phosphatidylglycerol; SQDG, sulfoquinovosyldiacylglycerol.

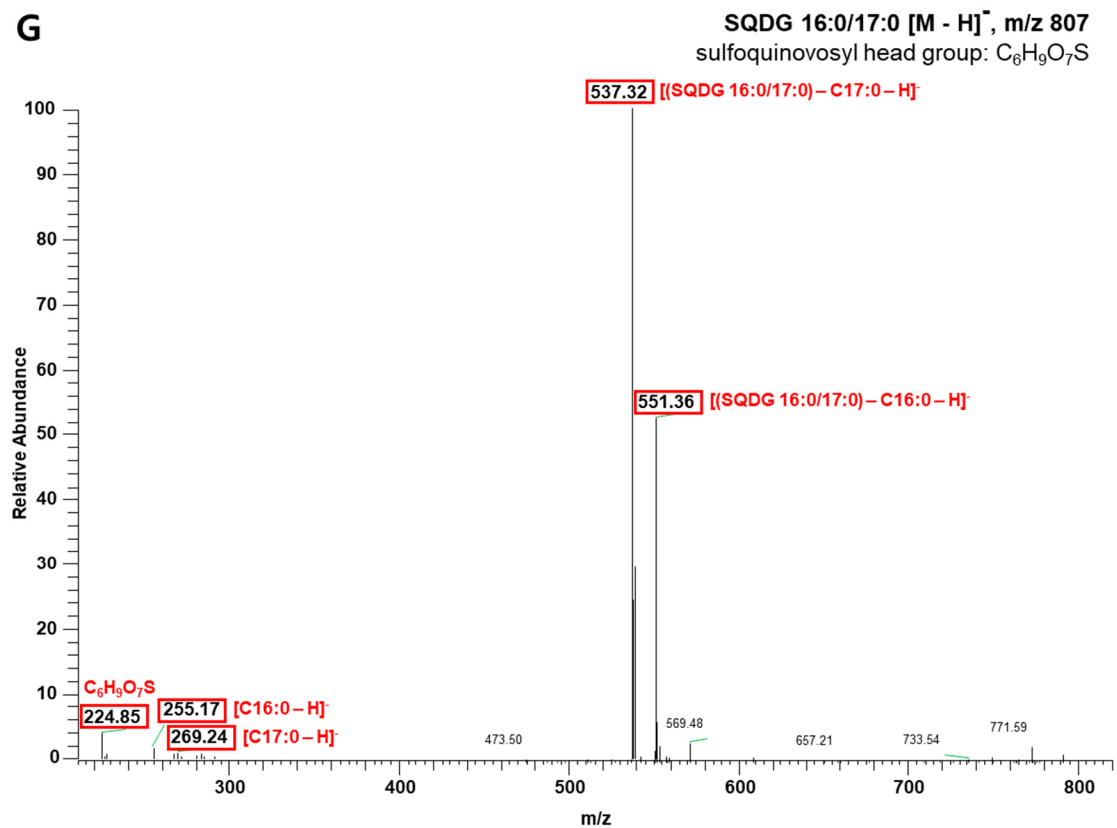


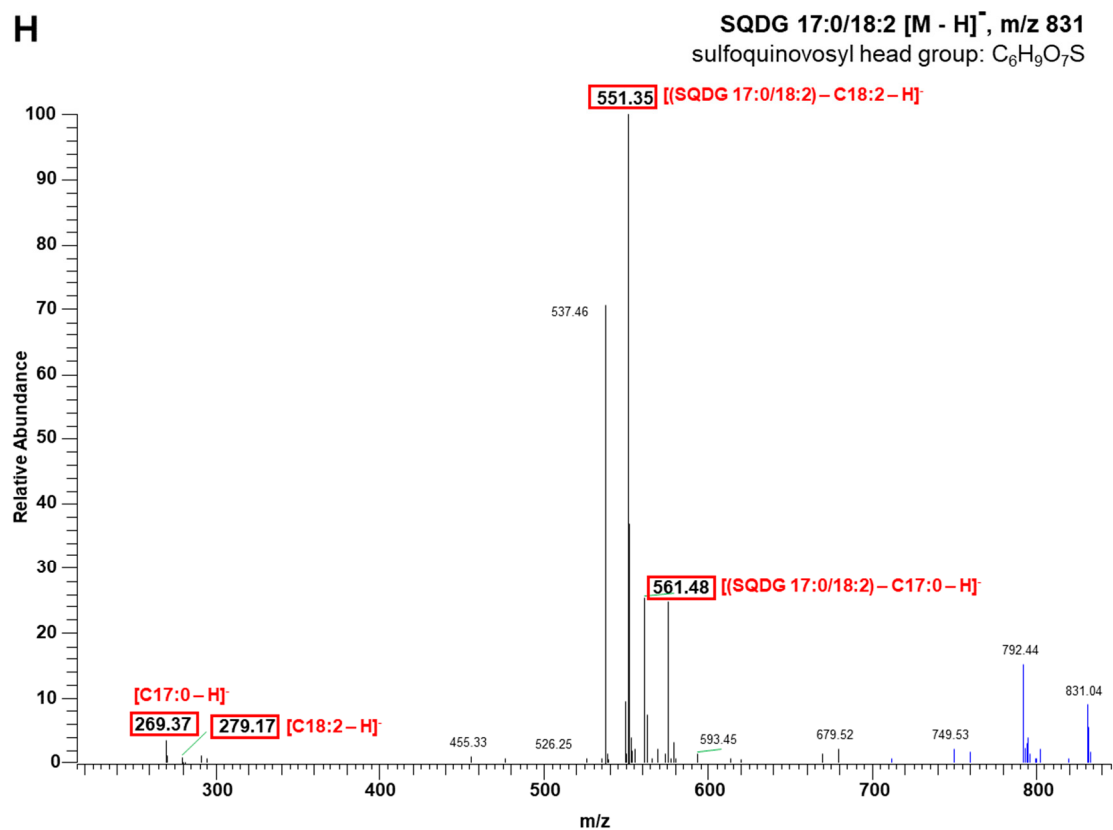


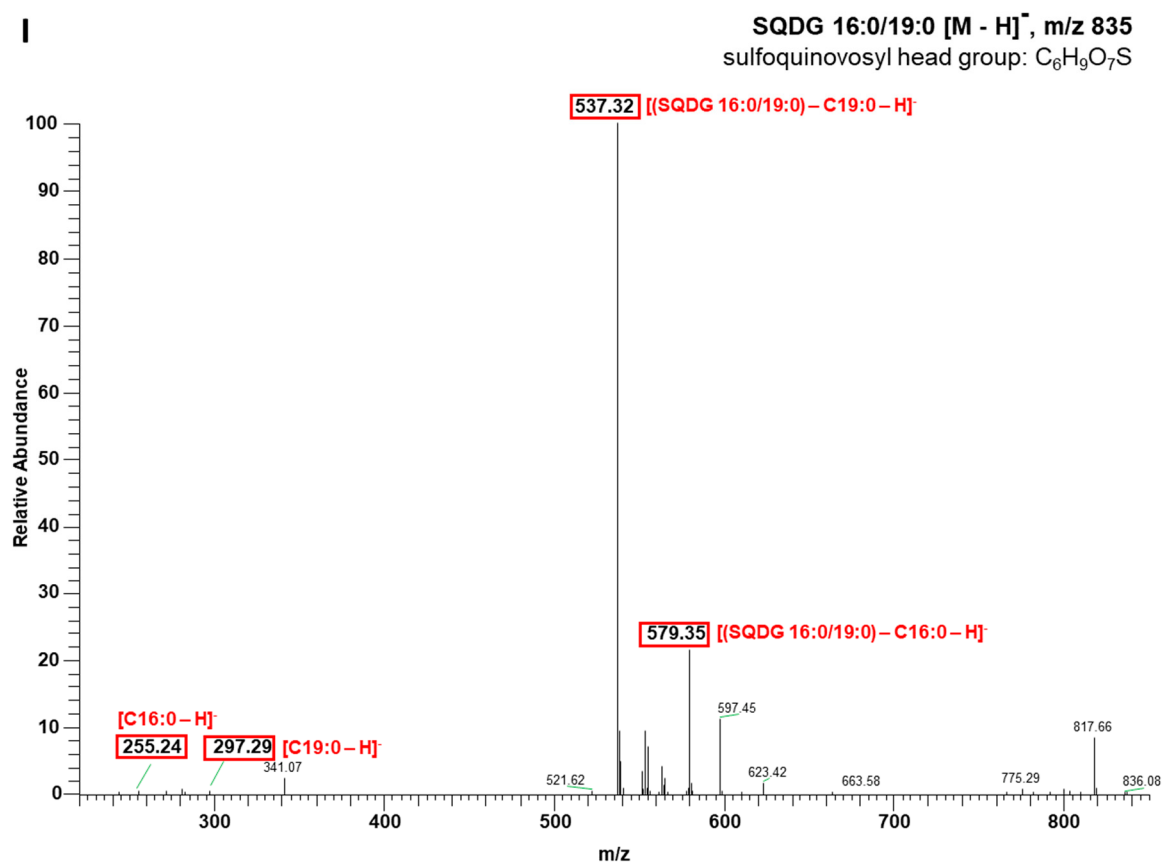












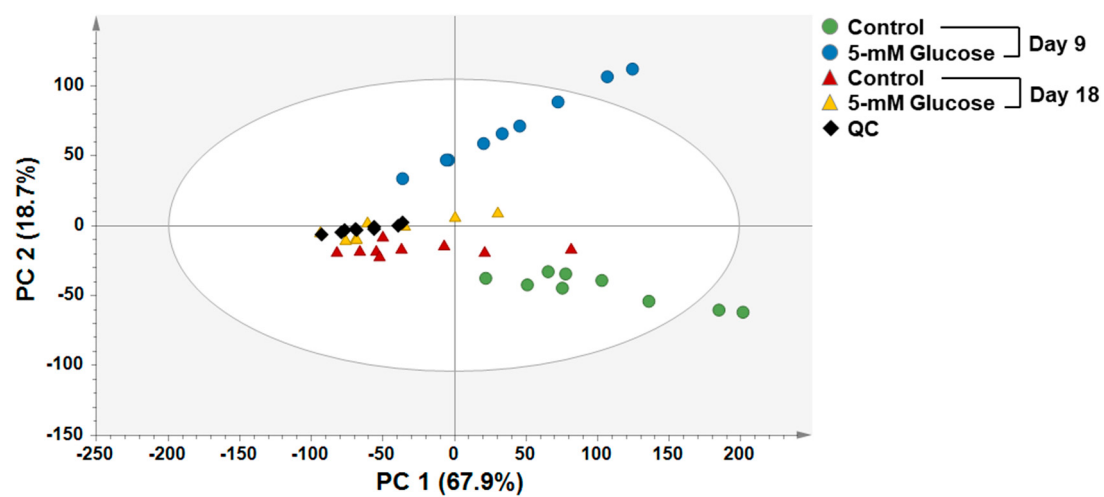


Figure S2. PCA-derived score plot of *Synechocystis* 7338 in the control and 5-mM exogenous glucose treatments with quality control (QC).

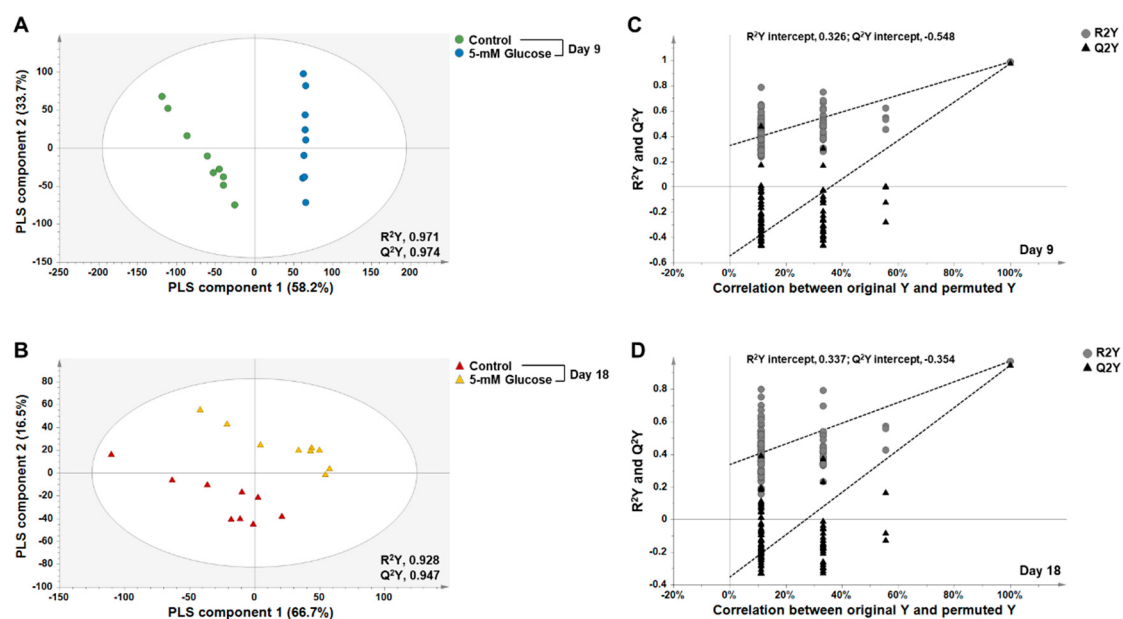


Figure S3. PLS-DA-derived score plots with samples from days 9 (A) and 18 (B) and diagram of permutation test from days 9 (C) and 18 (D) of *Synechocystis* 7338 in the control and 5-mM exogenous glucose treatments ($n = 9$, biological triplicates and experimental triplicates).

Table S1. List of metabolites identified in *Synechocystis* sp. PCC 7338 by GC-MS analysis.

No.	Compound	m/z	RT	Mass fragment (m/z)	TMS
Alcohols					
1	Glycerol	205	13.36	103, 117, 133, 205	3
2	Glycerol-3-phosphate	357	25.1	299, 315, 357 , 445	4
Amino acids					
3	Alanine	116	8.79	100, 116 , 190, 218	2
4	Aspartic acid	160	17.25	116, 117, 130, 160	2
		232	19.62	100, 202, 218, 232	3
			19.64		
5	Glutamic acid	246	21.99	128, 156, 246 , 348	3
6	Glycine	174	14.14	86, 174 , 248, 276	3
7	Pyroglutamic acid	156	19.56	133, 156 , 230, 258	2
8	Serine	132	12.87	103, 113, 132 , 159	2
Fatty acids					
9	Linoleic acid	337	33.76	81, 95, 129, 337	1
10	Linolenic acid	79	33.41	79 , 91, 129, 335	1
11	Oleic acid	339	33.89	117, 129, 145, 339	1
12	Palmitic acid	313	30.82	117, 129, 132, 313	1
13	Palmitoleic acid	311	30.41	117, 129, 145, 311	1
14	Stearic acid	341	34.36	117, 129, 132, 341	1
Glycerolipids					
15	1-Monopalmitin	371	39.87	129, 205, 371 , 459	2
16	Glycerol monosterate	399	42.68	129, 205, 399 , 487	2
Organic acids					
17	Isocitric acid	273	26.37	245, 273 , 319, 465	4
18	Lactic acid	117	7.69	117 , 133, 191, 219	2
19	Succinic acid	247	14.43	129, 133, 172, 247	2
Sugars					
20	Fructose	217	26.16	103, 204, 217 , 437	5
		103	27.55	103 , 217, 277, 307	6 (MeOX)
			27.35		
21	Glucosamine	203	29	131, 203 , 217, 304	6
22	Glucose	204	27.76	129, 191, 204 , 217	5
			29.52		
23	Glucose-6-phosphate	387	36.51	204, 299, 357, 387	6
24	Glucosylglycerol	204	36.7		
			34.62	103, 204 , 337, 361	6
25	Sucrose	361	36.19		
			40.52	103, 217, 361 , 437	8
Others					
26	Neophytadiene	68	26.73	68 , 82, 95, 123	0
27	Heptadecane	57	23.84	57 , 71, 85, 99	0

RT, retention time; TMS, trimethylsilylation; MeOX, methoxyamination; Bold character in mass fragment, the most intensive peak in a mass spectrum.