Identified metabolites of the ancestral and evolved strains by gas chromatography-mass spectrometry. Response ratios of metabolites having *P*-Value ≤ 0.05 are shown in bold. Metabolites having correlation coefficient ≥ 0.5 are underlined. Response ratios of metabolites having *P*-Value ≤ 0.05 and correlation coefficient ≥ 0.5 are shown in bold underline.

Metabolites	MG / MG_Gal	MG / MG_Adp	MG / MG_AdpGal	MG / MG_stat	MG_Gal / MG_AdpGal	MG_Adp / MG_AdpGal	MG_Adp / MG_stat	DH / DH_Gal	DH / DH_Adp	DH / DH_AdpGal	DH / DH_stat	DH_Gal / DH_AdpGal	DH_Adp / DH_AdpGal	DH_Adp / DH_stat
2-Aminoadipate (260)	1.26	1.08	0.50	1.03	0.40	0.46	0.96	0.78	1.56	0.99	0.59	1.27	0.64	0.38
2-Hydroxyglutarate (203,247)	1.38	0.69	0.91	1.24	**0.66**	1.33	1.81	1.34	**1.84**	1.41	1.53	1.05	0.77	0.83
2-Isopropylmalate (275)	0.99	0.63	0.59	1.33	0.60	0.94	2.12	0.95	0.75	**0.44**	0.75	**0.47**	0.59	1.00
2-Ketoisocaproate (216)	1.00	0.45	0.52	0.32	0.52	1.16	0.71	0.95	0.87	0.55	0.67	0.59	0.64	0.77
2-Methylcitrate (287)	0.52	0.54	0.53	0.99	1.03	0.99	1.85	0.35	0.72	**0.21**	0.78	0.59	**0.28**	1.08
2-Methylisocitrate (259)	3.02	0.75	3.02	1.21	1.00	**4.04**	1.62	2.64	0.69	1.25	0.53	0.47	1.80	0.77
4-Aminobutyrate (174)	2.29	1.44	2.60	0.96	1.14	**1.81**	0.66	**2.62**	0.44	**2.94**	0.83	1.12	**6.61**	1.87
5-Methyl-thioadenosine (236)	0.72	**0.43**	**0.57**	0.78	0.79	1.33	1.82	1.36	**0.68**	1.16	1.13	0.85	**1.69**	**1.66**
Adenine (264)	0.71	**0.47**	0.66	0.41	0.92	1.40	0.88	1.22	**0.53**	0.92	0.76	0.75	**1.75**	1.44
Adenosine (236)	1.10	1.05	1.50	2.09	1.36	1.42	1.99	0.84	1.35	2.70	1.06	3.20	1.99	0.78
a-Glycerophosphate (357)	0.97	0.66	0.85	0.55	0.88	1.30	0.84	0.99	**0.67**	0.99	0.91	1.00	**1.49**	**1.36**
a-Ketoglutarate (198)	0.54	0.20	0.73	0.15	1.34	3.65	0.78	1.41	**0.19**	2.03	**0.26**	1.45	**10.94**	1.41
Alanine (116)	0.67	0.55	0.73	0.54	1.08	1.33	1.00	1.58	**0.51**	1.01	0.89	0.64	**1.96**	**1.73**
Arabinose (217)	1.42	1.04	0.83	**1.57**	**0.59**	0.80	1.51	1.13	1.74	1.56	1.37	1.38	0.90	0.79
Arginine (256)	1.58	0.52	0.92	0.76	0.58	1.75	1.45	**1.58**	0.69	1.21	1.10	0.77	1.76	1.59
Asparagine (216)	0.65	**0.33**	0.53	**0.41**	0.83	1.62	1.25	1.16	**0.37**	0.66	0.81	0.57	1.79	2.19
b-Alanine (248)	1.80	0.81	1.13	1.39	0.63	1.39	1.71	1.01	1.08	1.23	1.23	1.21	1.13	1.13
Citrate (257)	1.06	0.52	**0.62**	1.25	**0.59**	1.20	**2.41**	1.24	1.01	1.11	0.77	0.89	1.10	0.76
Cystathionine (128)	0.91	**0.19**	0.28	0.61	0.31	1.44	**3.17**	0.87	0.35	0.54	1.41	0.62	1.54	4.07
DHAP (400)	0.88	0.75	0.87	0.82	0.98	1.16	1.09	1.70	0.51	1.98	0.83	1.16	3.91	1.65
Diaminopimelate (200,272)	1.33	0.57	1.03	0.47	0.77	1.81	0.83	1.13	1.01	1.62	1.50	1.43	1.60	1.48
Erythrose-4-P (357)	3.04	4.45	3.45	4.83	1.13	0.78	1.09	0.17	1.85	0.80	2.48	4.84	0.43	1.34
Fructose-6-P (315)	0.75	0.86	0.61	0.81	0.82	0.71	0.94	0.91	**0.38**	0.81	**0.56**	0.89	**2.15**	1.49
Fructose (307)	**0.66**	1.01	**0.53**	1.31	0.81	**0.52**	1.30	**0.45**	0.62	**0.46**	0.93	1.01	0.73	1.49

Identified metabolites of the ancestral and evolved strains by gas chromatography-mass spectrometry.

Fumarate (245)	2.38	0.75	1.98	0.47	0.83	2.64	0.63	2.58	0.51	3.68	0.88	1.43	7.28	1.74
Gluconate-6-P (387)	1.20	1.02	0.91	1.06	0.76	0.89	1.03	0.89	1.28	0.90	1.51	1.01	0.71	1.18
Gluconate (333)	3.22	1.24	2.32	1.21	0.72	1.87	0.98	1.09	1.18	1.97	1.63	1.81	1.67	1.38
Glucose (319)	1.47	2.03	0.35	0.55	0.24	0.17	0.27	0.85	0.70	0.70	0.80	0.82	0.99	1.13
Glucose-6-P (387)	0.77	0.74	0.68	1.13	0.88	0.91	1.52	0.86	0.56	0.74	0.62	0.86	1.30	1.10
Glucuronicacid (333)	1.12	0.17	0.71	1.71	0.63	4.09	9.83	3.07	1.99	3.04	1.43	0.99	1.53	0.72
Glutamate (230,246)	0.90	0.50	0.71	0.58	0.79	1.42	1.17	1.70	**0.55**	1.18	0.95	0.69	**2.12**	**1.71**
Glutamine (155)	0.93	0.91	0.90	0.72	0.98	0.99	0.79	1.34	0.92	1.18	1.07	0.88	1.29	1.16
Glycerate-2-P (299,315,459)	1.00	**0.58**	0.68	0.62	0.68	1.16	1.06	1.12	**0.65**	1.13	0.99	1.02	**1.74**	**1.52**
Glycerate (189,192)	1.56	1.17	1.20	0.91	0.77	1.03	0.78	1.36	0.66	0.99	0.76	0.73	1.48	1.14
Glycerate-3-P (227,299,459)	1.29	1.04	1.35	1.33	1.05	1.30	1.28	1.17	0.98	0.76	0.56	0.65	0.77	0.57
Glycine (174)	1.30	0.72	1.00	0.68	0.77	1.39	0.95	0.94	0.63	1.10	0.95	1.17	**1.74**	1.50
Isocitrate (245,319)	1.00	0.53	0.64	1.15	**0.64**	1.20	**2.18**	0.86	1.04	1.10	0.89	1.29	1.07	0.86
Isoleucine (158)	2.12	0.90	1.15	0.92	0.54	1.28	1.02	1.02	0.51	1.36	0.87	1.33	**2.67**	1.70
L,L-Cystathionine (218)	**0.38**	**0.39**	**0.37**	0.65	0.96	0.93	1.66	0.59	0.92	0.46	0.66	0.78	0.50	0.71
Lactate (191)	1.03	0.80	0.66	0.54	0.64	0.83	0.67	1.01	**0.61**	0.89	0.93	0.88	1.46	**1.52**
L-Aspartate (232)	0.93	1.05	0.95	0.85	1.02	0.90	0.81	1.26	0.75	1.08	0.90	0.85	1.44	1.20
L-Cysteine (220)	1.28	0.71	**0.54**	1.40	**0.42**	0.76	1.99	0.97	1.02	0.95	1.54	0.97	0.93	1.50
Leucine (158)	0.72	0.82	1.01	0.25	1.41	1.23	0.31	0.86	**0.07**	0.37	0.20	0.43	**5.37**	**2.93**
L-Homocysteine (234)	1.39	0.54	0.60	1.02	0.43	1.11	1.90	0.59	1.15	0.74	1.47	1.24	0.64	1.28
L-Homoserine (218)	3.62	1.27	2.12	0.52	0.59	1.68	0.41	0.58	2.69	5.84	2.72	**10.00**	2.17	1.01
Lysine (156)	0.50	0.36	0.37	1.43	0.73	1.01	3.95	2.69	**0.36**	0.84	1.20	0.31	**2.30**	**3.28**
Malate (245,307)	1.21	**0.51**	0.91	0.43	0.75	**1.78**	0.85	**1.92**	**0.45**	1.33	0.71	0.69	**2.94**	1.56
Maleicacid (245)	0.24	ND	0.51	ND	2.12	0.00	ND	1.27	ND	1.37	ND	1.08	0.00	ND
Methionine (176)	0.90	**0.49**	**0.58**	0.51	**0.64**	1.18	1.03	1.06	**0.58**	0.86	0.87	0.81	1.49	**1.51**
myo-Inositol (305)	1.01	0.67	1.53	0.87	1.52	2.29	1.31	2.73	4.60	6.82	4.52	2.49	1.48	0.98
Myo-Inositol-P (318)	1.08	1.13	1.20	1.28	1.11	1.06	1.13	0.40	0.74	1.85	0.67	**4.66**	2.52	0.92
N-Acetyl-Aspartate (274)	**2.31**	**3.71**	**11.68**	0.57	**5.05**	**3.15**	**0.15**	**4.82**	**19.18**	**61.43**	1.11	**12.73**	**3.20**	**0.06**
N-Acetyl-L-Serine (261)	3.06	1.02	0.89	2.48	**0.29**	0.87	2.42	1.20	1.47	1.18	1.25	0.98	0.80	0.85
o-acetyl-L-Homoserine (202)	1.69	0.83	0.56	0.45	0.33	0.68	0.54	1.15	0.90	1.08	1.29	0.94	1.20	1.44
o-acetyl-L-Serine (132)	1.55	0.72	ND	6.55	ND	ND	9.07	3.39	1.28	1.21	0.97	0.36	0.95	0.76
Ornithine (142)	1.03	**0.48**	0.68	0.55	0.66	1.40	1.15	1.06	0.73	1.06	0.90	1.00	1.45	1.24
Oroticacid (254)	1.84	2.75	5.63	1.29	3.06	2.04	0.47	1.96	**31.00**	**88.75**	1.25	**45.22**	**2.86**	**0.04**
Panthotenic acid (201)	2.28	1.11	0.97	1.43	**0.42**	0.87	1.29	2.35	0.93	1.10	1.11	**0.47**	1.18	1.19
PEP (369)	6.36	1.34	0.48	ND	0.08	0.36	ND	1.15	0.53	2.14	0.25	1.86	4.05	0.47

Identified metabolites of the ancestral and evolved strains by gas chromatography-mass spectrometry.

Phenylalanine (192)	2.46	1.10	2.30	1.88	0.94	2.09	1.70	1.31	1.21	2.20	1.88	1.68	1.82	1.56
Phosphate19.28 (299)	0.94	0.45	0.51	5.95	0.54	1.14	13.29	0.75	**14.23**	1.22	4.38	1.64	0.09	0.31
Proline (142)	1.27	0.53	1.28	0.63	1.01	**2.41**	1.18	1.71	0.62	1.41	1.27	0.83	**2.28**	**2.06**
Putrescine (142,174)	0.33	**0.41**	**0.43**	0.38	1.30	1.04	0.92	0.70	0.95	0.91	1.12	1.29	0.95	1.17
Pyruvate (174)	1.05	**0.47**	0.82	0.33	0.78	1.74	0.69	1.19	0.87	1.84	0.87	1.55	**2.11**	0.99
Ribitol	0.86	0.76	0.91	0.66	1.06	1.19	0.86	0.94	0.78	0.90	0.94	0.96	1.15	1.20
Ribose (217)	0.69	**0.39**	**0.47**	1.08	0.68	1.21	**2.80**	0.86	0.42	0.90	1.05	1.05	2.14	2.49
Ribose-5-P (315,299)	1.04	**0.55**	0.69	0.80	0.66	1.24	1.44	1.08	0.68	1.13	0.86	1.04	1.65	1.26
Salicylicacid (267)	1.03	**0.43**	0.72	0.40	0.70	1.67	0.92	1.51	**0.48**	1.21	0.57	0.80	**2.55**	1.19
Serine (204)	1.22	0.65	0.92	0.53	0.75	1.41	0.81	1.45	0.84	1.26	1.20	0.87	1.50	1.42
Shikimate (204)	0.42	0.51	**0.38**	0.11	0.91	0.75	0.22	0.52	0.55	0.37	0.11	0.72	0.68	0.21
Spermidine (144)	1.05	0.67	**0.60**	0.93	0.58	0.90	1.39	0.83	0.94	0.93	0.92	1.12	0.99	0.98
Spermine (144)	0.93	0.81	1.01	1.10	1.09	1.25	1.36	1.24	1.15	0.90	0.88	0.72	0.78	0.77
Succinate (247,409)	0.97	0.45	0.97	0.85	1.01	2.17	1.89	1.72	0.64	1.31	1.08	0.76	**2.03**	1.68
Sucrose (361)	0.85	0.71	0.78	0.78	0.92	1.10	1.10	1.06	0.77	0.89	0.77	0.84	1.15	1.00
Threonine (101)	**2.97**	0.92	1.62	0.71	0.54	1.75	0.77	0.60	0.70	4.26	2.33	**7.12**	6.07	3.32
Thymine (255)	**0.53**	0.63	0.66	0.47	1.23	1.03	0.74	**0.67**	**0.36**	**0.55**	**0.69**	0.82	1.51	**1.91**
Trehalose (361)	**2.39**	**2.00**	**6.63**	0.59	2.77	**3.32**	**0.29**	**2.01**	0.85	**3.97**	**0.53**	1.98	4.69	0.63
Tryptophan (202)	0.77	0.71	0.82	0.67	1.05	1.14	0.94	0.72	0.65	0.56	0.67	0.77	0.86	1.04
Tyrosine (218)	1.46	1.05	0.69	1.67	0.47	0.66	1.59	0.92	3.58	0.62	1.03	0.67	0.17	0.29
Unknown14.80 (228)	1.09	0.73	0.82	0.26	0.75	1.12	0.36	1.09	**0.32**	1.44	0.66	1.31	**4.46**	**2.06**
Unknown32.96 (361)	**183.88**	1.32	**231.43**	1.88	1.26	**175.44**	1.42	**196.78**	**4.59**	**255.29**	1.43	1.30	**55.62**	0.31
Uracil (255,241)	1.09	**0.46**	1.03	0.70	0.95	**2.24**	1.50	1.42	**0.49**	**1.88**	1.11	1.33	**3.83**	**2.27**
Urea (189)	0.60	0.06	0.17	0.06	0.29	2.81	0.99	1.43	0.30	0.25	0.44	0.18	0.84	1.46
Valine (144)	0.36	0.66	**0.53**	0.53	1.47	0.80	0.81	0.99	**0.54**	**0.44**	0.64	**0.44**	0.81	1.19