

Table S4. Compiled intracellular metabolome data for *Phaeobacter inhibens* DSM 17395 during growth with 0.8 mM ammonium (see

Metabolites	<i>n</i> -Fold change in metabolite abundance (relative to 30 h)							
	15 h	20 h	25 h	40 h	50 h	60 h	75 h	90 h
Metabolites with nitrogen								
Amino acids and derivatives								
Alanine	3.34 ± 0.54	2.44 ± 0.44	1.10 ± 0.21	1.11 ± 0.23	0.92 ± 0.19	0.47 ± 0.17	0.02 ± 0.01	0.02 ± 0
Aspartate	5.78 ± 0.91	5.78 ± 0.79	0.55 ± 0.06	1.15 ± 0.14	1.65 ± 0.29	0.50 ± 0.15	n.d.	n.d.
β-Alanine	3.35 ± 0.53	3.00 ± 0.34	1.57 ± 0.19	0.97 ± 0.10	0.44 ± 0.07	0.15 ± 0.05	n.d.	n.d.
Glutamate	1.89 ± 0.20	1.84 ± 0.13	0.85 ± 0.09	1.21 ± 0.05	0.95 ± 0.08	0.33 ± 0.08	0.01 ± 0	0.00 ± 0
Glycine	1.63 ± 0.09	1.05 ± 0.06	1.32 ± 0.11	1.07 ± 0.07	0.37 ± 0.06	0.09 ± 0.03	0.00 ± 0	0.00 ± 0
Homoserine	1.70 ± 0.22	1.33 ± 0.14	0.91 ± 0.07	0.84 ± 0.06	0.94 ± 0.14	0.95 ± 0.09	1.25 ± 0.10	1.61 ± 0.15
Isoleucine	6.79 ± 1.35	9.81 ± 2.22	1.75 ± 0.42	1.39 ± 0.31	0.61 ± 0.11	0.02 ± 0.01	0.02 ± 0.01	0.06 ± 0.02
Leucine	14.8 ± 4.8	19.7 ± 7.2	3.50 ± 1.74	2.00 ± 1.09	0.74 ± 0.25	0.26 ± 0.10	0.91 ± 0.74	0.47 ± 0.15
Methionine	6.71 ± 0.77	3.96 ± 0.41	1.85 ± 0.20	1.46 ± 0.16	0.63 ± 0.10	0.52 ± 0.15	n.d.	n.d.
<i>N</i> -Acetyl-glutamate	1.48 ± 0.47	1.63 ± 0.44	1.06 ± 0.21	1.43 ± 0.25	0.77 ± 0.18	0.38 ± 0.09	n.d.	n.d.
<i>N,N</i> -Dimethylglycine	0.40 ± 0.06	0.44 ± 0.06	0.76 ± 0.11	1.38 ± 0.20	2.00 ± 0.28	0.63 ± 0.17	0.14 ± 0.04	n.d.
<i>O</i> -Acetyl-serine	14.3 ± 2.6	30.9 ± 3.2	1.67 ± 0.27	1.04 ± 0.09	n.d.	n.d.	n.d.	n.d.
Phenylalanine	2.62 ± 0.48	2.05 ± 0.17	1.33 ± 0.12	4.36 ± 0.35	0.48 ± 0.04	0.07 ± 0.02	n.d.	n.d.
Proline	3.28 ± 0.63	3.34 ± 0.76	1.26 ± 0.20	1.00 ± 0.25	0.53 ± 0.09	0.31 ± 0.07	0.02 ± 0	0.04 ± 0.01
Pyroglutamate	2.40 ± 0.29	2.14 ± 0.26	1.41 ± 0.15	1.08 ± 0.12	0.61 ± 0.10	0.25 ± 0.05	0.01 ± 0	0.01 ± 0
Serine	2.44 ± 0.53	2.35 ± 0.32	2.06 ± 0.19	1.47 ± 0.28	1.21 ± 0.17	0.39 ± 0.07	0.24 ± 0.14	n.d.
2-Methyl-serine	1.09 ± 0.11	1.02 ± 0.11	1.20 ± 0.13	0.97 ± 0.14	1.19 ± 0.15	1.19 ± 0.21	n.d.	n.d.
Threonine	3.76 ± 0.26	2.92 ± 0.19	1.27 ± 0.09	1.28 ± 0.09	0.61 ± 0.06	0.33 ± 0.07	n.d.	n.d.
Valine	7.33 ± 0.76	4.37 ± 0.67	1.46 ± 0.12	0.86 ± 0.05	0.32 ± 0.02	0.13 ± 0.04	0.03 ± 0	0.06 ± 0
Biogenic amines and dipeptides								
Glycyl-glycine	18.7 ± 2.3	10.8 ± 2.0	0.84 ± 0.17	3.17 ± 0.27	1.15 ± 0.24	0.20 ± 0.06	n.d.	n.d.
Putrescine	11.4 ± 1.7	13.4 ± 1.0	1.61 ± 0.19	1.84 ± 0.11	0.58 ± 0.10	0.75 ± 0.18	n.d.	n.d.
Nucleotides								
Cytosine	17.2 ± 5.8	12.8 ± 6.0	0.92 ± 0.18	1.29 ± 0.25	13.3 ± 5.9	n.d.	n.d.	n.d.
Thymine	3.57 ± 0.90	4.45 ± 1.15	1.33 ± 0.33	1.17 ± 0.33	0.73 ± 0.23	0.24 ± 0.06	n.d.	n.d.
Uracil	3.67 ± 1.22	3.23 ± 1.15	1.09 ± 0.38	1.02 ± 0.39	0.55 ± 0.25	0.28 ± 0.11	0.37	n.d.
Amino alcohols								
Diethanolamine	5.50 ± 1.40	6.77 ± 1.14	1.70 ± 0.29	1.12 ± 0.16	0.99 ± 0.16	0.61 ± 0.15	n.d.	n.d.
Ethanolamine	1.31 ± 0.15	0.76 ± 0.09	0.81 ± 0.22	0.74 ± 0.09	0.70 ± 0.11	0.39 ± 0.08	0.05 ± 0.01	0.07 ± 0.02
Carboxylates (and derivatives)								
3-Aminoisobutanoate	4.20 ± 0.53	4.73 ± 0.46	1.49 ± 0.16	0.83 ± 0.09	0.54 ± 0.06	0.43 ± 0.08	n.d.	n.d.
4-Aminobutanoate	9.28 ± 1.82	7.23 ± 0.99	1.37 ± 0.20	1.23 ± 0.17	n.d.	n.d.	n.d.	n.d.
5-Aminopentanoate	1.61 ± 0.20	1.54 ± 0.20	0.76 ± 0.09	3.38 ± 0.42	1.31 ± 0.21	0.98 ± 0.35	n.d.	n.d.
Iminodiacetate	4.30 ± 0.73	2.03 ± 1.12	2.67 ± 0.30	0.40 ± 0.04	0.21 ± 0.03	0.06	n.d.	n.d.
Nicotinate	1.39 ± 0.13	1.39 ± 0.18	1.13 ± 0.15	5.60 ± 0.81	2.84 ± 0.33	0.77 ± 0.11	n.d.	n.d.
Nicotinamide	2.52 ± 0.86	2.59 ± 0.90	0.77 ± 0.10	0.63 ± 0.09	2.18 ± 0.70	1.36 ± 0.42	n.d.	n.d.
Sugars								
<i>N</i> -Acetylglucosamine	1.74 ± 0.17	1.63 ± 0.19	2.65 ± 0.62	1.07 ± 0.08	0.75 ± 0.05	n.d.	n.d.	n.d.
Metabolites without nitrogen								
Glycolysis (ED and EMP pathway)								
Glucose	0.99 ± 0.06	0.88 ± 0.06	1.48 ± 0.12	0.56 ± 0.03	0.30 ± 0.02	0.20 ± 0.02	0.06 ± 0.01	0.04 ± 0
Hexose-6-phosphate	n.d.	0.11 ± 0.04	0.74 ± 0.26	0.54 ± 0.18	n.d.	n.d.	n.d.	n.d.
Glucono-1,5-lactone	0.40 ± 0.08	0.37 ± 0.04	2.06 ± 0.30	0.26 ± 0.03	0.19 ± 0.02	0.18 ± 0.02	0.02 ± 0	n.d.
2-Keto-3-deoxy-gluconate (KDG)	0.93 ± 0.10	0.52 ± 0.06	2.05 ± 0.17	1.44 ± 0.14	0.30 ± 0.05	0.16 ± 0.03	n.d.	n.d.
Dihydroxyacetone-phosphate	0.85 ± 0.15	n.d.	1.08 ± 0.05	0.69 ± 0.04	0.41 ± 0.09	n.d.	n.d.	n.d.
1,3-Dihydroxyacetone	1.02 ± 0.14	0.93 ± 0.15	1.52 ± 0.21	0.84 ± 0.11	0.65 ± 0.10	0.54 ± 0.07	n.d.	n.d.
Fructose	0.88 ± 0.14	1.40 ± 0.15	1.49 ± 0.10	0.64 ± 0.14	0.35 ± 0.02	0.32 ± 0.03	0.12 ± 0.01	n.d.
Fructose-1-phosphate	n.d.	0.16 ± 0.06	0.76 ± 0.27	0.50 ± 0.16	n.d.	n.d.	n.d.	n.d.
Fructose-6-phosphate	n.d.	0.86	0.95 ± 0.12	0.55 ± 0.07	n.d.	n.d.	n.d.	n.d.
3-Phosphoglycerate	0.29 ± 0.03	0.20 ± 0.03	0.71 ± 0.13	0.34 ± 0.03	0.53 ± 0.14	0.19 ± 0.09	n.d.	n.d.
2-Phosphoglycerate	1.19 ± 0.13	0.99 ± 0.07	1.11 ± 0.09	0.82 ± 0.05	0.81 ± 0.09	n.d.	n.d.	n.d.
Phosphoenolpyruvate	1.50 ± 0.13	1.26 ± 0.09	1.32 ± 0.12	0.84 ± 0.05	0.62 ± 0.07	n.d.	n.d.	n.d.
Pyruvate	0.81 ± 0.15	0.39 ± 0.04	0.89 ± 0.13	0.94 ± 0.09	0.39 ± 0.07	0.14 ± 0.02	0.12 ± 0.02	0.18 ± 0.02
TCA cycle								
Citrate	0.90 ± 0.29	0.31 ± 0.10	0.93 ± 0.16	0.31 ± 0.05	0.43 ± 0.11	0.52 ± 0.18	0.41 ± 0.14	n.d.
2-Oxoglutarate	0.99 ± 0.13	0.68 ± 0.04	1.53 ± 0.10	1.35 ± 0.10	0.48 ± 0.05	0.31 ± 0.03	n.d.	n.d.
Succinate	2.08 ± 0.27	2.41 ± 0.42	2.30 ± 0.39	1.43 ± 0.23	0.77 ± 0.14	0.29 ± 0.06	0.02 ± 0.01	0.09 ± 0.02
Fumarate	2.38 ± 0.35	2.36 ± 0.43	1.63 ± 0.22	1.43 ± 0.25	0.88 ± 0.14	0.30 ± 0.05	0.12 ± 0.02	0.14 ± 0.02
Malate	2.19 ± 0.28	1.28 ± 0.14	2.13 ± 0.20	1.75 ± 0.21	0.47 ± 0.06	0.12 ± 0.02	n.d.	n.d.
Phospholipids								
Glycerol-3-phosphate	0.65 ± 0.08	0.21 ± 0.02	0.81 ± 0.07	0.69 ± 0.06	0.38 ± 0.04	0.11 ± 0.02	n.d.	n.d.
Glycerophosphoglycerol	0.35 ± 0.16	0.16 ± 0.04	0.39 ± 0.09	1.30 ± 0.28	0.82 ± 0.43	n.d.	n.d.	n.d.
Octanoate (C _{8:0})	1.04 ± 0.34	0.53 ± 0.19	0.69 ± 0.24	0.58 ± 0.20	0.71 ± 0.23	0.74 ± 0.25	0.70 ± 0.24	0.83 ± 0.30
3-Hydroxydecanoate (C _{10:0, 3-OH})	1.22 ± 0.15	0.86 ± 0.12	0.93 ± 0.14	0.82 ± 0.11	0.84 ± 0.15	0.65 ± 0.12	0.46 ± 0.07	0.56 ± 0.09
Dodecanoate (C _{12:0})	1.33 ± 0.17	1.08 ± 0.16	1.01 ± 0.14	1.10 ± 0.28	0.97 ± 0.13	1.00 ± 0.14	1.07 ± 0.14	1.45 ± 0.18
Tetradecanoate (C _{14:0})	1.34 ± 0.12	1.39 ± 0.12	1.29 ± 0.16	1.07 ± 0.20	0.71 ± 0.10	0.71 ± 0.08	0.63 ± 0.08	1.02 ± 0.07
Hexadecanoate (C _{16:0})	1.30 ± 0.27	1.62 ± 0.33	1.48 ± 0.37	1.04 ± 0.22	0.54 ± 0.21	0.66 ± 0.24	0.74 ± 0.14	1.31 ± 0.26
Octadecanoate (C _{18:0})	0.87 ± 0.20	1.00 ± 0.20	1.30 ± 0.31	1.03 ± 0.16	0.50 ± 0.28	0.39 ± 0.16	0.53 ± 0.11	1.13 ± 0.30
Octadecenoate (C _{18:1})	1.27 ± 0.21	0.95 ± 0.20	1.00 ± 0.20	0.72 ± 0.12	0.75 ± 0.16	0.71 ± 0.18	n.d.	n.d.

Table S4 continued

Metabolites	<i>n</i> -Fold change in metabolite abundance (relative to 30 h)							
	15 h	20 h	25 h	40 h	50 h	60 h	75 h	90 h
Carboxylates								
2-Hydroxybutanoate	1.39 ± 0.12	1.17 ± 0.07	1.09 ± 0.11	0.95 ± 0.07	0.82 ± 0.10	0.70 ± 0.07	0.80 ± 0.10	1.03 ± 0.10
3-Hydroxybutanoate	0.16 ± 0.02	0.18 ± 0.03	0.89 ± 0.08	1.08 ± 0.10	3.06 ± 0.31	3.77 ± 0.41	0.12 ± 0.02	0.07 ± 0.01
4-Oxobutanoate	1.43 ± 0.20	1.29 ± 0.17	1.18 ± 0.16	0.99 ± 0.14	0.68 ± 0.09	0.51 ± 0.08	n.d.	n.d.
Benzoate	1.24 ± 0.25	1.03 ± 0.21	1.22 ± 0.26	0.85 ± 0.16	0.97 ± 0.17	0.61 ± 0.11	0.75 ± 0.12	0.94 ± 0.14
Erythronate	1.02 ± 0.10	1.35 ± 0.15	1.40 ± 0.12	0.62 ± 0.05	0.38 ± 0.04	0.13 ± 0.01	n.d.	n.d.
Glycerate	0.66 ± 0.10	0.61 ± 0.10	0.70 ± 0.11	0.52 ± 0.07	2.01 ± 0.38	2.51 ± 0.54	0.34 ± 0.04	0.48 ± 0.07
2-Hydroxyglutarate	0.66 ± 0.08	0.45 ± 0.04	1.50 ± 0.17	1.41 ± 0.14	0.38 ± 0.05	0.33 ± 0.08	n.d.	n.d.
Lactate	0.89 ± 0.22	0.63 ± 0.15	1.00 ± 0.31	1.15 ± 0.35	0.41 ± 0.13	0.50 ± 0.21	0.33 ± 0.10	0.47 ± 0.10
Malonate	1.07 ± 0.18	1.32 ± 0.20	1.24 ± 0.20	1.12 ± 0.19	0.73 ± 0.11	0.60 ± 0.09	0.76 ± 0.10	0.96 ± 0.13
2-Methylmalate	0.89 ± 0.11	0.88 ± 0.12	0.75 ± 0.09	0.81 ± 0.10	0.57 ± 0.07	0.30 ± 0.03	0.21 ± 0.03	n.d.
Succinate methylester	2.07 ± 0.23	2.19 ± 0.34	1.27 ± 0.19	1.04 ± 0.17	1.07 ± 0.13	1.03 ± 0.13	1.31 ± 0.13	1.69 ± 0.17
Tartrate	4.05 ± 0.49	13.7 ± 1.3	4.61 ± 0.53	1.27 ± 0.10	0.17 ± 0.02	0.05 ± 0	n.d.	n.d.
Threonate	2.76 ± 0.42	5.08 ± 0.55	1.82 ± 0.16	0.97 ± 0.08	0.30 ± 0.02	n.d.	n.d.	n.d.
Toluate	1.62 ± 0.13	1.63 ± 0.17	1.20 ± 0.12	0.93 ± 0.09	0.83 ± 0.08	0.48 ± 0.06	0.35 ± 0.06	0.57 ± 0.06
Sugars								
1,6-Anhydroglucose	2.25 ± 0.24	1.98 ± 0.23	2.22 ± 0.31	1.06 ± 0.12	0.19 ± 0.03	n.d.	n.d.	0.61 ± 0.13
6-Deoxymannose	7.36 ± 0.38	11.4 ± 1.0	1.31 ± 0.08	1.51 ± 0.13	0.71 ± 0.05	0.68 ± 0.10	0.47 ± 0.03	0.74 ± 0.09
Arabinose	0.63 ± 0.04	0.75 ± 0.04	1.60 ± 0.09	0.78 ± 0.04	0.33 ± 0.02	0.20 ± 0.01	n.d.	n.d.
Erythrose/threose	0.60 ± 0.12	0.70 ± 0.16	0.92 ± 0.21	0.88 ± 0.17	0.59 ± 0.12	0.53 ± 0.08	0.53 ± 0.10	0.66 ± 0.12
Galactarate	1.05 ± 0.26	2.19 ± 0.53	1.81 ± 0.27	0.96 ± 0.08	0.55 ± 0.09	n.d.	n.d.	n.d.
Gluconate	0.41 ± 0.09	0.47 ± 0.11	1.53 ± 0.18	0.48 ± 0.03	0.20 ± 0.07	0.10 ± 0.04	0.01 ± 0	n.d.
Glucosheptonate-1,4-lactone	0.89 ± 0.06	0.91 ± 0.15	1.22 ± 0.09	0.98 ± 0.08	0.49 ± 0.08	n.d.	n.d.	n.d.
Gluconate-1,4-lactone	1.19 ± 0.40	0.64 ± 0.24	2.90 ± 0.90	0.50 ± 0.17	0.55 ± 0.17	1.40 ± 0.52	0.45 ± 0.17	0.24 ± 0.07
Glucuronate-3,6-lactone	1.68 ± 0.33	6.12 ± 1.56	2.03 ± 0.18	1.01 ± 0.08	0.08 ± 0.02	0.08	n.d.	n.d.
Ribose/xylose	1.02 ± 0.09	0.93 ± 0.08	1.00 ± 0.08	0.87 ± 0.06	0.80 ± 0.06	0.68 ± 0.05	0.54 ± 0.07	0.36 ± 0.06
Ribose-/xylose-5-phosphate	1.10 ± 0.26	0.64 ± 0.14	0.94 ± 0.17	0.94 ± 0.15	0.63 ± 0.29	0.45	n.d.	n.d.
Unclassified								
Borate	0.73 ± 0.22	3.68 ± 0.56	1.30 ± 0.23	2.60 ± 0.41	0.66 ± 0.34	0.05 ± 0.03	0.16 ± 0.04	0.38 ± 0.09
Diphosphate	1.40 ± 0.64	1.27 ± 0.54	1.49 ± 0.51	1.25 ± 0.52	0.44 ± 0.18	0.19 ± 0.06	0.22 ± 0.06	0.34 ± 0.10
Phosphate	1.22 ± 0.26	0.91 ± 0.17	1.09 ± 0.29	0.93 ± 0.17	0.69 ± 0.21	0.41 ± 0.09	0.16 ± 0.04	0.24 ± 0.05
Phosphate monomethyl ester	1.35 ± 0.25	1.14 ± 0.24	1.02 ± 0.19	0.81 ± 0.14	0.78 ± 0.14	0.85 ± 0.19	n.d.	n.d.
Propane-1,2-diol	1.95 ± 0.39	1.74 ± 0.24	1.11 ± 0.18	1.08 ± 0.20	0.98 ± 0.17	0.86 ± 0.14	1.00 ± 0.14	1.78 ± 0.28
Fold change: (n.d., not detected)								
	> 10.00	> 5.00	> 2.50	0.67 – 1.50	< 0.67	< 0.40	< 0.20	< 0.10