

**Proteins detected in the metaproteome of bacterial community involved in the biosynthetic pathways under study**

Table S3. List of protein sequences detected in the metaproteome of bacterial community involved in biosynthetic pathways under study

Name of enzyme	Accession (NCBI)	Organism
<b>Uroporphyrinogen III biosynthesis pathway</b>		
porphobilinogen synthase	WP_002458905.1	<i>Staphylococcus</i> sp.
	WP_008011359.1	<i>Pseudomonas</i> sp. GM50
	WP_013972900.1	<i>Pseudomonas</i> sp.
	WP_003211635.1	<i>Pseudomonas</i> sp.
	WP_009048237.1	<i>Pseudomonas chlororaphis</i>
hydroxymethylbilane synthase	WP_006599024.1	<i>Pseudoramibacter alactolyticus</i>
	WP_011275555.1	<i>Staphylococcus</i> sp.
	WP_019341266.1	<i>Pseudomonas stutzeri</i>
	WP_003379385.1	<i>Pseudomonas syringae</i>
	WP_007473976.1	<i>Caminibacter mediatlanticus</i>
	WP_004408797.1	<i>Pseudomonas syringae</i>
	WP_014821749.1	<i>Pseudomonas stutzeri</i>
	gi 493647429	<i>Pseudoramibacter alactolyticus</i>
<b>Siroheme biosynthesis pathway</b>		
uroporphyrin-III C-methyltransferase	WP_173512851.1	<i>Ensifer psoraleae</i>
	WP_150296063.1	<i>Pseudomonas extremaustralis</i>
	WP_083357327.1	<i>Pseudomonas antarctica</i>
	WP_110622650.1	<i>Pseudomonas</i> sp. OV286
	WP_198862205.1	<i>Pseudomonas carnis</i>
	WP_080519948.1	<i>Pseudomonas tolaasii</i>
	WP_028011927.1	<i>Sinorhizobium meliloti</i>
	WP_014764895.1	<i>Sinorhizobium fredii</i>
uroporphyrin-III C-methyltransferase / precorrin-2 dehydrogenase / sirohydrochlorin ferrochelatase	WP_117436720.1	<i>Mycobacterium marinum</i>
	WP_198965845.1	<i>Mycobacterium shottsii</i>
	WP_179694435.1	<i>Pseudomonas moraviensis</i>
	WP_127798710.1	<i>Pseudomonas syringae</i>
	WP_085613263.1	unclassified <i>Pseudomonas</i>
	WP_192561590.1	<i>Pseudomonas</i> sp. IzPS32d
	WP_064597721.1	<i>Pseudomonas</i> sp. DR 5-09
	WP_108562679.1	<i>Pseudomonas fluorescens</i>
<b>Protoporphyrin-dependent heme biosynthesis pathway</b>		
uroporphyrinogen decarboxylase	WP_011275429	<i>Staphylococcus</i> sp.
	WP_002472704	<i>Staphylococcus pettenkoferi</i>
	NP_253721	<i>Pseudomonas aeruginosa</i> PAO1
	WP_026853903	<i>Geothrix fermentans</i>
coproporphyrinogen-III oxidase	NP_250237	<i>Pseudomonas aeruginosa</i> PAO1
oxygen-independent coproporphyrinogen III oxidase	gi 659868130	<i>Caulobacter</i> sp. UNC358MFTsu5.1
	WP_010561650.1	<i>Pseudoalteromonas spongiae</i>

	WP_008165597.1	<i>Pseudoalteromonas</i> BSi20652
	WP_008165597.2	<i>Pseudoalteromonas</i> sp. BSi20429
protoporphyrin/coproporphyrin ferrochelatase	HCQ13473.1	<i>Pseudomonas protegens</i>
	WP_011275430.1	<i>Pseudomonas protegens</i>
	gi 499594696	<i>Pseudomonas protegens</i>
	WP_011275430.1	<i>Pseudomonas protegens</i>
	gi 499594696	<i>Pseudomonas protegens</i>
<b>Coproporphyrin -dependent heme biosynthesis pathway</b>		
protoporphyrin/coproporphyrin ferrochelatase	HCQ13473.1	<i>Pseudomonas protegens</i>
	WP_011275430.1	<i>Pseudomonas protegens</i>
	gi 499594696	<i>Pseudomonas protegens</i>
	WP_011275430.1	<i>Pseudomonas protegens</i>
	gi 499594696	<i>Pseudomonas protegens</i>
<b>Siroheme-dependent heme biosynthesis pathway</b>		
Fe-coproporphyrin III synthase	WP_114516816.1	<i>Ensifer sesbaniae</i>
	WP_103784311.1	<i>Ensifer adhaerens</i>
	WP_198561225.1	<i>Pseudomonas</i> sp. OV286
<b>Anaerobic cob(II)yrinate a, c diamide biosynthesis pathway</b>		
cobyrinic acid a,c-diamide synthase	KAJ26206.1	<i>Pseudomonas aeruginosa</i> M10
	WP_193067791.1	unclassified <i>Halomonas</i>
cobalt-precorrin-5B (C1)-methyltransferase	WP_079682569.1	<i>Parabacteroides chartae</i>
<b>Aerobic cob(II)yrinate a, c diamide biosynthesis pathway</b>		
cobyrinic acid a,c-diamide synthase	KAJ26206.1	<i>Pseudomonas aeruginosa</i> M10
	WP_193067791.1	unclassified <i>Halomonas</i>
<b>Cobalamin biosynthesis pathway from cob(II)yrinate a,c diamide</b>		
cob(I)alamin adenosyltransferase	WP_171978626.1	<i>Pseudomonas aeruginosa</i>
	WP_121499914.1	<i>Pseudomonas aeruginosa</i>
adenosylcobinamide kinase / adenosylcobinamide-phosphate guanylyltransferase	WP_173516816.1	<i>Ensifer sesbaniae</i>
	WP_104664311.1	<i>Ensifer adhaerens</i>
	WP_077960925.1	<i>Ensifer adhaerens</i>
	WP_077503836.1	<i>Sinorhizobium</i> sp. A49
	KSV90196.1	<i>Sinorhizobium</i> sp. GL28
nicotinate-nucleotide--dimethylbenzimidazole phosphoribosyltransferase	WP_046617183.1	<i>Pseudomonas putida</i>
	WP_075044018.1	<i>Pseudomonas putida</i>
	WP_085706506.1	<i>Pseudomonas</i> sp. B8(2017)
<b>Transport of porphyrins</b>		
periplasmic protein TonB	WP_197862675.1	<i>Pseudomonas putida</i>
biopolymer transport protein ExbB	WP_164634537.1	<i>Rhodopseudomonas</i> sp. BR0G17
biopolymer transport protein ExbD	WP_072840788.1	<i>Marinomonas polaris</i> DSM 16579