

Tab. S5: KEGG orthology terms and functional annotation of co-regulated proteins between *M. extorquens* PA1 and *S. melonis* Fr1.

KO term	Genes PA1	Genes Fr1	exemplary annotation	functional category
Shared up regulated KO terms				
K01990	Mext_0380	Sphme2DRAFT_1905	ABC transporter related	
K01610	Mext_1639	Sphme2DRAFT_3227	Phosphoenolpyruvate carboxykinase (ATP)	Carbohydrate metabolism, Energy metabolism
K00299	Mext_3404	Sphme2DRAFT_0605	NADPH-dependent FMN reductase	Energy metabolism, Metabolism of cofactors and vitamins
K01620	Mext_4651	Sphme2DRAFT_1332	aromatic amino acid beta-eliminating lyase/threonine aldolase	Amino acid metabolism
K02334	Mext_2306	Sphme2DRAFT_0732, Sphme2DRAFT_3262	Uracil-DNA glycosylase superfamily	
K00058	Mext_0660	Sphme2DRAFT_1089	D-3-phosphoglycerate dehydrogenase	Amino acid metabolism, Energy metabolism
K07305	Mext_1761	Sphme2DRAFT_1326	methionine-R-sulfoxide reductase	
K01724	Mext_1805	Sphme2DRAFT_0771	transcriptional coactivator/pterin dehydratase	
	Mext_1378,			
K09796	Mext_1379	Sphme2DRAFT_0994	protein of unknown function DUF461	
K01991	Mext_2535	Sphme2DRAFT_2554	polysaccharide export protein	
K02040	Mext_4713	Sphme2DRAFT_1490	phosphate ABC transporter, periplasmic phosphate-binding protein	Membrane transport, Signal transduction, Infectious diseases
K00382	Mext_4080	Sphme2DRAFT_3098	FAD-dependent pyridine nucleotide-disulphide oxidoreductase	Amino acid metabolism, Carbohydrate metabolism
Shared down regulated KO terms				
K02014	Mext_0672	Sphme2DRAFT_0191, Sphme2DRAFT_1738, Sphme2DRAFT_2463	TonB-dependent siderophore receptor	
K06167	Mext_4185	Sphme2DRAFT_3194	beta-lactamase-like protein	Metabolism of other amino acids
K01447	Mext_0941	Sphme2DRAFT_2582	N-acetylmuramoyl-L-alanine amidase family 2	
K01589	Mext_1963	Sphme2DRAFT_0648	phosphoribosylaminoimidazole carboxylase, ATPase subunit	Nucleotide metabolism
K00940	Mext_2012	Sphme2DRAFT_3212	Nucleoside-diphosphate kinase	Nucleotide metabolism
K00799	Mext_1924	Sphme2DRAFT_1599	Glutathione S-transferase domain	Metabolism of other amino acids, Xenobiotics biodegradation and metabolism
K01462	Mext_3949	Sphme2DRAFT_3344	formylmethionine deformylase	