Supplemental information

Comparative Genomics of Syntrophic Branched-Chain Fatty Acid Degrading Bacteria

Takashi Narihiro[1,2†*], Masaru K. Nobu[2†], Hideyuki Tamaki[1], Yoichi Kamagata[1], Yuji Sekiguchi[3], and Wen-Tso Liu[2]

[1]*Bioproduction Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Central 6, Higashi 1-1-1, Tsukuba, Ibaraki 305-8566, Japan*; [2]*Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, 205 North Mathews Ave, Urbana, IL 61801, USA;* [3]*Biomedical Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Central 6, Higashi 1-1-1, Tsukuba, Ibaraki 305-8566, Japan*

* Corresponding author: E-mail t.narihiro@aist.go.jp, Tel: +81-29-861-6591; Fax: +81-29-861-6587.

† These authors contributed equally to this work.

Materials and Methods

Clustered regularly interspaced short palindromic repeats (CRISPRs) were identified using the CRISPRs web server (6). Alignment of the translated amino acid sequences and construction of maximum likelihood (ML) trees of acyl-CoA dehydrogenase, enoyl-CoA hydratase, 3-hydroxyacyl-CoA dehydrogenase, acetyl-CoA acetyltransferase, and isobutyrly-CoA mutase were performed with the MEGA version 6.06 (5, 15). For phylogenetic comparison of genes involved in β–oxidation pathway, we tentatively annotated acyl-CoA dehydrogenase, enoyl-CoA hydratase, 3-hydroxyacyl-CoA dehydrogenase, and acetyl-CoA acetyltransferase genes from draft genome sequences of *Syntrophomonas palmitatica* strain

JCM 14374^T (accession no. NZ_BBCE00000000) and *Syntrophomonas zehnderi* strain OL-4^T (NZ_CGIH00000000) by using Prokka version 1.11 (10). The topology of the trees was estimated by 1,000 bootstrap replicates (4). The Jones-Taylor-Thornton (JTT) model and nearest-neighbor-interchange (NNI) were used for substitution model and heuristic method, respectively (7, 14).

Results and Discussion

Genome statistics

The quality of the genome of "*Syntrophomonas wolfei* subsp. *methylbutyratica*" strain 4J5, *Syntrophomonas wolfei* subsp. *wolfei* strain Göttingen, and *Syntrophothermus lipocalidus* strain TGB-C1 seems to be high (>97%) enough for the comparative genomics (Table S1). Approximately 1,800 genes of the strain 4J5 were highly homologous (>90% amino acid identity) to Göttingen genes, whereas approximately 1,000 genes of the strains 4J5 and Göttingen have significant amino acid identity (>70%) with the genes of strain TGB-C1 (Fig. S3).

Central metabolism, physiology, and transport systems

In accordance with the genome of strain Göttingen (11), the 4J5 and TGB-C1 genomes encode the Embden–Meyerhof pathway, pentose phosphate pathway, partial tricarboxylic acid (TCA) cycle, citrate (Re)-synthase gene cluster, and co-factor biosynthesis for central metabolism (Table S2). Bacterial core RNA polymerase (*rpoA*, *rpoB*, *rpoC*, and *rpoZ*) with sigma factors including general primary 70 factors (*rpoD*), heat stress factors (*rpoE*), a flagella biogenesis factor (*fliA, rpoF*), and a nitrogen-limitation 54 factor (*rpoN*) are identified in both of the strains. The RNA genes (rRNA and tRNA) were also found (Table S7). To cope with disturbances of environmental conditions, the strain 4J5 genome encodes thioredoxin, rubrerythrin, superoxide dismutase, and molecular chaperone systems. The strain TGB-C1 genome harbors these systems, except for superoxide dismutase.

The genes encoding flagellum components, type IV pilus synthesis, chemotaxis, and sporulation are found in the genomes. In addition, all of the genes required for synthesis and metabolize poly-β-hydroxyalkanoate (PHA) are found in the 4J5 genome, but not in the TGB-C1 genome. The PHA granules have been observed in the cells of the strain 4J5 under electron microscopic observation (16), implying that the strain 4J5 may utilize PHA under thermodynamically unfavorable conditions for the degradation of VFAs and BCFAs as suggested by previous culture- and genome-based studies on the strain Göttingen (1, 2, 8, 11). We found the genes associated with clustered regularly interspaced short palindromic repeat (CRISPR) within the genomes (Table S7). Although CRISPR is known as acquired immune system against phages (12, 13), the ecological role of the CRISPRs observed in the syntroph genomes remains obscure due to the absence of comprehensive study on CRISPR dynamics in methanogenic ecosystem.

A total of 105 and 68 genes/gene clusters involved in transportation, secretion, and drug resistance are found in the strain 4J5 and TGB-C1 genomes, respectively (Table S3). For example, there are tungstate, molybdate, ferrous iron, zinc, cobalt, phosphate, sodium, potassium, amino acids, and monosaccharides transporters. The strains Göttingen, 4J5, and TGB-C1 shared almost all of the transport/secretion systems with some exceptions; for example, ammonia transporters (Slip_1571 and Slip_2119) were found only in the strain TGB-C1, suggesting that *Syntrophothermus lipocalidus* possesses nitrogen-associated physiological function (discussed in main text).

Table S1. Genome statistics

Attribute	*Syntrophomonas wolfei* subsp. *metylbutyratica* strain 4J5	*Syntrophomonas wolfei* subsp. *wolfei* strain Göttingen	*Syntrophothermus lipocalidus* strain TGB-C1
Reference	This study	(11)	(3)
Status	Draft	Complete	Complete
DNA scaffold	89	1	1
DNA, total (bp)	3,194,001	2,936,195	2,405,559
DNA, G+C content	45.55%	44.87%	50.99%
Genes total number	3,073	2,677	2,440
Protein coding genes	2,964 (96.5%)	2,574 (96.2%)	2,385 (97.8%)
RNA genes	54	65	55
rRNA genes	11	19	6
tRNA genes	43	46	46
Genes with function prediction	2,184 (73.7%)	1,507 (57.1%)	1,726 (70.74%)
CRISPR			
Site number	2	5	2
Spacer number	63, 126	3, 15, 36, 61, 185	119, 152
Genome quality			
Completeness	97.35%	97.35%	98.81%
Contamination	0.04%	0.21%	0.51%

Table S2. *Syntrophomonas wolfei* subsp. *metylbutyratica* strain 4J5^T genes relevant to general function.

Locus Tag	Gene Product Name	BLAST top hit in *Syntrophomonas wolfei* strain Goettingen			BLAST top hit in *Syntrophothermus lipocalidus* strain TGB-C1		
		Gene ID and annotation	Identity (%)	e-Value	Gene ID and annotation	Identity (%)	e-Value
Glycolysis / TCA cycle							
SWMB_00127	glk; glucokinase	638137153 Swol_0259 glucokinase (EC 2712)	93.2	0	646854887 Slip_1859 glucokinase (EC 2.7.1.2)	43.6	2E-61
SWMB_00126	pgi-pmi; glucose/mannose-6-phosphate isomerase	638137154 Swol_0260 bifunctional phosphoglucose/phosphomannose isomerase (EC 5318; EC 531	95.6	0	646854886 Slip_1858 bifunctional phosphoglucose/phosphomannose isomerase (EC 5.3.1.8; EC 5.3.1	59.1	8E-146
SWMB_00515	glpX; fructose-1,6-bisphosphatase II	638139293 Swol_2409 hypothetical protein	98.2	0	646855333 Slip_2308 fructose-1,6-bisphosphatase, class II	76.9	0
SWMB_02090	pfkA, PFK; 6-phosphofructokinase 1	638138923 pfkA 6-phosphofructokinase (EC 27111)	97.8	0	646854733 pfkA 6-phosphofructokinase (EC 2.7.1.11)	60.8	6E-133
SWMB_02719	pfkA, PFK; 6-phosphofructokinase 1	638138043 pfkA 6-phosphofructokinase (EC 27111)	98.1	0	646854145 pfkA 6-phosphofructokinase (EC 2.7.1.11)	67.9	2E-166
SWMB_00513	FBA, fbaA; fructose-bisphosphate aldolase, class II	638139295 Swol_2411 fructose-bisphosphate aldolase (EC 41213)	97.9	0	646855335 Slip_2310 fructose-bisphosphate aldolase (EC 4.1.2.13)	78.8	6E-166
SWMB_00112	TPI, tpiA; triosephosphate isomerase (TIM)	638137167 tpiA triosephosphate isomerase (EC 5311)	92.8	0	646854878 tpiA triosephosphate isomerase (EC 5.3.1.1)	54.4	8E-93
SWMB_00114	GAPDH, gapA; glyceraldehyde 3-phosphate dehydrogenase	638137165 Swol_0272 glyceraldehyde-3-phosphate dehydrogenase (NAD+) (EC 12112)	98.5	0	646854880 Slip_1852 glyceraldehyde-3-phosphate dehydrogenase (NAD+) (EC 1.2.1.12)	58.5	3E-147
SWMB_00113	PGK, pgk; phosphoglycerate kinase	638137166 pgk phosphoglycerate kinase (EC 2723)	96.1	0	646854879 pgk phosphoglycerate kinase (EC 2.7.2.3)	59.5	4E-175
SWMB_00111	gpmI; 2,3-bisphosphoglycerate-independent phosphoglycerate mutase	638137168 gpmI phosphoglycerate mutase (EC 5421)	95.5	0	646854877 gpmI phosphoglycerate mutase (EC 5.4.2.1)	68.4	0
SWMB_00845	apgM; 2,3-bisphosphoglycerate-independent phosphoglycerate mutase	638138180 Swol_1301 phosphoglycerate mutase (EC 5421)	94.8	0	646853321 Slip_0290 phosphoglycerate mutase (EC 5.4.2.1)	56.1	3E-166
SWMB_00110	ENO, eno; enolase; phosphopyruvate hydratase	638137169 eno enolase (EC 42111)	97.7	0	646854876 eno enolase	73.5	0
SWMB_02089	PK, pyk; pyruvate kinase	638138922 Swol_2040 pyruvate kinase (EC 27140)	97.9	0	646854732 Slip_1701 pyruvate kinase (EC 2.7.1.40)	61.7	0
SWMB_02328	Pyruvate, phosphate dikinase	638138392 Swol_1512 pyruvate phosphate dikinase (EC 2791)	96.5	0	646854654 Slip_1625 pyruvate phosphate dikinase (EC 2.7.9.1)	75.2	0
SWMB_02463	pyruvate carboxylase	638137403 Swol_0519 pyruvate carboxylase, PYKA	98.6	0	646853453 Slip_0423 acetyl-CoA carboxylase, biotin carboxylase	48.6	6E-129
SWMB_02193	hydro-lyases, Fe-S type, tartrate/fumarate subfamily, beta region	638138505 Swol_1628 Fumarate hydratase beta subunit	98.1	1E-150	646855078 Slip_2051 hydro-lyase, Fe-S type, tartrate/fumarate subfamily, beta subunit	35.0	3E-29
SWMB_02194	hydro-lyases, Fe-S type, tartrate/fumarate subfamily, alpha region	638138506 Swol_1629 Fumarate hydratase alpha subunit	95.1	0	646855079 Slip_2052 hydro-lyase, Fe-S type, tartrate/fumarate subfamily, alpha subunit	30.6	2E-36
SWMB_01460	DLD, lpd, pdhD; dihydrolipoamide dehydrogenase	638138860 Swol_1978 dihydrolipoamide dehydrogenase (EC 1814)	94.4	0	646855207 Slip_2184 dihydrolipoamide dehydrogenase	39.4	3E-102
SWMB_00330	korD, oorD; 2-oxoglutarate ferredoxin oxidoreductase subunit delta	638138281 Swol_1401 4Fe-4S ferredoxin, iron-sulfur binding	37.1	5E-11	646853091 Slip_0043 4Fe-4S ferredoxin iron-sulfur binding domain protein	69.0	7E-40
SWMB_00331	korC, oorC; 2-oxoglutarate ferredoxin oxidoreductase subunit gamma	638136935 Swol_0038 2-oxoglutarate ferredoxin oxidoreductase, gamma subunit (EC 1273)	95.9	6E-135	646853090 Slip_0042 Pyruvate/ketoisovalerate oxidoreductase	65.1	6E-87
SWMB_00332	korB, oorB; 2-oxoglutarate ferredoxin oxidoreductase subunit beta	638136934 Swol_0037 2-oxoglutarate ferredoxin oxidoreductase, beta subunit (EC 1273)	100.0	0	646853089 Slip_0041 thiamine pyrophosphate protein domain protein TPP-binding protein	79.3	7E-159
SWMB_00333	korA, oorA; 2-oxoglutarate ferredoxin oxidoreductase subunit alpha	638136933 Swol_0036 putative keto/oxoacid ferredoxin oxidoreductase, alpha subunit	98.3	0	646853088 Slip_0040 pyruvate flavodoxin/ferredoxin oxidoreductase domain protein	77.4	0
SWMB_00728	korD, oorD; 2-oxoglutarate ferredoxin oxidoreductase subunit delta	638138281 Swol_1401 4Fe-4S ferredoxin, iron-sulfur binding	93.0	3E-45	646854802 Slip_1773 4Fe-4S ferredoxin iron-sulfur binding domain protein	59.2	1E-26
SWMB_00729	korA, oorA; 2-oxoglutarate ferredoxin oxidoreductase subunit alpha	638138280 Swol_1400 2-oxoisovalerate ferredoxin oxidoreductase, alpha subunit	97.7	0	646854801 Slip_1772 pyruvate flavodoxin/ferredoxin oxidoreductase domain protein	67.6	0
SWMB_00730	korB, oorB; 2-oxoglutarate ferredoxin oxidoreductase subunit beta	638138279 Swol_1399 putative keto/oxoacid ferredoxin oxidoreductase, beta subunit	98.4	0	646854800 Slip_1771 thiamine pyrophosphate protein domain protein TPP-binding protein	75.1	3E-145
SWMB_00731	korC, oorC; 2-oxoglutarate ferredoxin oxidoreductase subunit gamma	638138278 Swol_1398 2-oxoglutarate oxidoreductase gamma subunit	93.4	1E-127	646854799 Slip_1770 2-oxoglutarate ferredoxin oxidoreductase, gamma subunit (EC 1.2.7.3)	62.2	2E-82
					646853257 Slip_0223 fumarate reductase/succinate dehydrogenase flavoprotein domain protein		
re-citrate synthase gene cluster							
SWMB_01738	Isocitrate dehydrogenase [NADP]	638137267 Swol_0378 isocitrate dehydrogenase (NADP) (EC 11142)	97.9	0	646853542 Slip_0511 isocitrate dehydrogenase (NADP) (EC 1.1.1.42)	81.3	0
SWMB_01739	2,3-dimethylmalate dehydratase small subunit	638137266 Swol_0377 leuD 3-isopropylmalate dehydratase, small subunit (EC 42133)	98.8	6E-121	646853541 Slip_0510 leuD 3-isopropylmalate dehydratase, small subunit	80.1	2E-99
SWMB_01740	2,3-dimethylmalate dehydratase large subunit	638137265 Swol_0376 leuC 3-isopropylmalate dehydratase, large subunit (EC 42133)	97.8	0	646853540 Slip_0509 leuC homoaconitate hydratase family protein	78.7	0
SWMB_01741	putative re-citrate synthase	638137264 Swol_0375 hypothetical protein	97.4	0	646853539 Slip_0508 homocitrate synthase	76.3	0
Pentose phosphate pathway							
SWMB_00140	tktA, tktB; transketolase	638137140 Swol_0244 transketolase subunit B (EC 2211)	96.5	0	646854901 Slip_1873 transketolase subunit B (EC 2.2.1.1)	67.1	3E-157
SWMB_00141	tktA, tktB; transketolase	638137139 Swol_0243 transketolase subunit A (EC 2211)	95.6	0	646854902 Slip_1874 transketolase subunit A (EC 2.2.1.1)	70.6	6E-138
SWMB_00514	talA, talB; transaldolase	638139294 tal transaldolase (EC 2212)	98.1	2E-155	646855334 tal transaldolase (EC 2.2.1.2)	72.5	1E-116
SWMB_02744	rpe, RPE; ribulose-phosphate 3-epimerase	638138098 Swol_1223 ribulose-5-phosphate 3-epimerase (EC 5131)	94.0	4E-151	646853901 Slip_0868 ribulose-5-phosphate 3-epimerase (EC 5.1.3.1)	58.7	2E-93
SWMB_00294	PRPS, prsA; ribose-phosphate pyrophosphokinase	638136971 prs Ribose-phosphate diphosphokinase	97.8	0	646853149 prs ribose-phosphate pyrophosphokinase	76.6	5E-170
SWMB_01013	pmm-pgm; phosphomannomutase / phosphoglucomutase	638139034 Swol_2154 phosphomannomutase (EC 5428)	94.0	0	646853797 Slip_0765 phosphomannomutase (EC 5.4.2.8)	69.4	0
SWMB_02559	deoB; phosphopentomutase	638137487 deoB Phosphopentomutase	93.3	0	646853524 deoB phosphopentomutase	60.8	9E-171
SWMB_01013	pmm-pgm; phosphomannomutase / phosphoglucomutase	638139034 Swol_2154 phosphomannomutase (EC 5428)	94.0	0	646853797 Slip_0765 phosphomannomutase (EC 5.4.2.8)	69.4	0
SWMB_02972	pmm-pgm; phosphomannomutase / phosphoglucomutase	638138797 Swol_1915 phosphomannomutase (EC 5428)	96.0	0	646853797 Slip_0765 phosphomannomutase (EC 5.4.2.8)	68.3	0
SWMB_00294	PRPS, prsA; ribose-phosphate pyrophosphokinase	638136971 prs Ribose-phosphate diphosphokinase	97.8	0	646853149 prs ribose-phosphate pyrophosphokinase	76.6	5E-170
SWMB_02011	deoC, DERA; deoxyribose-phosphate aldolase	638138440 deoC Deoxyribose-phosphate aldolase	93.2	2E-150	646854663 deoC deoxyribose-phosphate aldolase	48.6	9E-62
					646855321 Slip_2294 sugar-phosphate isomerase, RpiB/LacA/LacB family		
					646853351 Slip_0321 PfkB domain protein		
Anaplerotic reactions							
SWMB_02089	pyk; pyruvate kinase	638138922 Swol_2040 pyruvate kinase (EC 27140)	97.9	0	646854732 Slip_1701 pyruvate kinase (EC 2.7.1.40)	61.7	0
SWMB_02328	ppdK; pyruvate, orthophosphate dikinase	638138392 Swol_1512 pyruvate phosphate dikinase (EC 2791)	96.5	0	646854654 Slip_1625 pyruvate phosphate dikinase (EC 2.7.9.1)	75.2	0
SWMB_00006	porB; pyruvate ferredoxin oxidoreductase beta subunit	638138254 Swol_1374 pyruvate synthase subunit porB	96.5	0			
SWMB_00007	porA; pyruvate ferredoxin oxidoreductase alpha subunit	638138255 Swol_1375 pyruvate ferredoxin oxidoreductase, alpha subunit (EC 1271)	96.5	0			
SWMB_00008	porD; pyruvate ferredoxin oxidoreductase delta subunit	638138256 Swol_1376 pyruvate ferredoxin oxidoreductase, delta subunit (EC 1271)	94.1	2E-70			
SWMB_00009	porG; pyruvate ferredoxin oxidoreductase gamma subunit	638138257 Swol_1377 pyruvate ferredoxin oxidoreductase, gamma subunit (EC 1271)	93.8	1E-137			
SWMB_00921	porG; pyruvate ferredoxin oxidoreductase gamma subunit	638139117 Swol_2237 pyruvate ferredoxin oxidoreductase, gamma subunit (EC 1271)	95.7	2E-121			
SWMB_00922	porD; pyruvate ferredoxin oxidoreductase delta subunit	638139116 Swol_2236 pyruvate synthase delta chain	96.5	7E-58			
SWMB_00923	porA; pyruvate ferredoxin oxidoreductase alpha subunit	638139115 Swol_2235 2-oxoisovalerateferredoxin oxidoreductase, alpha subunit	99.2	0			
SWMB_00924	porB; pyruvate ferredoxin oxidoreductase beta subunit	638139114 Swol_2234 2-ketoacid ferredoxin oxidoreductase beta subunit	99.0	0			
SWMB_02955	aldehyde dehydrogenase (NAD+)	639331138 Swol_0319 Aldehyde dehydrogenase	88.5	0			
SWMB_01418	Phosphoenolpyruvate synthase (2.7.9.2)						
SWMB_01420	Phosphoenolpyruvate synthase (2.7.9.2)						
SWMB_02538	Phosphoenolpyruvate synthase (2.7.9.2)						
SWMB_02598	Phosphoenolpyruvate synthase (2.7.9.2)						
RNA polymerase							
SWMB_00505	DNA-directed RNA polymerase subunit delta	638139304 Swol_2420 hypothetical protein	90.9	6E-50	646855343 Slip_2318 hypothetical protein	43.6	1E-17
SWMB_00589	DNA-directed RNA polymerase subunit beta	638139222 rpoB DNA-directed RNA polymerase subunit beta (EC 2776)	98.3	0	646855267 rpoB DNA-directed RNA polymerase subunit beta (EC 2.7.7.6)	81.4	0
SWMB_00590	DNA-directed RNA polymerase subunit beta'	638139221 rpoC DNA-directed RNA polymerase subunit beta' (EC 2776)	98.9	0	646855266 rpoC DNA-directed RNA polymerase subunit beta' (EC 2.7.7.6)	79.5	0
SWMB_00625	DNA-directed RNA polymerase subunit alpha	638139185 rpoA DNA-directed RNA polymerase subunit alpha (EC 2776)	99.7	0	646855230 rpoA DNA-directed RNA polymerase subunit alpha (EC 2.7.7.6)	75.6	5E-177
SWMB_02757	DNA-directed RNA polymerase subunit omega	638138111 rpoZ DNA-directed RNA polymerase subunit omega (EC 2776)	95.8	6E-35	646853888 rpoZ DNA-directed RNA polymerase subunit omega (EC 2.7.7.6)	64.4	9E-22
Sigma factor / anti-sigma factor							
SWMB_00121	rpoN; RNA polymerase sigma-54 factor	638137158 Swol_0265 RNA polymerase, sigma 54 subunit, RpoN/SigL	96.8	0	646854882 Slip_1854 RNA polymerase, sigma 54 subunit, RpoN/SigL	53.7	0
SWMB_00232	rpoE; RNA polymerase sigma-70 factor, ECF subfamily	638137032 Swol_0132 RNA polymerase, sigma-24 subunit, RpoE	89.2	1E-129	646854990 Slip_1965 RNA polymerase, sigma-24 subunit, RpoE	58.2	1E-71
SWMB_00233	mycothiol system anti-sigma-R factor	638137031 Swol_0131 putative transmembrane anti-sigma factor	91.3	0	646854992 Slip_1967 putative transmembrane anti-sigma factor	33.2	1E-41
SWMB_00465	Sigma-W factor	638137032 Swol_0132 RNA polymerase, sigma-24 subunit, RpoE	34.8	7E-25	646854430 Slip_1410 RNA polymerase, sigma-24 subunit, ECF subfamily	35.0	3E-22
SWMB_00576	RNA polymerase sporulation-specific sigma factor	638139237 Swol_2351 RNA polymerase, sigma 30 subunit, SigH	100.0	1E-159	646855281 Slip_2254 RNA polymerase, sigma 30 subunit, SigH	84.4	8E-130
SWMB_00798	rpoE; RNA polymerase sigma-70 factor, ECF subfamily	638137032 Swol_0132 RNA polymerase, sigma-24 subunit, RpoE	27.3	1E-08	646854430 Slip_1410 RNA polymerase, sigma-24 subunit, ECF subfamily	21.8	6E-07
SWMB_01098	Putative anti-sigma factor antagonist BtrV	638138944 Swol_2062 anti-sigma F factor antagonist (stage II sporulation protein AA)	96.0	1E-64	646853556 Slip_0525 anti-anti-sigma regulatory factor, SpoIIAA	31.5	9E-09
SWMB_01104	rpoE; RNA polymerase sigma-70 factor, ECF subfamily	638138940 Swol_2058 RNA polymerase, sigma-24 subunit, RpoE	97.1	1E-121	646854430 Slip_1410 RNA polymerase, sigma-24 subunit, ECF subfamily	26.5	1E-08
SWMB_01123	sigma-70 RNA polymerase sigma factor	638137818 Swol_0944 RNA polymerase sigma factor	91.8	1E-162	646853625 Slip_0594 putative RNA polymerase, sigma 28 subunit, FliA/WhiG subfamily	32.4	1E-19
SWMB_01321	RNA polymerase sigma factor for flagellar operon FliA	638137746 Swol_0878 RNA polymerase, sigma 28 subunit, SigD/FliA/WhiG	97.3	0	646854014 Slip_0982 RNA polymerase, sigma 28 subunit, SigD/FliA/WhiG	63.1	6E-107
SWMB_01365	RNA polymerase sporulation-specific sigma factor	638137706 Swol_0836 RNA polymerase, sigma subunit, RpsG/SigG	99.6	3E-167	646853841 Slip_0808 RNA polymerase, sigma subunit, RpsG/SigG	80.2	6E-134
SWMB_01367	RNA polymerase sigma-35 factor precursor	638137705 Swol_0835 RNA polymerase, sigma 29 subunit, SigE	98.8	7E-173	646853840 Slip_0807 RNA polymerase, sigma 29 subunit, SigE	79.3	3E-124
SWMB_01423	rpoE; RNA polymerase sigma-70 factor, ECF subfamily	638138901 Swol_2019 RNA polymerase, sigma-24 subunit, RpoE	99.5	9E-142	646854990 Slip_1965 RNA polymerase, sigma-24 subunit, RpoE	45.0	3E-47
SWMB_01424	mycothiol system anti-sigma-R factor	638138900 Swol_2018 putative transmembrane anti-sigma factor	91.2	0	646854431 Slip_1411 hypothetical protein	27.2	0.0001
SWMB_01571	Putative anti-sigma factor antagonist BtrV	638138678 Swol_1795 anti-anti-sigma regulatory factor, SpoIIAA	90.0	3E-65	646853556 Slip_0525 anti-anti-sigma regulatory factor, SpoIIAA	22.3	0.0008
SWMB_01574	rpoE; RNA polymerase sigma-70 factor, ECF subfamily	638138674 Swol_1791 RNA polymerase, sigma-24 subunit, RpoE	93.1	2E-127	646854430 Slip_1410 RNA polymerase, sigma-24 subunit, ECF subfamily	27.2	1E-09
SWMB_01607	Anti-sigma-V factor RsiV	638138645 Swol_1762 hypothetical protein	92.5	3E-173	646853840 Slip_0807 RNA polymerase, sigma 29 subunit, SigE	44.7	0.13
SWMB_01650	RNA polymerase sigma-28 factor precursor	638137385 Swol_0501 sigma 28 (flagella/sporulation)	95.2	1E-86	646853423 Slip_0393 RNA polymerase, sigma 27/28 subunit, RpsK/SigK	67.8	1E-53
SWMB_01951	Anti-sigma-V factor RsiV	639331177 Swol_1624 hypothetical protein	94.9	7E-155	646855347 Slip_2322 S-layer domain protein	25.9	0.00008
SWMB_02033	Putative anti-sigma factor antagonist BtrV	638138679 Swol_1796 hypothetical protein	68.3	0	646853556 Slip_0525 anti-anti-sigma regulatory factor, SpoIIAA	26.2	3E-07
SWMB_02334	rpoD; RNA polymerase primary sigma factor	638138387 sigA RNA polymerase, sigma 70 subunit, RpoD	98.6	0	646854649 sigA RNA polymerase, sigma 70 subunit, RpoD	84.7	0
SWMB_02464	RNA polymerase sigma-28 factor precursor	638137401 Swol_0517 RNA polymerase, sigma 27/28 subunit, RpsK/SigK	98.8	7E-177	646853423 Slip_0393 RNA polymerase, sigma 27/28 subunit, RpsK/SigK	70.6	2E-120
SWMB_02498	rpoE; RNA polymerase sigma-70 factor, ECF subfamily	638138674 Swol_1791 RNA polymerase, sigma-24 subunit, RpoE	28.6	7E-14	646854990 Slip_1965 RNA polymerase, sigma-24 subunit, RpoE	26.9	3E-10
SWMB_02549	RNA polymerase sporulation-specific sigma factor	638137494 Swol_0615 RNA polymerase, sigma subunit, RpoX/SigF	97.1	2E-172	646853558 Slip_0527 RNA polymerase, sigma subunit, RpoX/SigF	60.5	4E-102
SWMB_02550	Anti-sigma F factor	638137493 Swol_0614 putative anti-sigma regulatory factor, serine/threonine protein kinase	95.3	1E-99	646853557 Slip_0526 putative anti-sigma regulatory factor, serine/threonine protein kinase	56.1	2E-61
SWMB_02732	rpoE; RNA polymerase sigma-70 factor, ECF subfamily	638138086 Swol_1212 RNA polymerase, sigma-24 subunit, RpoE	95.8	1E-128	646854430 Slip_1410 RNA polymerase, sigma-24 subunit, ECF subfamily	51.9	6E-67
SWMB_02911	rpoE; RNA polymerase sigma-70 factor, ECF subfamily	638138901 Swol_2019 RNA polymerase, sigma-24 subunit, RpoE	26.0	7E-14	646854430 Slip_1410 RNA polymerase, sigma-24 subunit, ECF subfamily	27.9	2E-14
SWMB_00061	RNA polymerase sigma factor, sigma-70 family						
SWMB_02520	RNA polymerase sigma factor SigW						
		638138387 Swol_1507 sigA RNA polymerase, sigma 70 subunit, RpoD					
					646853160 Slip_0116 RNA polymerase, sigma-24 subunit, ECF subfamily		
Histidine-kinase signal transduction							
SWMB_00042	Signal transduction histidine-protein kinase BaeS	638138557 Swol_1680 sensor histidine kinase	23.4	1E-14	646853140 Slip_0096 multi-sensor signal transduction histidine kinase	22.8	2E-17
SWMB_00194	Signal transduction histidine-protein kinase/phosphatase DegS	638137082 Swol_0185 histidine kinase (EC 27133)	96.2	0	648021255 Slip_1928 histidine kinase (EC 2.7.13.3)	45.3	5E-107
SWMB_00523	Sensor histidine kinase CitA	638139285 Swol_2401 signal transduction histidine kinase regulating citrate/malate metabolism (EC	96.5	0	646854511 Slip_1489 signal transduction histidine kinase regulating citrate/malate metabolism	28.4	1E-52
SWMB_00765	Sensor histidine kinase GraS	638137826 Swol_0952 PAS/PAC sensor signal transduction histidine kinase (EC 27133)	24.6	9E-14	646853398 Slip_0368 multi-sensor signal transduction histidine kinase	23.1	2E-15
SWMB_00858	Sensor histidine kinase DpiB	639331170 Swol_1291 hypothetical protein	69.5	1E-178	646854511 Slip_1489 signal transduction histidine kinase regulating citrate/malate metabolism	29.2	4E-64
SWMB_01735	Autoinducer 2 sensor kinase/phosphatase LuxQ	638137269 Swol_0381 Hpt sensor hybrid histidine kinase (EC 27133)	88.7	0	646853140 Slip_0096 multi-sensor signal transduction histidine kinase	31.1	2E-31
SWMB_01961	Sensory histidine kinase DcuS	638138489 Swol_1610 signal transduction histidine kinase regulating citrate/malate metabolism (EC	91.3	1E-97	646853735 Slip_0708 signal transduction histidine kinase regulating citrate/malate metabolism	31.4	7E-09
SWMB_02255	Signal transduction histidine-protein kinase BaeS	638138557 Swol_1680 sensor histidine kinase	91.9	0	646853140 Slip_0096 multi-sensor signal transduction histidine kinase	28.0	9E-06
SWMB_02564	Signal transduction histidine-protein kinase BarA	638137480 Swol_0601 multi-sensor hybrid histidine kinase (EC 27133)	89.2	0	646853140 Slip_0096 multi-sensor signal transduction histidine kinase	31.1	9E-30
SWMB_02780	putative signal transduction histidine kinase	638137826 Swol_0952 PAS/PAC sensor signal transduction histidine kinase (EC 27133)	26.0	4E-21	646853398 Slip_0368 multi-sensor signal transduction histidine kinase	29.3	6E-26
Stress response							
SWMB_00444	Thioredoxin reductase	638139355 Swol_2471 thioredoxin reductase (NADPH) (EC 1819)	94.7	0	646855355 Slip_2331 thioredoxin reductase	57.0	2E-121
SWMB_01677	Thioredoxin-M	638137347 Swol_0462 thioredoxin	97.3	5E-75	646853380 Slip_0350 thioredoxin	54.6	2E-42
SWMB_02155	Rubrerythrin	638137547 Swol_0670 rubrerythrin	97.2	8E-130	646853273 Slip_0242 Rubrerythrin	72.1	1E-86
SWMB_01882	Superoxide dismutase [Mn/Fe]	638138588 Swol_1711 Superoxide dismutase	99.0	7E-148			
Chaperone / heat shock proteins							
SWMB_00278	Heat shock protein 15	638136986 Swol_0084 hypothetical protein	97.5	1E-50	646853157 Slip_0113 RNA-binding S4 domain protein	63.8	3E-35
SWMB_00671	Heat shock protein 70	638138332 Swol_1452 molecular chaperone DnaK	99.6	0	646854762 Slip_1731 Heat shock protein 70	63.9	0
SWMB_01143	General stress protein 16O	638137838 Swol_0964 transcriptional regulator, TraR/DksA family	94.6	3E-101	646853866 Slip_0833 transcriptional regulator, TraR/DksA family	48.3	9E-42
SWMB_01657	Chaperone protein ClpB 1	638137378 clpB putative ATPase with chaperone activity, two ATP-binding domains	99.2	0	646855295 Slip_2268 ATPase AAA-2 domain protein	45.4	0
SWMB_01659	Heat shock protein J	638137376 dnaJ dnaJ domain protein	97.1	0	646854679 dnaJ chaperone protein DnaJ	37.1	4E-58
SWMB_01660	Heat shock protein 70-2	638137375 dnaK chaperone protein DnaK	98.9	0	646854680 dnaK chaperone protein DnaK	58.9	0
SWMB_01729	Heat shock protein 70	638137274 Swol_0386 Molecular chaperone-like protein	94.4	0	646853333 Slip_0302 molecular chaperone-like protein	35.1	5E-100
SWMB_01869	Copper chaperone CopZ	638138574 Swol_1697 copper ion-binding	92.8	5E-41	646854691 Slip_1662 copper-translocating P-type ATPase	35.8	2E-08
SWMB_01990	Heat-inducible transcription repressor HrcA	638138460 hrcA heat-inducible transcription repressor HrcA	95.6	0	646854682 hrcA heat-inducible transcription repressor HrcA	55.4	1E-130
SWMB_01991	Stress protein H5	639331175 Swol_1580 hypothetical protein	96.7	0	646853604 groL chaperonin GroEL	24.6	4E-30
SWMB_01992	HSP-70 cofactor	638138459 grpE GrpE protein	94.0	6E-113	646854681 grpE GrpE protein	50.9	2E-54
SWMB_01993	Heat shock protein 70	638138458 dnaK chaperone DnaK	98.5	0	646854680 dnaK chaperone protein DnaK	77.8	0
SWMB_01994	Chaperone protein DnaJ	638138457 dnaJ chaperone DnaJ	99.7	0	646854679 dnaJ chaperone protein DnaJ	59.0	1E-144
SWMB_02833	chaperonin GroES	638138739 groS groes	97.9	3E-64	646853603 groS Chaperonin Cpn10	70.5	2E-45
SWMB_02834	chaperonin GroEL	638138738 groL hypothetical protein	99.3	0	646853604 groL chaperonin GroEL	78.6	0
					646853969 Slip_0937 heat shock protein Hsp20		
					646853980 Slip_0948 hslU heat shock protein HslVU, ATPase subunit HslU		
					646854387 Slip_1368 heat shock protein DnaJ domain protein		
Flagellum							
SWMB_00150	Flagellar protein FliS	638137129 Swol_0232 Flagellin-specific chaperone FliS-like protein	74.7	5E-88	646854910 Slip_1882 flagellar protein FliS	46.1	2E-42
SWMB_00153	Flagellar protein FlaG	638137130 Swol_0233 hypothetical protein	50.0	2E-34	646854911 Slip_1883 flagellar protein FlaG protein	35.9	7E-19
SWMB_00154	Flagellar protein FlaG	638137130 Swol_0233 hypothetical protein	40.6	8E-12	646854911 Slip_1883 flagellar protein FlaG protein	58.9	3E-25
SWMB_00181	fliC; flagellin	638137095 Swol_0198 Flagellin and related hook-associated proteins-like protein	56.7	1E-120	646854930 Slip_1903 flagellin domain protein	51.3	4E-36

SWMB_00182	fliD; flagellar hook-associated protein 2	638137094 Swol_0197 Flagellar capping protein-like protein	36.8	4E-25	646854931 Slip_1904 flagellar hook-associated 2 domain protein	42.6	6E-28
SWMB_00184	Flagellar assembly factor FliW	638137092 fliW hypothetical protein	54.5	2E-50	646854933 fliW protein of unknown function DUF180	47.7	1E-53
SWMB_00186	Flagellin	638137090 Swol_0193 Flagellin and related hook-associated proteins-like protein	35.9	3E-13	646854936 Slip_1909 flagellar hook-associated protein 3	48.0	6E-51
SWMB_00187	flgK; flagellar hook-associated protein 1 FlgK	638137089 Swol_0192 Flagellar hook-associated protein-like protein	83.0	0	646854937 Slip_1910 flagellar hook-associated protein FlgK	43.6	8E-150
SWMB_00189	Flagellar biosynthesis anti-sigma factor FlgM	638137087 Swol_0190 anti-sigma-28 factor, FlgM family	95.9	3E-54	646854939 Slip_1912 anti-sigma-28 factor, FlgM family	46.5	5E-19
SWMB_00190	Flagellar operon protein	638137086 Swol_0189 flagellar protein	98.6	1E-99	646854940 Slip_1913 flagellar protein	50.4	1E-42
SWMB_00551	flgG; flagellar basal-body rod protein FlgG	638139257 Swol_2373 flagellar basal-body rod protein (flgG-2)	94.7	4E-171	646855301 Slip_2274 flagellar basal-body rod protein FlgF	52.9	2E-82
SWMB_00656	Flagellar biosynthetic protein FlhB	638138354 Swol_1476 flagellar biosynthesis	98.9	8E-57	646853949 Slip_0916 type III secretion exporter	68.6	9E-36
SWMB_01125	Flagellar rod assembly protein/muramidase FlgJ	638137820 Swol_0946 hypothetical protein	92.4	3E-79	646853757 Slip_0725 Flagellar protein FlgJ	49.3	1E-23
SWMB_01126	flgG; flagellar basal-body rod protein FlgG	638137821 Swol_0947 flagellar basal-body rod protein FlgG	95.8	0	646853758 Slip_0726 flagellar basal-body rod protein FlgG	63.2	1E-122
SWMB_01321	fliA; RNA polymerase sigma factor for flagellar operon FliA	638137746 Swol_0878 RNA polymerase, sigma 28 subunit, SigD/FliA/WhiG	97.3	0	646854014 Slip_0982 RNA polymerase, sigma 28 subunit, SigD/FliA/WhiG	63.1	6E-107
SWMB_01328	Flagellum site-determining protein YlxH	638137739 Swol_0871 ParA protein	92.0	0	646854007 Slip_0975 Cobyrinic acid ac-diamide synthase	47.8	4E-94
SWMB_01329	Flagella-associated GTP-binding protein	638137738 Swol_0870 hypothetical protein	93.8	0	646854006 Slip_0974 flagellar biosynthetic protein FlhF	43.1	4E-113
SWMB_01330	Flagellar biosynthesis protein FlhA	638137737 Swol_0869 flagella-associated protein	96.9	0	646854005 Slip_0973 flagellar biosynthesis protein FlhA	70.0	0
SWMB_01331	Flagellar biosynthetic protein FlhB	638137736 Swol_0868 flagellar biosynthesis/type III secretory pathway protein	96.8	0	646854004 Slip_0972 flagellar biosynthetic protein FlhB	58.7	2E-155
SWMB_01332	Flagellar biosynthetic protein FliR	638137735 Swol_0867 flagellar biosynthetic protein FliR	96.1	8E-172	646854003 Slip_0971 flagellar biosynthetic protein FliR	50.6	2E-89
SWMB_01333	Flagellar biosynthetic protein FliQ	638137734 Swol_0866 hypothetical protein	96.7	3E-55	646854002 Slip_0970 flagellar biosynthetic protein FliQ	57.8	2E-25
SWMB_01334	Flagellar biosynthetic protein FliP precursor	638137733 Swol_0865 flagellar biosynthetic protein	97.1	4E-166	646854001 Slip_0969 flagellar biosynthetic protein FliP	69.8	4E-118
SWMB_01335	flagella biosynthesis protein FliZ	638137732 Swol_0864 hypothetical protein	91.9	1E-138	646854000 Slip_0968 hypothetical protein	37.4	7E-32
SWMB_01337	Flagellar motor switch protein FliN	638137730 Swol_0862 CheC, inhibitor of MCP methylation	91.5	0	646853998 Slip_0966 CheC, inhibitor of MCP methylation	57.3	2E-151
SWMB_01338	Flagellar motor switch protein FliM	638137729 Swol_0861 hypothetical protein	99.1	0	646853997 Slip_0965 flagellar motor switch protein FliM	62.5	9E-161
SWMB_01339	Flagellar basal body-associated protein FliL	638137728 Swol_0860 flagellar protein (FliL)-like protein	96.9	2E-109	646853996 Slip_0964 flagellar basal body-associated protein FliL	51.9	4E-51
SWMB_01340	Flagellar protein (FlbD)	638137727 Swol_0859 hypothetical protein	95.3	1E-38	646853995 Slip_0963 flagellar FlbD family protein	61.9	6E-24
SWMB_01341	Flagellar hook protein FlgE	638137726 Swol_0858 flagellar hook protein	59.4	8E-130	646853994 Slip_0962 fagellar hook-basal body protein	40.1	9E-49
SWMB_01342	Flagellar operon protein	638137725 Swol_0857 hypothetical protein	93.8	4E-61	646853993 Slip_0961 flagellar operon protein	54.3	9E-39
SWMB_01343	Flagellar basal body rod modification protein	638137724 Swol_0856 Flagellar hook capping protein-like protein	83.3	9E-106	646853992 Slip_0960 flagellar hook capping protein	43.0	5E-34
SWMB_01344	Flagellar hook-length control protein FliK	638137723 Swol_0855 Flagellar hook-length control protein-like protein	57.2	3E-94	646853991 Slip_0959 flagellar hook-length control protein	40.3	2E-21
SWMB_01346	Flagellar export protein FliJ	638137721 Swol_0853 hypothetical protein	96.0	3E-82	646853989 Slip_0957 flagellar export protein FliJ	35.4	7E-18
SWMB_01347	fliI; flagellum-specific ATP synthase	638137720 Swol_0852 type III secretion system ATPase, FliI/YscN (EC 36315)	96.6	0	646853988 Slip_0956 type III secretion system ATPase, FliI/YscN (EC 3.6.3.15)	70.7	0
SWMB_01348	fliH; flagellar assembly protein FliH	638137719 Swol_0851 Flagellar biosynthesis/type III secretory pathway protein-like protein	92.1	0	646853987 Slip_0955 Flagellar assembly protein FliH/Type III secretion system HrpE	40.0	1E-38
SWMB_01349	Flagellar motor switch protein FliG	639331161 Swol_0850	92.1	0	646853986 Slip_0954 flagellar motor switch protein FliG	75.1	8E-173
SWMB_01350	Flagellar M-ring protein	638137718 Swol_0849 flagellar M-ring protein FliF	93.9	0	646853985 Slip_0953 flagellar M-ring protein FliF	45.3	3E-137
SWMB_01351	Flagellar hook-basal body complex protein FliE	638137717 fliE flagellar hook-basal body protein	85.3	9E-58	646853984 fliE flagellar hook-basal body complex subunit FliE	52.4	7E-29
SWMB_01353	Flagellar basal body rod protein FlgB	638137715 Swol_0846 hypothetical protein	91.3	8E-88	646853982 Slip_0950 flagellar basal-body rod protein FlgB	48.2	1E-38
SWMB_01934	Flagellum site-determining protein YlxH	638138085 Swol_1211 nucleotide-binding protein	47.5	5E-82	646853371 Slip_0341 ATPase-like, ParA/MinD	52.0	1E-85
SWMB_02893	Flagellar motor switch protein	638137221 Swol_0335 CheC, inhibitor of MCP methylation	95.8	5E-139	646854012 Slip_0980 CheC, inhibitor of MCP methylation	25.3	2E-09
SWMB_02606	Flagellar assembly protein H	638137151 Swol_0257 hypothetical protein	82.1	0			
					646853757 Slip_0725 Flagellar protein FlgJ		
					646853758 Slip_0726 flagellar basal-body rod protein FlgG		
					646853983 Slip_0951 flagellar basal-body rod protein FlgC		
					646853984 Slip_0952 fliE flagellar hook-basal body complex subunit FliE		
					646854926 Slip_1898 flagellin domain protein		
					646854932 Slip_1905 carbon storage regulator, CsrA (could also regulate swarming and quorum sensing)		
Pilin							
SWMB_02048	cpaF, tadA; pilus assembly protein CpaF	638137415 Swol_0531 type II secretion system protein E	34.9	8E-10	646854946 Slip_1919 type II secretion system protein E	31.0	5E-40
SWMB_02057	Flp pilus assembly protein, protease CpaA	638139006 Swol_2126 butyryl-CoA dehydrogenase (EC 13992)	27.7	0.009	646854215 Slip_1187 Prepilin peptidase	29.6	0.0001
SWMB_02441	Fimbrial assembly protein (PilN)	638137424 Swol_0540 hypothetical protein	94.6	4E-98	646854206 Slip_1178 Fimbrial assembly family protein	25.7	0.00002
SWMB_02442	type IV pilus assembly protein PilM	638137423 Swol_0539 Tfp pilus assembly protein ATPase PilM-like protein	89.4	0	646853433 Slip_0403 Tfp pilus assembly protein ATPase PilM	26.3	1E-24
SWMB_02443	pilD, pppA; leader peptidase (prepilin peptidase) / N-methyltransferase	638137422 Swol_0538 type 4 prepilin peptidase 1 (EC342343) Aspartic peptidase MEROPS family	93.4	5E-135	646854215 Slip_1187 Prepilin peptidase	38.6	4E-47
SWMB_02447	putative major pilin subunit	638137418 Swol_0534 hypothetical protein	100.0	3E-99	646854214 Slip_1186 hypothetical protein	40.0	2E-09
SWMB_02448	type IV pilus assembly protein PilC	638137417 Swol_0533 type II secretion system protein	99.8	0	646853295 Slip_0264 Type II secretion system F domain protein	35.6	1E-97
SWMB_02449	twitching motility protein PilT	638137416 Swol_0532 twitching motility protein	99.1	0	646854216 Slip_1188 twitching motility protein	48.6	1E-115
SWMB_02450	type IV pilus assembly protein PilB	638137415 Swol_0531 type II secretion system protein E	92.3	0	646853431 Slip_0401 type II secretion system protein E (GspE)	51.7	2E-146
SWMB_00028	putative protein encoded in hypervariable junctions of pilus gene clusters	638137455 Swol_0572 hypothetical protein	42.7	5E-24			
SWMB_01569	putative protein encoded in hypervariable junctions of pilus gene clusters	638137455 Swol_0572 hypothetical protein	30.2	0.000007			
SWMB_01647	putative protein encoded in hypervariable junctions of pilus gene clusters	638137455 Swol_0572 hypothetical protein	39.3	5E-20			
SWMB_02440	type IV pilus assembly protein PilO	638137425 Swol_0541 hypothetical protein	84.2	4E-159			
SWMB_02444	Tfp pilus assembly protein PilX	638137421 Swol_0537 hypothetical protein	91.2	4E-89			
SWMB_02445	Type II secretory pathway, component PulJ	638137420 Swol_0536 hypothetical protein	97.4	6E-110			
SWMB_02446	putative type IV pilin N-term methylation site GFxxxE	638137419 Swol_0535 hypothetical protein	99.3	2E-101			
SWMB_03047	putative protein encoded in hypervariable junctions of pilus gene clusters	638137455 Swol_0572 hypothetical protein	23.7	0.0004			
SWMB_02458	Verru_Chthon cassette protein D				646853426 Slip_0396 pilin assembly protein	37.0	2E-23
					646854951 Slip_1924 peptidase A24A prepilin type IV		
					646854952 Slip_1925 Flp/Fap pilin component		
					646854008 Slip_0976 type IV pilus assembly PilZ		
					646854046 Slip_1014 type IV pilus assembly PilZ		
					646853435 Slip_0405 Pilus assembly protein, PilO		
					646853434 Slip_0404 Fimbrial assembly family protein		
					646853432 Slip_0402 Type 4 fimbrial biogenesis protein PilX, N-terminal domain		
					646854218 Slip_1190 PilT protein domain protein		
Sporulation							
SWMB_00101	Sporulation-specific N-acetylmuramoyl-L-alanine amidase	638137026 Swol_0126 N-acetylmuramoyl-L-alanine amidase	36.6	3E-20	646853299 Slip_0268 cell wall hydrolase/autolysin	35.0	1E-20
SWMB_00122	Sporulation transcription regulator WhiA	638137157 whiA hypothetical protein	95.9	0	646854883 whiA protein of unknown function DUF199	50.8	5E-100
SWMB_00269	Stage II sporulation protein E	638136995 Swol_0093 Phosphoprotein phosphatase	94.8	0	646853170 Slip_0126 protein serine/threonine phosphatase	42.6	0
SWMB_00274	spore cortex biosynthesis protein YabQ	638136988 Swol_0086 hypothetical protein	95.1	4E-83	646853159 Slip_0115 Spore cortex biosynthesis protein, YabQ	39.8	5E-19
SWMB_00275	Spore protein YabP	638136987 Swol_0085 hypothetical protein	100.0	4E-59	646853158 Slip_0114 sporulation protein YabP	44.4	1E-23
SWMB_00281	Stage III sporulation protein F	638136983 Swol_0081 stage V sporulation protein B	97.7	0	646853154 Slip_0110 polysaccharide biosynthesis protein	66.7	0
SWMB_00282	Stage V sporulation protein T	638136982 Swol_0080 transcriptional regulator, AbrB family	98.9	2E-130	646853153 Slip_0109 transcriptional regulator, AbrB family	73.9	8E-92
SWMB_00283	Spore germination protein YndE	638136981 Swol_0079 hypothetical protein	93.6	0	646853328 Slip_0297 spore germination protein	28.4	7E-23
SWMB_00284	Spore germination protein B1	638136980 Swol_0078 germination protein	95.4	0	646853329 Slip_0298 GerA spore germination protein	49.9	0
SWMB_00285	Spore germination protein B3 precursor	638136979 Swol_0077 hypothetical protein	91.9	0	646853327 Slip_0296 germination protein, Ger(x)C family	36.4	1E-86
SWMB_00286	Spore germination protein B3 precursor	638136977 Swol_0075 hypothetical protein	88.7	0	646853327 Slip_0296 germination protein, Ger(x)C family	33.8	1E-67
SWMB_00288	spore germination protein (amino acid permease)	638136976 Swol_0074 hypothetical protein	88.0	0	646854095 Slip_1063 spore germination protein	23.6	1E-14
SWMB_00299	stage II sporulation protein R	638136966 Swol_0063 pro-sigma-E processing factor spoIIR	96.8	1E-134	646853144 Slip_0100 stage II sporulation protein R	58.3	2E-56
SWMB_00313	sporulation lipoprotein, YhcN/YlaJ family	638136955 Swol_0052 hypothetical protein	95.1	2E-141	646853108 Slip_0057 Sporulation lipoprotein YhcN/YlaJ	29.5	2E-14
SWMB_00376	Stage III sporulation protein J	639331191 Swol_2574 protein translocase subunit yidC	98.1	6E-156	646855407 Slip_2382 protein translocase subunit yidC	54.2	9E-95
SWMB_00382	Sporulation initiation inhibitor protein soj	638139452 Swol_2568 chromosome segregation ATPase	97.3	0	646855401 Slip_2376 chromosome segregation ATPase	65.6	1E-124
SWMB_00387	putative sporulation protein YyaC	638139447 Swol_2563 YyaC	93.1	5E-142	646855394 Slip_2369 sporulation protein YyaC	55.7	3E-66
SWMB_00404	Sporulation kinase E	638139431 Swol_2546 Signal transduction histidine kinase-like protein	20.3	0.0007	646854150 Slip_1119 putative PAS/PAC sensor protein	23.4	0.00005
SWMB_00512	Sporulation initiation phosphotransferase F	638139296 Swol_2412 response regulator receiver protein	98.4	6E-85	646855336 Slip_2311 response regulator receiver protein	56.6	2E-45
SWMB_00576	Stage 0 sporulation protein H	638139237 Swol_2351 RNA polymerase, sigma 30 subunit, SigH	100.0	1E-159	646855281 Slip_2254 RNA polymerase, sigma 30 subunit, SigH	84.4	8E-130
SWMB_00669	Sporulation initiation inhibitor protein soj	638138334 Swol_1454 chromosome partitioning protein	93.5	0	646854760 Slip_1729 Cobyrinic acid ac-diamide synthase	68.1	5E-131
SWMB_00717	putative spore protein YtfJ	638138294 Swol_1414 hypothetical protein	100.0	3E-98	646853583 Slip_0552 sporulation protein YtfJ	66.1	1E-55
SWMB_00718	Spore maturation protein A	638138293 Swol_1413 nucleoside recognition proteinn	97.5	2E-137	646853584 Slip_0553 nucleoside recognition domain protein	71.4	3E-103
SWMB_00719	Spore maturation protein B	638138292 Swol_1412 nucleoside recognition proteinn	98.3	4E-124	646853585 Slip_0554 nucleoside recognition domain protein	74.2	5E-99
SWMB_00815	stage II sporulation protein P	638138220 Swol_1339 putative stage II sporulation protein P	97.7	0	646854498 Slip_1476 stage II sporulation protein P	47.6	3E-106
SWMB_00833	Stage IV sporulation protein A	638138203 Swol_1322 hypothetical protein	98.8	0	646854492 Slip_1470 stage IV sporulation protein A	77.6	0
SWMB_00886	Stage III sporulation protein E	638138140 Swol_1265 DNA translocase FtsK	95.7	0	646854070 Slip_1038 DNA translocase FtsK	53.4	0
SWMB_01127	sporulation protein, YlmC/YmxH family	638137822 Swol_0948 hypothetical protein	97.9	5E-63	646853843 Slip_0810 sporulation protein, YlmC/YmxH family	64.5	4E-32
SWMB_01186	Stage V sporulation protein K	638137856 Swol_0983 SpoVK	99.3	0	646854111 Slip_1080 AAA ATPase central domain protein	63.5	4E-122
SWMB_01255	Spore germination protein	638137923 Swol_1052 Spore germination protein-like protein	95.1	0	646853068 Slip_0022 Spore germination protein-like Gmad2	58.6	1E-106
SWMB_01258	Sporulation kinase E	638137925 Swol_1054 PAS/PAC sensor signal transduction histidine kinase (EC 27133)	89.2	0	646853849 Slip_0816 PAS/PAC sensor signal transduction histidine kinase (EC 2.7.13.3)	24.9	4E-21
SWMB_01267	Sporulation protein YunB	638137797 Swol_0931 hypothetical protein	98.2	4E-155	646853750 Slip_0723 sporulation protein YunB	51.7	4E-66
SWMB_01281	Small, acid-soluble spore proteins, alpha/beta type	638137784 Swol_0918 hypothetical protein	98.3	5E-36	646854098 Slip_1067 hypothetical protein	63.2	5E-25
SWMB_01287	sporulation protein, YlmC/YmxH family	638137778 Swol_0912 hypothetical protein	97.8	2E-58	646854048 Slip_1016 sporulation protein, YlmC/YmxH family	67.1	9E-42
SWMB_01310	sporulation integral membrane protein YtvI	638137756 Swol_0888 protein of unknown function UPF0118	95.1	0	646854024 Slip_0992 sporulation integral membrane protein YtvI	44.0	8E-87
SWMB_01365	Stage II sporulation protein AC	638137706 Swol_0836 RNA polymerase, sigma subunit, RpsG/SigG	99.6	3E-167	646853841 Slip_0808 RNA polymerase, sigma subunit, RpsG/SigG	80.2	6E-134
SWMB_01368	sigma-E processing peptidase SpoIIGA	638137704 Swol_0834 sporulation factor SpoIIGA Unknown type peptidase MEROPS family U04	95.9	0	646853839 Slip_0806 sporulation factor SpoIIGA. Unknown type peptidase. MEROPS family U04	47.2	3E-96
SWMB_01382	Sporulation-specific penicillin-binding protein	638137690 Swol_0820 Peptidoglycan glycosyltransferase	97.9	0	646853822 Slip_0789 stage V sporulation protein D	63.5	0
SWMB_01383	Septum formation initiator	638137689 Swol_0819 hypothetical protein	94.6	2E-115	646853821 ftsL cell division protein FtsL	30.8	1E-14
SWMB_01427	putative sporulation protein YtaF	638138897 Swol_2015 integral membrane protein	95.7	7E-140	646854723 Slip_1693 sporulation protein YtaF	50.7	1E-51
SWMB_01661	Sporulation-specific penicillin-binding protein	638137374 Swol_0489 Peptidoglycan glycosyltransferase	92.3	0	646853396 Slip_0366 Peptidoglycan glycosyltransferase	42.5	2E-146
SWMB_01691	Spore germination protein GerM	638137334 Swol_0447 putative germination protein GerM	92.8	1E-132	646855084 Slip_2057 Lipoprotein LpqB, GerMN domain protein	43.1	1E-45
SWMB_01787	putative sporulation protein YtxC	638137957 Swol_1087 hypothetical protein	98.1	0	646854523 Slip_1501 Sporulation protein YtxC	44.0	2E-92
SWMB_01847	Putative sporulation-specific glycosylase YdhD	638138754 Swol_1871 glycosyl hydrolase-like protein	33.8	1E-08	646854175 Slip_1146 copper amine oxidase domain protein	28.5	8E-06
SWMB_01962	Spo0B-associated GTP-binding protein	638138488 obg spo0B-associated GTP-binding protein	96.7	0	646853736 obg GTP-binding protein Obg/CgtA	67.4	0
SWMB_01985	stage II sporulation protein P	638138465 Swol_1586 hypothetical protein	94.5	0	646854686 Slip_1657 stage II sporulation protein P	41.1	3E-87
SWMB_02003	sporulation protein YqfC	638138448 Swol_1568 hypothetical protein	100.0	1E-60	646854671 Slip_1642 sporulation protein YqfC	56.0	3E-34
SWMB_02004	sporulation protein YqfD	638138447 Swol_1567 putative stage IV sporulation YqfD	93.1	0	646854670 Slip_1641 sporulation protein YqfD	40.7	2E-111
SWMB_02028	Spore coat protein SA	638137839 Swol_0965 1,2-diacylglycerol 3-glucosyltransferase (EC 241157)	34.2	0.0004	646853663 Slip_0632 glycosyl transferase group 1	28.3	9E-12
SWMB_02044	Sporulation initiation inhibitor protein soj	638139452 Swol_2568 chromosome segregation ATPase	36.6	6E-58	646855401 Slip_2376 chromosome segregation ATPase	41.1	9E-65
SWMB_02108	stage V sporulation protein AC	638137505 Swol_0626 spore formation protein spoVAC	95.5	1E-106	646853559 Slip_0528 stage V sporulation protein AC	56.4	9E-60
SWMB_02109	Stage V sporulation protein AD	638137506 Swol_0627 stage V sporulation AD	96.7	0	646853560 Slip_0529 stage V sporulation protein AD	62.0	8E-152
SWMB_02110	stage V sporulation protein AE	638137507 Swol_0628 SpoVA protein	95.8	3E-60	646853561 Slip_0530 stage V sporulation protein AE	70.3	4E-44
SWMB_02111	Spore germination protein B1	638137508 Swol_0629 GerA spore germination protein	97.6	0	646853329 Slip_0298 GerA spore germination protein	31.5	3E-72
SWMB_02375	stage II sporulation protein P	638138000 Swol_1127 putative stage II sporulation protein P	93.7	0	646854257 Slip_1229 stage II sporulation protein P	46.5	6E-97
SWMB_02422	Stage III sporulation protein AH	638137441 Swol_0557 hypothetical protein	87.0	1E-116	646853451 Slip_0421 hypothetical protein	36.7	2E-21
SWMB_02423	stage III sporulation protein AG	638137440 Swol_0556 hypothetical protein	97.4	2E-135	646853450 Slip_0420 hypothetical protein	41.1	9E-36
SWMB_02424	stage III sporulation protein AF	638137439 Swol_0555 hypothetical protein	92.3	2E-122	646853449 Slip_0419 Sporulation stage III protein AF	36.2	2E-43
SWMB_02425	Stage III sporulation protein AE precursor	638137438 Swol_0554 hypothetical protein	97.2	0	646853448 Slip_0418 stage III sporulation protein AE	43.6	7E-112
SWMB_02426	stage III sporulation protein AD	638137437 Swol_0553 putative sporulation protein	99.2	4E-77	646853447 Slip_0417 stage III sporulation protein AD	60.3	3E-54
SWMB_02427	stage III sporulation protein AC	638137436 Swol_0552 hypothetical protein	100.0	9E-32	646853446 Slip_0416 stage III sporulation protein AC	78.1	1E-29
SWMB_02428	stage III sporulation protein SpoAB	638137435 Swol_0551 hypothetical protein	94.3	4E-107	646853445 Slip_0415 Sporulation stage III protein AB	41.9	7E-39
SWMB_02532	Sporulation initiation inhibitor protein soj	638139452 Swol_2568 chromosome segregation ATPase	35.2	3E-55	646855401 Slip_2376 chromosome segregation ATPase	40.2	3E-63
SWMB_02549	Stage II sporulation protein AC	638137494 Swol_0615 RNA polymerase, sigma subunit, RpoX/SigF	97.1	2E-172	646853558 Slip_0527 RNA polymerase, sigma subunit, RpoX/SigF	60.5	4E-102
SWMB_02550	stage II sporulation protein AB (anti-sigma F factor)	638137493 Swol_0614 putative anti-sigma regulatory factor, serine/threonine protein kinase	95.3	1E-99	646853557 Slip_0526 putative anti-sigma regulatory factor, serine/threonine protein kinase	56.1	2E-61
SWMB_02551	Stage II sporulation protein AA	638137492 Swol_0613 anti-anti-sigma regulatory factor, SpoIIAA	96.4	8E-70	646853556 Slip_0525 anti-anti-sigma regulatory factor, SpoIIAA	50.0	2E-37
SWMB_02562	Stage II sporulation protein M	638137484 Swol_0605 uncharacterized membrane protein	96.1	5E-136	646853521 Slip_0491 stage II sporulation protein M	50.3	3E-64
SWMB_02576	Stage 0 sporulation protein A	638137469 Swol_0590 response regulator receiver protein	98.5	0	646853471 Slip_0441 response regulator receiver protein	69.6	2E-136
SWMB_02577	SpoIVB peptidase precursor	638137468 Swol_0589 SpoIVB peptidase Serine peptidase MEROPS family S55	97.1	0	646853470 Slip_0440 SpoIVB peptidase. Serine peptidase. MEROPS family S55	55.6	5E-174
SWMB_02649	polysaccharide deacetylase family sporulation protein PdaB	638137774 Swol_0908 xylanase/chitin deacetylase	33.3	0.002	646853651 Slip_0620 polysaccharide deacetylase	28.4	0.00007
SWMB_02684	putative sporulation protein YyaC	638138070 Swol_1197 hypothetical protein	88.7	2E-115	646854398 Slip_1379 sporulation protein YyaC	43.1	1E-44
SWMB_02687	Spore germination protein B1	638138067 Swol_1194 grkA; spore germination protein, GrkA	88.3	0	646853329 Slip_0298 GerA spore germination protein	44.8	2E-145
SWMB_02688	Spore germination protein A3 precursor	638138066 Swol_1193 hypothetical protein	87.2	0	646853327 Slip_0296 germination protein, Ger(x)C family	29.9	6E-44
SWMB_02689	Spore germination protein YndE	638138065 Swol_1192 hypothetical protein	92.3	0	646854095 Slip_1063 spore germination protein	31.0	7E-38
SWMB_02772	Stage V sporulation protein S	638138125 spoVS stage V sporulation protein S	98.8	1E-54	646854085 spoVS2 Stage V sporulation protein S	96.5	3E-53
SWMB_02796	Sporulation integral membrane protein YlbJ	638137635 Swol_0764 hypothetical protein	95.9	0	646853932 Slip_0899 sporulation integral membrane protein YlbJ	47.6	2E-112
SWMB_02943	Spore coat protein	638138779 Swol_1896 hypothetical protein	97.6	1E-57	646854397 Slip_1378 Coat F domain protein	65.8	2E-34
SWMB_02969	Sporulation kinase E	638138800 Swol_1918 PAS/PAC sensor signal transduction histidine kinase (EC 27133)	85.2	0	646854150 Slip_1119 putative PAS/PAC sensor protein	20.7	6E-08
SWMB_02999	Putative sporulation-specific glycosylase YdhD	638138754 Swol_1871 glycosyl hydrolase-like protein	92.0	0	646854968 Slip_1942 copper amine oxidase domain protein	28.1	2E-29
SWMB_00549	Sporulation initiation inhibitor protein soj	638139259 Swol_2375 stage III sporulation protein D	96.3	6E-54	646855303 Slip_2276 sporulation transcriptional regulator SpoIIID	83.5	7E-45

SWMB_00452	Stage IV sporulation protein H	638139344 Swol_2460 hypothetical protein	92.8	8E-61			
SWMB_02858	Spore photoproduct lyase	638138721 Swol_1838 hypothetical protein	98.5	0			
SWMB_01848	Spore germination protein YaaH	638138754 Swol_1871 glycosyl hydrolase-like protein	32.8	4E-18			
SWMB_00979	Inner spore coat protein H	638139060 Swol_2180 hypothetical protein	96.9	0			
SWMB_01097	spore cortex-lytic enzyme	638138945 Swol_2063 hypothetical protein	91.3	0			
SWMB_02715	Endospore coat-associated protein YheD	638138047 Swol_1174 hypothetical protein	95.7	0			
SWMB_02721	Endospore coat-associated protein YheD	638138041 Swol_1168 YheD	95.1	0			
SWMB_02722	Endospore coat-associated protein YheD	638138038 Swol_1165 hypothetical protein	92.6	0			
SWMB_01409	Spo0E like sporulation regulatory protein						
SWMB_02394	acid-soluble spore protein H						
					646853322 Slip_0291 spore germination protein		
					646853323 Slip_0292 germination protein, Ger(x)C family		
					646853324 Slip_0293 spore germination protein		
					646853326 Slip_0295 germination protein, Ger(x)C family		
					646853444 Slip_0414 stage III sporulation protein AA		
					646853926 Slip_0893 small acid-soluble spore protein alpha/beta type		
					646853927 Slip_0894 spore protease		
					646854085 Slip_1053 Stage V sporulation protein S		
					646854094 Slip_1062 GerA spore germination protein		
					646854534 Slip_1511 sporulation lipoprotein, YhcN/YlaJ family		
					646854536 Slip_1513 polysaccharide deacetylase family sporulation protein PdaB		
					646854736 Slip_1705 small acid-soluble spore protein		
Chemotaxis							
SWMB_00143	Chemotaxis protein MotB	638137137 Swol_0240 hypothetical protein	94.2	0	646854904 Slip_1876 OmpA/MotB domain protein	61.1	8E-117
SWMB_00144	Chemotaxis protein PomA	638137136 Swol_0239 hypothetical protein	96.2	0	646854905 Slip_1877 MotA/TolQ/ExbB proton channel	66.5	3E-123
SWMB_00666	Chemotaxis protein CheA	638138337 Swol_1457 MCP methyltransferase, CheR-type	99.6	0	646854757 Slip_1726 MCP methyltransferase, CheR-type	70.3	9E-150
SWMB_00667	two-component system, chemotaxis family, response regulator CheY	638138336 Swol_1456 response regulator receiver protein	98.4	6E-86	646854758 Slip_1727 response regulator receiver protein	65.6	5E-58
SWMB_00668	two-component system, chemotaxis family, sensor kinase CheA	638138335 Swol_1455 CheA signal transduction histidine kinase	92.3	0	646854759 Slip_1728 CheA signal transduction histidine kinase	51.8	0
SWMB_00672	Methyl-accepting chemotaxis protein 4	638138331 Swol_1451 putative methyl-accepting chemotaxis sensory transducer	26.1	3.2	646854770 Slip_1739 methyl-accepting chemotaxis sensory transducer	32.9	5E-19
SWMB_00673	Serine chemoreceptor protein	638138331 Swol_1451 putative methyl-accepting chemotaxis sensory transducer	23.9	6.2	646854770 Slip_1739 methyl-accepting chemotaxis sensory transducer	27.2	6E-20
SWMB_00674	Chemotaxis protein CheW	638138330 Swol_1450 CheW protein	99.8	0	646854764 Slip_1733 CheW protein	36.6	4E-56
SWMB_00675	Chemotaxis response regulator protein-glutamate methylesterase	638138329 cheB3 Protein-glutamate methylesterase	100.0	0	646854765 cheB response regulator receiver modulated CheB methylesterase	72.8	0
SWMB_00676	Chemotaxis protein CheY	638138328 Swol_1448 response regulator receiver protein	100.0	6E-90	646854766 Slip_1735 response regulator receiver protein	71.4	4E-63
SWMB_00677	CheY-P phosphatase CheX	638138327 Swol_1447 chemotaxis operon protein	100.0	1E-112	646854767 Slip_1736 chemotaxis operon protein	62.4	9E-72
SWMB_00678	CheY-P phosphatase CheX	638138326 Swol_1446 CheX protein (uncharacterized ORF in chemotaxis operon)	98.7	2E-107	646854768 Slip_1737 CheC domain protein	60.5	4E-64
SWMB_00761	mcp; methyl-accepting chemotaxis protein	638137793 Swol_0927 putative methyl-accepting chemotaxis sensory transducer	27.2	7E-23	646854384 Slip_1365 methyl-accepting chemotaxis sensory transducer	24.5	1E-19
SWMB_00821	Chemotaxis protein CheY	638138214 Swol_1333 response regulator receiver protein	93.2	5E-77	646853999 Slip_0967 response regulator receiver protein	61.7	7E-48
SWMB_00822	Chemotaxis protein CheA	638138213 Swol_1332 putative CheA signal transduction histidine kinases	95.0	0	646854010 Slip_0978 CheA signal transduction histidine kinase	29.4	7E-99
SWMB_00823	Chemotaxis protein CheW	638138330 Swol_1450 CheW protein	35.6	3E-26	646854818 Slip_1789 CheW protein	39.4	2E-27
SWMB_00824	Dipeptide chemoreceptor protein	638138212 Swol_1331 methyl-accepting chemotaxis sensory transducer	25.5	0.5	646854384 Slip_1365 methyl-accepting chemotaxis sensory transducer	28.7	1E-21
SWMB_00825	Chemotaxis protein methyltransferase	638138211 Swol_1330 MCP methyltransferase, CheR-type	93.0	0	646854440 Slip_1419 MCP methyltransferase, CheR-type	35.4	4E-44
SWMB_00826	Chemotaxis response regulator protein-glutamate methylesterase	638138210 cheB2 Protein-glutamate methylesterase	95.9	0	646854009 cheB response regulator receiver modulated CheB methylesterase	37.1	7E-70
SWMB_00827	Sensory/regulatory protein RpfC	638138209 Swol_1328 PAS/PAC sensor hybrid histidine kinase (EC 27133)	93.2	0	646853849 Slip_0816 PAS/PAC sensor signal transduction histidine kinase (EC 2.7.13.3)	24.2	0.008
SWMB_00828	Sensory/regulatory protein RpfC	638138208 Swol_1327 response regulator receiver protein	98.5	5E-91	646854758 Slip_1727 response regulator receiver protein	30.2	5E-12
SWMB_01322	Chemoreceptor glutamine deamidase CheD	638137745 cheD CheD, stimulates methylation of MCP proteins	98.8	3E-115	646854013 cheD CheD, stimulates methylation of MCP proteins	68.3	1E-82
SWMB_01323	CheY-P phosphatase CheC	638137744 Swol_0876 CheC, inhibitor of MCP methylation	95.2	1E-141	646854012 Slip_0980 CheC, inhibitor of MCP methylation	65.7	1E-94
SWMB_01324	Chemotaxis protein CheW	638137743 Swol_0875 CheW protein	87.7	5E-84	646854011 Slip_0979 CheW protein	53.2	4E-52
SWMB_01325	Chemotaxis protein CheA	638137742 Swol_0874 putative CheA signal transduction histidine kinases	90.7	0	646854010 Slip_0978 CheA signal transduction histidine kinase	57.9	0
SWMB_01326	Chemotaxis response regulator protein-glutamate methylesterase	638137741 cheB1 Protein-glutamate methylesterase	85.2	0	646854009 cheB response regulator receiver modulated CheB methylesterase	52.5	8E-133
SWMB_01336	Chemotaxis protein CheY	638137731 Swol_0863 response regulator receiver protein	96.7	5E-79	646853999 Slip_0967 response regulator receiver protein	84.9	2E-71
SWMB_01758	Chemotaxis protein CheY	638137245 Swol_0355 response regulator receiver protein	93.2	3E-162	646853999 Slip_0967 response regulator receiver protein	49.6	2E-36
SWMB_01759	Chemotaxis protein CheA	638137244 Swol_0353 putative CheA signal transduction histidine kinases	91.9	0	646854759 Slip_1728 CheA signal transduction histidine kinase	37.9	6E-35
SWMB_02179	Chemotaxis protein methyltransferase	638137569 Swol_0695 MCP methyltransferase, CheR-type	95.4	0	646854440 Slip_1419 MCP methyltransferase, CheR-type	61.8	1E-118
SWMB_02511	Methyl-accepting chemotaxis protein	638138723 Swol_1840 putative methyl-accepting chemotaxis sensory transducer	21.2	0.0008	646854088 Slip_1056 methyl-accepting chemotaxis sensory transducer	27.7	3E-10
SWMB_02894	Chemotaxis protein CheY	638137220 Swol_0334 response regulator receiver protein	87.8	1E-77	646854766 Slip_1735 response regulator receiver protein	36.6	5E-19
SWMB_02923	Chemotaxis protein CheW	638138769 Swol_1886 CheW protein	98.7	4E-108	646854818 Slip_1789 CheW protein	70.7	3E-74
SWMB_01016	putative methyl-accepting chemotaxis protein (MCP), signaling domain	638139031 Swol_2151 methyl-accepting chemotaxis sensory transducer with Cache sensor	93.1	0	646854279 Slip_1250 methyl-accepting chemotaxis sensory transducer with Cache sensor	28.2	1E-61
SWMB_01001	putative methyl-accepting chemotaxis protein (MCP), signaling domain	638139042 Swol_2162 methyl-accepting chemotaxis sensory transducer with Cache sensor	92.9	0	646854821 Slip_1792 methyl-accepting chemotaxis sensory transducer	42.2	2E-94
					646853503 Slip_0473 methyl-accepting chemotaxis sensory transducer		
					646853618 Slip_0587 methyl-accepting chemotaxis sensory transducer		
					646854067 Slip_1035 methyl-accepting chemotaxis sensory transducer		
					646854217 Slip_1189 methyl-accepting chemotaxis sensory transducer		
					646854763 Slip_1732 methyl-accepting chemotaxis sensory transducer		
					646854765 Slip_1734 response regulator receiver modulated CheB methylesterase		
					646855119 Slip_2092 methyl-accepting chemotaxis sensory transducer		
					646855154 Slip_2131 methyl-accepting chemotaxis sensory transducer with Cache sensor		
					646854009 Slip_0977 response regulator receiver modulated CheB methylesterase		
PHA biosynthesis							
SWMB_02134	putative enoyl-CoA hydratase echA8	638137527 Swol_0650 putative crotonase	98.4	0	646853532 Slip_0502 short chain enoyl-CoA hydratase (EC 4.2.1.17)	32.8	1E-42
SWMB_00384	putative enoyl-CoA hydratase echA8	638139450 Swol_2566 3-hydroxybutyryl-CoA dehydratase	87.4	3E-161	646855116 Slip_2089 Enoyl-CoA hydratase/isomerase	37.2	2E-44
SWMB_02135	putative acetoacetyl-CoA reductase	638137528 Swol_0651 oxidoreductase, short chain dehydrogenase/reductase family	94.8	6E-159	646853238 Slip_0202 short-chain dehydrogenase/reductase SDR	39.1	7E-54
SWMB_02626	putative acetoacetyl-CoA reductase	638138792 Swol_1910 3-oxoacyl-acyl-carrier-protein reductase (EC 111100)	29.6	7E-29	646854468 Slip_1447 3-oxoacyl-acyl-carrier-protein reductase (EC 1.1.1.100)	31.0	4E-34
SWMB_02933	putative acetoacetyl-CoA reductase	638138792 Swol_1910 3-oxoacyl-acyl-carrier-protein reductase (EC 111100)	96.8	2E-179	646854468 Slip_1447 3-oxoacyl-acyl-carrier-protein reductase (EC 1.1.1.100)	39.3	3E-58
SWMB_02672	poly(hydroxyalkanoate) granule-associated protein	638138081 Swol_1208 hypothetical protein	99.0	9E-66	646854419 Slip_1400 hypothetical protein	37.9	3E-21
SWMB_01774	Poly-beta-hydroxybutyrate polymerase	638137969 Swol_1099 poly(R)-hydroxyalkanoic acid synthase, class III, PhaC subunit	97.8	0			
SWMB_02363	Long-chain-fatty-acid--CoA ligase	638138017 Swol_1144 acyl-CoA synthase	93.6	0			
SWMB_02362	Poly-beta-hydroxybutyrate polymerase	638138018 Swol_1145 hypothetical protein	95.2	0			
SWMB_02763	Poly-beta-hydroxybutyrate polymerase	638138116 Swol_1241 poly(R)-hydroxyalkanoic acid synthase, class III, PhaC subunit	95.7	1E-130			
SWMB_02764	(R)-specific enoyl-CoA hydratase	638138117 Swol_1242 acyl dehydratase	100.0	2E-104	646855117 Slip_2090 MaoC domain protein dehydratase	47.4	3E-40
SWMB_02765	polyhydroxyalkanoic acid synthase, PhaR subunit	638138118 Swol_1243 hypothetical protein	91.4	4E-119			
SWMB_02766	poly(hydroxyalkanoate) granule-associated protein	638138119 Swol_1244 hypothetical protein	98.3	1E-78			
CRISPR-associated proteins							
SWMB_01201	putative CRISPR-associated RAMP protein, Csm4 family	638138635 Swol_1753 CRISPR-associated protein, Csm4 family	38.1	0.16			
SWMB_01202	CRISPR type III-A/MTUBE-associated RAMP protein Csm4	638138635 Swol_1753 CRISPR-associated protein, Csm4 family	29.2	1E-15			
SWMB_01203	CRISPR type III-A/MTUBE-associated RAMP protein Csm5	638138634 Swol_1752 CRISPR-associated protein, Csm5 family	25.7	0.0007			
SWMB_01204	putative CRISPR-associated protein Cas6	638139398 Swol_2514 conserved hypothetical cytosolic protein	31.6	3E-15			
SWMB_01205	putative CRISPR-associated protein Cas6	638139398 Swol_2514 conserved hypothetical cytosolic protein	46.3	4E-09			
SWMB_01206	CRISPR/Cas system-associated protein Csx1						
SWMB_01259	CRISPR-associated endoribonuclease Cas6				646854360 Slip_1341 CRISPR-associated protein, Cas6 family	27.8	3E-29
SWMB_01260	CRISPR-associated protein, family	638139406 Swol_2522 CRISPR-associated protein, Csh1 family	22.0	0.0001			
SWMB_01261	CRISPR-associated protein Cas7/Csh2, subtype I-B/HMARI	638139404 Swol_2520 CRISPR-associated protein, Csh2 family	26.8	4E-30	646854568 Slip_1545 CRISPR-associated protein, Csd2 family	26.1	0.00002
SWMB_01262	CRISPR-associated protein Cas5, subtype I-B/HMARI	638139403 Swol_2519 CRISPR-associated protein, Cas5h family	36.5	8E-16			
SWMB_01263	CRISPR-associated nuclease/helicase Cas3	638139402 Swol_2518 CRISPR-associated helicase, Cas3 family	25.8	1E-50	646854571 Slip_1548 CRISPR-associated helicase, Cas3 family	30.0	6E-55
SWMB_01552	CRISPR-associated endoribonuclease Cas6	638138692 Swol_1809 hypothetical protein, CRISPR-associated protein, Cas6 (Pfam PF01881)	93.0	5E-163	646854360 Slip_1341 CRISPR-associated protein, Cas6 family	28.8	0.17
SWMB_01553	CRISPR-associated protein Csh1	638138691 Swol_1808 hypothetical protein, csh1 CRISPR-associated protein Csh1	91.5	0			
SWMB_01554	CRISPR-associated protein Csh2	638138690 Swol_1807 hypothetical protein, CRISPR-associated protein TM1801 (Pfam PF05107)	97.5	0			
SWMB_01555	CRISPR-associated protein Cas5h	638138689 Swol_1806 CRISPR-associated protein, Cas5h family	94.3	3E-175			
SWMB_01556	CRISPR-associated endonuclease/helicase Cas3	638138688 Swol_1805 CRISPR-associated helicase, Cas3 family	93.3	0	646854571 Slip_1548 CRISPR-associated helicase, Cas3 family	24.3	8E-24
SWMB_01557	CRISPR-associated exonuclease Cas4	638138687 Swol_1804 CRISPR-associated exonuclease, Cas4 family	98.8	1E-118	646854364 Slip_1345 CRISPR-associated protein Cas4	31.9	2E-17
SWMB_01558	CRISP-associated protein Cas1	638138686 Swol_1803 cas1 CRISPR-associated protein, Cas1 family	97.0	0	646854363 Slip_1344 cas1 CRISPR-associated protein Cas1	36.9	3E-62
SWMB_01559	CRISPR-associated protein Cas2	638138685 Swol_1802 cas2 CRISPR-associated protein, Cas2 family	96.8	2E-64	646854565 cas2 CRISPR-associated protein, Cas2 family	32.6	2E-10
SWMB_01849	CRISPR-associated endoribonuclease Cas2	638139399 cas2 CRISPR-associated protein, Cas2 family	74.7	3E-44	646854362 Slip_1343 cas2 CRISPR-associated protein, Cas2 family	41.5	5E-23
SWMB_01850	CRISPR-associated endonuclease Cas1	638139400 cas1 CRISPR-associated protein, Cas1 family	74.2	1E-178	646854363 Slip_1344 cas1 CRISPR-associated protein Cas1	43.6	2E-94
SWMB_01851	CRISPR-associated protein Cas4	638139401 Swol_2517 CRISPR-associated exonuclease, Cas4 family	55.4	6E-67	646854364 Slip_1345 CRISPR-associated protein Cas4	39.3	1E-29

The gray bars indicate that there are no corresponding genes with significant similarity (<20%).

Table S3. *Syntrophomonas wolfei* subsp. *metylbutyratica* strain 4J5^T genes relevant to transport systems.

Locus Tag	Gene Product Name	TransportDB identifier	BLAST top hit in *Syntrophomonas wolfei* strain Goettingen			BLAST top hit in *Syntrophothermus lipocalidus* strain TGB-C1			
			Gene ID and annotation	Identity (%)	e-Value	Gene ID and annotation	TransportDB identifier	Identity (%)	e-Value
Tungstate									
SWMB_02195	tupA, vupA; tungstate transport system substrate-binding protein	ABC(binding protein)|3.A.1	638138507 Swol_1630 ABC-type tungstate transport system permease component-like protein	97.8	0	646854788 Slip_1758 extracellular solute-binding protein family 1	ABC(binding protein)|3.A.1	59.2	8E-107
SWMB_02196	tupC, vupC; tungstate transport system ATP-binding protein	ABC(ABC)|3.A.1	638138508 Swol_1631 phosphate ABC transporter ATP-binding protein	95.5	9E-167	646854789 Slip_1759 ABC transporter related protein	ABC(ABC)|3.A.1	63.0	1E-102
SWMB_02197	tupB, vupB; tungstate transport system permease protein	ABC(membrane)|3.A.1	638138509 Swol_1632 sulfate/tungstate uptake family ABC transporter, permease protein	98.7	4E-155	646854790 Slip_1760 binding-protein-dependent transport systems inner membrane component	ABC(membrane)|3.A.1	66.4	2E-104
Molybdate									
SWMB_00891	modA; molybdate transport system substrate-binding protein	ABC(binding protein)|3.A.1	638138436 Swol_1556 ABC-type molybdate transport system periplasmic component-like protein	24.8	3E-12				
SWMB_00892	modB; molybdate transport system permease protein	ABC(membrane)|3.A.1	638138435 Swol_1555 molybdenum ABC transporter, permease protein	33.3	6E-34				
SWMB_00893	wtpC; molybdate/tungstate transport system ATP-binding protein	ABC(ABC)|3.A.1	638138434 Swol_1554 molybdenum ABC transporter, ATP-binding protein	36.1	5.00E-43				
SWMB_02016	putative molybdopterin biosynthesis protein MoeA/LysR substrate binding protein	–	638138437 Swol_1557 molybdate-binding protein	92.1	0				
SWMB_02017	Molybdate-binding periplasmic protein precursor	ABC(binding protein)|3.A.1	638138436 Swol_1556 ABC-type molybdate transport system periplasmic component-like protein	92.4	0	646855146 Slip_2123 molybdenum ABC transporter, periplasmic molybdate-binding protein	ABC(binding protein)|3.A.1	50.7	1E-67
SWMB_02018	Molybdenum transport system permease protein ModB	ABC(membrane)|3.A.1	638138435 Swol_1555 molybdenum ABC transporter, permease protein	96.7	2E-168	646855145 Slip_2122 molybdate ABC transporter, inner membrane subunit	ABC(membrane)|3.A.1	54.3	2E-63
SWMB_02019	Sulfate/thiosulfate import ATP-binding protein CysA	ABC(ABC)|3.A.1	638138434 Swol_1554 molybdenum ABC transporter, ATP-binding protein	93.8	0	646855144 Slip_2121 ABC transporter related protein	ABC(ABC)|3.A.1	44.6	2E-55
Iron									
SWMB_02242	ABC.FEV.S; iron complex transport system substrate-binding protein	ABC(binding protein)|3.A.1	638138550 Swol_1673 ferrichrome-binding periplasmic protein	97.5	0				
SWMB_02243	bioB; biotin synthase	–	638138551 Swol_1674 hypothetical protein	96.8	0				
SWMB_02244	ABC.FEV.S; iron complex transport system substrate-binding protein	ABC(binding protein)|3.A.1	638138552 Swol_1675 hypothetical protein	96.5	0				
SWMB_02245	ABC.FEV.S; iron complex transport system substrate-binding protein	ABC(binding protein)|3.A.1	638138556 Swol_1679 periplasmic binding protein	69.7	0				
SWMB_02246	ABC.FEV.S; iron complex transport system substrate-binding protein	ABC(binding protein)|3.A.1	638138550 Swol_1673 ferrichrome-binding periplasmic protein	34.4	4E-54				
SWMB_02247	ABC.FEV.A; iron complex transport system ATP-binding protein	ABC(ABC)|3.A.1							
SWMB_02248	ABC.FEV.P; iron complex transport system permease protein	ABC(membrane)|3.A.1	638138553 Swol_1676 transport system permease protein	95.7	0				
SWMB_02249	bioB; biotin synthase	–	638138551 Swol_1674 hypothetical protein	31.8	3E-61				
SWMB_02145	Ferric uptake regulation protein	GBP|1.B.1	638137537 Swol_0660 Fe2+/Zn2+ uptake regulation proteins	93.8	3E-92	646854586 Slip_1558 ferric uptake regulator, Fur family	–	52.9	2E-50
SWMB_02146	feoB; ferrous iron transport protein B	FeoB|9.A.8	638137538 Swol_0661 Fe2+ transport system protein B-like protein	93.8	0	646854585 Slip_1557 small GTP-binding protein	FeoB|9.A.8	46.9	0
SWMB_02147	feoA; ferrous iron transport protein A	FeoB|9.A.8	638137539 Swol_0662 putative Fe2+ transport protein	96.2	1E-50	646854584 Slip_1556 FeoA family protein	Q7MV19_PORGI	38.0	4E-14
SWMB_02148	antiporter inner membrane protein	ABC(membrane)|3.A.1	638137540 Swol_0663 ATPases involved in chromosome partitioning-like protein	96.3	0				
SWMB_02149	putative ABC transporter ATP-binding protein	ABC(ABC)|3.A.1	638137541 Swol_0664 ABC transporter ATP-binding protein	98.4	0	646854583 Slip_1555 ABC transporter related protein	ABC(ABC)|3.A.1	62.8	2E-115
SWMB_02150	sufC; Fe-S cluster assembly ATP-binding protein	ABC(membrane)|3.A.1	638137542 Swol_0665 hypothetical protein	96.1	0	646854582 Slip_1554 SufBD protein	ABC(membrane)|3.A.1	61.9	9E-137
SWMB_02282	Ferrous iron transport protein B	FeoB|9.A.8	638138419 Swol_1539 nucleoside recognition proteinn	94.8	0				
SWMB_02283	Ferrous iron transport protein B	FeoB|9.A.8	638138418 Swol_1538 GTP-binding protein, HSR1-related	95.4	0				
SWMB_02284	FeoA domain protein	ABC(ABC)|3.A.1	638138417 Swol_1537 FeoA	79.5	1E-31				
SWMB_00434	Phosphoglycerate transport regulatory protein PgtC precursor	ABC(binding protein)|3.A.1	638139364 Swol_2479 ABC transporter, periplasmic substrate-binding protein	98.9	0				
SWMB_00435	sn-glycerol-3-phosphate import ATP-binding protein UgpC	ABC(ABC)|3.A.1	638139363 Swol_2478 thiamine transport system ATP-binding protein	99.4	0				
SWMB_00436	Molybdenum transport system permease protein ModB	ABC(membrane)|3.A.1	638139362 Swol_2477 ABC-type transporter permease protein	99.8	0				
SWMB_00437	Phosphoglycerate transport regulatory protein PgtC precursor	ABC(binding protein)|3.A.1	638139361 Swol_2476 ABC-type iron(III)-binding periplasmic protein precursor	97.5	0				
SWMB_01856	putative iron(III)|ABC-type Fe3+ transport system periplasmic component-like protein	ABC(binding protein)|3.A.1	638138562 Swol_1685 ABC-type Fe3+ transport system periplasmic component-like protein	94.4	0				
SWMB_02863	iron complex transport system permease protein	ABC(membrane)|3.A.1				646854481 Slip_1459 transport system permease protein	ABC(membrane)|3.A.1	40.1	8E-60
SWMB_02864	iron complex transport system substrate-binding protein	ABC(binding protein)|3.A.1				646854482 Slip_1460 periplasmic binding protein	ABC(binding protein)|3.A.1	24.9	1E-18
SWMB_02865	iron complex transport system ATP-binding protein	ABC(ABC)|3.A.1				646854480 Slip_1458 ABC transporter related protein	ABC(ABC)|3.A.1	35.8	8E-49
SWMB_01927	Ferrous iron transport protein B	FeoB|9.A.8							
SWMB_01928	ferrous iron transport protein A	FeoB|9.A.8							
SWMB_03066	ferrous iron transport protein B	FeoB|9.A.8							
Zinc									
SWMB_02367	TC.BAT2; bacterial/archaeal transporter family-2 protein	Q6M0K5_METMP	638138013 Swol_1140 protein of unknown function DUF606	95.9	6E-97	646854244 Slip_1216 protein of unknown function DUF606	Q6M0K5_METMP	60.1	1E-55
SWMB_02368	TC.ZIP, zupT, ZRT3, ZIP2; zinc transporter, ZIP family	ZIP|2.A.5	638138012 Swol_1139 hypothetical protein	96.2	6E-144	646854245 Slip_1217 zinc/iron permease	ZIP|2.A.5	47.8	3E-58
SWMB_02926	High-affinity zinc uptake system membrane protein ZnuB	ABC(membrane)|3.A.1	638138772 Swol_1889 ABC 3 transport family protein	96.2	1E-173	646854777 Slip_1747 ABC-3 protein	ABC(membrane)|3.A.1	33.3	6E-42
SWMB_02927	putative zinc transport system ATP-binding protein AdcC	ABC(ABC)|3.A.1	638138773 Swol_1890 ABC-type zinc transport system ATP-binding protein	95.4	0	646854776 Slip_1746 ABC transporter related protein	ABC(ABC)|3.A.1	36.3	1E-39
SWMB_02928	putative zinc transport system zinc-binding lipoprotein AdcA precursor	ABC(binding protein)|3.A.1	638138774 Swol_1891 cation ABC transporter, periplasmc-binding protein	95.1	0	646854775 Slip_1745 periplasmic solute binding protein	ABC(binding protein)|3.A.1	33.8	1E-48
Cobalt/nickel/magnesium									
SWMB_00627	ecfA1; energy-coupling factor transport system ATP-binding protein [EC:3.6.3.-]	ABC(ABC)|3.A.1	638139183 Swol_2302 ecfA putative ABC transporter	94.1	2E-180	646855228 Slip_2206 ABC transporter related protein	ABC(ABC)|3.A.1	42.1	9E-79
SWMB_00628	ecfA2; energy-coupling factor transport system ATP-binding protein [EC:3.6.3.-]	ABC(ABC)|3.A.1	638139182 Swol_2301 putative ABC transporter	91.6	0	646855227 Slip_2205 ABC transporter related protein	ABC(ABC)|3.A.1	41.3	1E-61
SWMB_00629	ecfT; energy-coupling factor transport system permease protein	ABC(membrane)|3.A.1	638139181 Swol_2300 cobalt ABC transporter permease protein	92.0	6E-151	646855226 Slip_2204 cobalt transport protein	ABC(membrane)|3.A.1	31.6	5E-41
SWMB_01248	ecfT; energy-coupling factor transport system permease protein	ABC(membrane)|3.A.1	638137916 Swol_1045 cobalt transport protein	90.3	0	646853359 Slip_0329 cobalt transport protein	ABC(membrane)|3.A.1	45.1	7E-82
SWMB_01249	ecfA1; energy-coupling factor transport system ATP-binding protein [EC:3.6.3.-]	ABC(ABC)|3.A.1	638137917 Swol_1046 ABC transporter related	90.2	0	646853360 Slip_0330 ABC transporter related protein	ABC(ABC)|3.A.1	54.0	0
SWMB_01282	putative Mg(2+) transport ATPase	P-ATPase|3.A.3	638137783 Swol_0917 cation transport ATPase	94.2	2E-102	646854093 Slip_1061 MgtC/SapB transporter	P-ATPase|3.A.3	40.9	9E-28
SWMB_01480	ecfA1; energy-coupling factor transport system ATP-binding protein [EC:3.6.3.-]	ABC(ABC)|3.A.1	638138835 Swol_1952 ABC transporter, ATP-binding protein	96.3	5E-175				
SWMB_01481	ecfA2; energy-coupling factor transport system ATP-binding protein [EC:3.6.3.-]	ABC(ABC)|3.A.1	638138834 Swol_1951 ABC-type cobalt transport system, ATPase component	96.9	2E-163				
SWMB_01482	ecfT; energy-coupling factor transport system permease protein	ABC(membrane)|3.A.1	638138833 Swol_1950 ABC-type cobalt transport system permease component CbiQ	98.3	2E-168				
SWMB_01483	ecfA1; energy-coupling factor transport system ATP-binding protein [EC:3.6.3.-]	ABC(ABC)|3.A.1	638138832 Swol_1949 ABC-type cobalt transport system, ATPase component	98.2	0	646853254 Slip_0220 ABC transporter related protein	ABC(ABC)|3.A.1	50.9	2E-95
SWMB_01484	ecfA2; energy-coupling factor transport system ATP-binding protein [EC:3.6.3.-]	ABC(ABC)|3.A.1	638138831 Swol_1948 ABC-type transporter, ATPase component	95.5	0	646853253 Slip_0219 ABC transporter related protein	ABC(ABC)|3.A.1	43.9	3E-84
SWMB_01485	ecfT; energy-coupling factor transport system permease protein	ABC(ABC)|3.A.1	638138830 Swol_1947 cobalt ABC transporter permease protein	96.9	0	646853255 Slip_0221 cobalt transport protein	ABC(membrane)|3.A.1	39.9	5E-61
SWMB_01799	Magnesium transporter MgtE	MgtE|9.A.19	638137951 Swol_1082 divalent cation transporter	98.2	0				
SWMB_02015	Magnesium transport protein CorA	MIT|1.A.35				646854392 corA magnesium and cobalt transport protein CorA	MIT|1.A.35	63.3	4E-153
SWMB_01835	cbiO; cobalt/nickel transport system ATP-binding protein	ABC(ABC)|3.A.1				646853404 Slip_0374 ABC transporter related protein	ABC(ABC)|3.A.1	64.5	4E-123
SWMB_01836	cbiQ; cobalt/nickel transport system permease protein	ABC(membrane)|3.A.1				646853405 Slip_0375 cobalt ABC transporter, inner membrane subunit CbiQ	ABC(membrane)|3.A.1	42.6	5E-68
SWMB_01837	cbiN; cobalt/nickel transport protein	Nickel permease				646853406 Slip_0376 hypothetical protein	Nickel permease	58.8	7E-39
SWMB_01838	cbiM; cobalt/nickel transport system permease protein	Nickel permease				646853407 Slip_0377 cobalamin (vitamin B12) biosynthesis CbiM protein	Nickel permease	65.2	5E-102
						646853961 Slip_0929 cobalt ABC transporter, ATPase subunit	ABC(ABC)|3.A.1		
						646853962 Slip_0930 cobalt ABC transporter, inner membrane subunit CbiQ	ABC(membrane)|3.A.1		
						646853963 Slip_0931 cobalt transport protein	ABC(binding protein)|3.A.1		
						646854029 Slip_0997 MgtC/SapB transporter	P-ATPase|3.A.3		
Phosphate									
SWMB_00438	Phosphate transport system permease protein PstC	ABC(membrane)|3.A.1							
SWMB_01279	Putative PhoU protein	F-ATPase|3.A.2	638137786 Swol_0920 hypothetical protein	98.1	1E-150	646854101 Slip_1070 Putitive phosphate transport regulator	IISP|3.A.5	61.1	2E-95
SWMB_02212	Low-affinity inorganic phosphate transporter 1	PiT|2.A.20	638138523 Swol_1646 phosphate transporter	97.6	0	646853713 Slip_0683 phosphate transporter	PiT|2.A.20	70.4	8E-157
						646853712 Slip_0682 Putitive phosphate transport regulator	ABC(membrane)|3.A.1		
SWMB_00754	pstS; phosphate transport system substrate-binding protein	ABC(binding protein)|3.A.1							
SWMB_00755	pstC; phosphate transport system permease protein	ABC(membrane)|3.A.1							
SWMB_00756	pstA; phosphate transport system permease protein	ABC(membrane)|3.A.1							
SWMB_00757	pstB; phosphate transport system ATP-binding protein [EC:3.6.3.27]	ABC(ABC)|3.A.1							
SWMB_01762	phoU; phosphate transport system protein	PNaS|2.A.58				646853402 Slip_0372 phosphate uptake regulator, PhoU	PNaS|2.A.58	56.5	1E-86
SWMB_01763	pstB; phosphate transport system ATP-binding protein [EC:3.6.3.27]	ABC(ABC)|3.A.1				646853401 Slip_0371 pstB phosphate ABC transporter ATP-binding protein	ABC(ABC)|3.A.1	71.9	3E-134
SWMB_01764	pstA; phosphate transport system permease protein	ABC(membrane)|3.A.1				646853400 Slip_0370 phosphate ABC transporter membrane protein 2	ABC(membrane)|3.A.1	58.2	2E-87
SWMB_01765	pstC; phosphate transport system permease protein	ABC(membrane)|3.A.1				646853399 Slip_0369 phosphate ABC transporter membrane protein 1	ABC(membrane)|3.A.1	65.7	9E-122
SWMB_01766	pstS; phosphate transport system substrate-binding protein	ABC(binding protein)|3.A.1				646853395 Slip_0365 phosphate ABC transporter substrate-binding protein	ABC(binding protein)|3.A.1	55.9	2E-107
SWMB_01767	phoR; two-component system	SSS|2.A.21				646853398 Slip_0368 multi-sensor signal transduction histidine kinase	SSS|2.A.21	45.2	4E-158
SWMB_01768	phoB1, phoP; two-component system	ABC(membrane)|3.A.1				646853397 Slip_0367 two component transcriptional regulator	ABC(membrane)|3.A.1	57.9	6E-87
Calcium/sodium									
SWMB_02139	putative calcium/sodium:proton antiporter	CaCA|2.A.19	638137531 Swol_0654 sodium/calcium exchanger membrane region	97.9	0	646854607 Slip_1580 sodium/calcium exchanger membrane region	CaCA|2.A.19	63.8	2E-141
SWMB_02947	Sodium:dicarboxylate symporter family	DAACS|2.A.23	638137199 Swol_0311 Na+/H+-dicarboxylate symporters-like protein	94.1	0				
Potassium									
SWMB_01981	potassium/proton antiporter	CPA1|2.A.36	638138469 Swol_1590 potassium/proton antiporter, CPA1 family (TC 2A36)	95.5	0				
SWMB_01919	Ktr system potassium uptake protein B	Trk|2.A.38	638137779 Swol_0913 K+ transporter trk	24.9	7E-07	646854516 Slip_1494 potassium uptake protein, TrkH family	Trk|2.A.38	45.8	3E-121
SWMB_01920	Ktr system potassium uptake protein A	VIC|1.A.1, Trk|2.A.38	638137780 Swol_0914 hypothetical protein	23.1	1E-07	646854515 Slip_1493 TrkA-N domain protein	VIC|1.A.1	47.0	2E-70
SWMB_01285	Trk system potassium uptake protein TrkA	VIC|1.A.1	638137780 Swol_0914 hypothetical protein	96.7	0				
SWMB_01286	Trk system potassium uptake protein TrkG	Trk|2.A.38	638137779 Swol_0913 K+ transporter trk	97.9	0				
SWMB_02711	Inner membrane protein YbaL	CPA2|2.A.37	638138051 Swol_1178 Kef-type potassium/proton antiporter	96.3	0	646854137 Slip_1106 Kef-type potassium/proton antiporter	CPA2|2.A.37	53.9	0
Nitrate/sulfonate/taurine									
SWMB_02887	Putative aliphatic sulfonates-binding protein precursor	ABC(binding protein)|3.A.1	638137227 Swol_0341 putative sulfonate transport system substrate-binding protein	95.4	0	646854054 Slip_1022 NMT1/THI5 like domain protein	ABC(binding protein)|3.A.1	30.3	7E-45
SWMB_02888	Putative aliphatic sulfonates transport permease protein SsuC	ABC(membrane)|3.A.1	638137226 Swol_0340 putative sulfonate transport system permease protein	97.2	3E-168	646854053 Slip_1021 binding-protein-dependent transport systems inner membrane component	ABC(membrane)|3.A.1	28.5	2E-29
SWMB_02889	Aliphatic sulfonates import ATP-binding protein SsuB	ABC(ABC)|3.A.1	638137225 Swol_0339 putative sulfonate transport system ATP-binding protein	94.8	4E-156	646854052 Slip_1020 ABC transporter related protein	ABC(ABC)|3.A.1	39.1	3.00E-44
SWMB_00497	Taurine import ATP-binding protein TauB	ABC(ABC)|3.A.1				646854349 Slip_1326 ABC transporter related protein	ABC(ABC)|3.A.1	48.4	1E-83
SWMB_00498	Putative aliphatic sulfonates transport permease protein SsuC	ABC(membrane)|3.A.1				646854350 Slip_1327 binding-protein-dependent transport systems inner membrane component	ABC(membrane)|3.A.1	30.0	7E-32
SWMB_00499	ABC transporter, substrate-binding protein, aliphatic sulfonates family	ABC(binding protein)|3.A.1				646854351 Slip_1328 aliphatic sulfonates family ABC transporter, periplasmic ligand-binding protein	ABC(binding protein)|3.A.1	25.0	0.001
Ammonium									
						646854598 Slip_1571 ammonium transporter	Amt|1.A.11		
						646855142 Slip_2119 ammonium transporter	Amt|1.A.11		
Glycine betaine/proline									
						646853664 Slip_0633 Substrate-binding region of ABC-type glycine betaine transport system	ABC(membrane)|3.A.1		
SWMB_01908	proW; glycine betaine/proline transport system permease protein	ABC(membrane)|3.A.1	638138613 Swol_1736 binding-protein-dependent transport systems inner membrane component	97.9	0	646853665 Slip_0634 binding-protein-dependent transport systems inner membrane component	ABC(membrane)|3.A.1	36.4	6E-25
						646853666 Slip_0635 binding-protein-dependent transport systems inner membrane component	ABC(membrane)|3.A.1		
SWMB_01909	proV; glycine betaine/proline transport system ATP-binding protein	ABC(ABC)|3.A.1	638138614 Swol_1737 putative glycine betaine ABC transporter ATP-binding protein	96.6	0	646853667 Slip_0636 glycine betaine/L-proline ABC transporter, ATPase subunit	ABC(ABC)|3.A.1	44.2	5E-60
SWMB_01910	proX; glycine betaine/proline transport system substrate-binding protein	ABC(binding protein)|3.A.1	638138615 Swol_1738 ABC transporter substrate-binding protein	96.0	0	646853668 Slip_0638 hypothetical protein	ABC(binding protein)|3.A.1	43.1	0.000001
Amino acids									
SWMB_00394	livK; branched-chain amino acid transport system substrate-binding protein	ABC(binding protein)|3.A.1	638139440 Swol_2556 amino acid/amide ABC transporter substrate-binding protein	96.9	0	646855387 Slip_2362 amino acid/amide ABC transporter substrate-binding protein	ABC(binding protein)|3.A.1	56.1	4E-144
SWMB_00395	livH; branched-chain amino acid transport system permease protein	ABC(membrane)|3.A.1	638139439 Swol_2555 amino acid/amide ABC transporter membrane protein 1	99.0	0	646855386 Slip_2361 amino acid/amide ABC transporter membrane protein 1	ABC(membrane)|3.A.1	74.9	1E-155
SWMB_00396	livM; branched-chain amino acid transport system permease protein	ABC(membrane)|3.A.1	638139438 Swol_2554 amino acid/amide ABC transporter membrane protein 2	98.8	0	646855385 Slip_2360 amino acid/amide ABC transporter membrane protein 2	ABC(membrane)|3.A.1	63.1	3E-143
SWMB_00397	livG; branched-chain amino acid transport system ATP-binding protein	ABC(ABC)|3.A.1	638139437 Swol_2553 amino acid/amide ABC transporter ATP-binding protein 1	99.2	8E-173	646855384 Slip_2359 amino acid/amide ABC transporter ATP-binding protein 1	ABC(ABC)|3.A.1	67.0	4E-110
SWMB_00398	livF; branched-chain amino acid transport system ATP-binding protein	ABC(ABC)|3.A.1	638139436 Swol_2552 amino acid/amide ABC transporter ATP-binding protein 2	97.9	2E-163	646855383 Slip_2358 amino acid/amide ABC transporter ATP-binding protein 2	ABC(ABC)|3.A.1	76.9	1E-132
SWMB_01054	livK; branched-chain amino acid transport system substrate-binding protein	ABC(binding protein)|3.A.1	638138994 Swol_2113 amino acid/amide ABC transporter substrate-binding protein	96.5	0	646853698 Slip_0668 amino acid/amide ABC transporter substrate-binding protein	ABC(binding protein)|3.A.1	77.2	0
SWMB_01055	livH; branched-chain amino acid transport system permease protein	ABC(membrane)|3.A.1	638138993 Swol_2112 amino acid/amide ABC transporter membrane protein 1	99.3	0	646853699 Slip_0669 amino acid/amide ABC transporter membrane protein 1	ABC(membrane)|3.A.1	76.3	2E-156
SWMB_01056	livM; branched-chain amino acid transport system permease protein	ABC(membrane)|3.A.1	638138992 Swol_2111 amino acid/amide ABC transporter membrane protein 2	98.3	0	646853700 Slip_0670 amino acid/amide ABC transporter membrane protein 2	ABC(membrane)|3.A.1	72.4	6E-154
SWMB_01057	livG; branched-chain amino acid transport system ATP-binding protein	ABC(ABC)|3.A.1	638138991 Swol_2110 amino acid/amide ABC transporter ATP-binding protein 1	98.0	1E-180	646853701 Slip_0671 amino acid/amide ABC transporter ATP-binding protein 1	ABC(ABC)|3.A.1	64.8	2E-113
SWMB_01058	carboxylate/amino acid/amine transporter	DMT|2.A.7	638138990 Swol_2109 hypothetical protein	96.9	0	646853702 Slip_0672 protein of unknown function DUF6 transmembrane	DMT|2.A.7	58.5	2E-105
SWMB_00992	Inner membrane protein YbiR	DASS|2.A.47	638139046 Swol_2166 possible tyrosine transporter P-protein (TC 2A4521)	97.6	0	646853277 Slip_0246 possible tyrosine transporter P-protein	DASS|2.A.47	64.8	0
SWMB_00489	metQ; D-methionine transport system substrate-binding protein	ABC(binding protein)|3.A.1	638139316 Swol_2432 hypothetical protein	93.2	0				
SWMB_00490	metI; D-methionine transport system permease protein	ABC(membrane)|3.A.1	638139315 Swol_2431 ABC metal ion transporter, inner membrane subunit	99.2	9E-167				
SWMB_00491	metN; D-methionine transport system ATP-binding protein	ABC(ABC)|3.A.1	638139314 Swol_2430 metN hypothetical protein	96.5	0				
SWMB_02034	Inner membrane amino-acid ABC transporter permease protein YecS	ABC(membrane)|3.A.1	638138616 Swol_1739 amino acid ABC transporter membrane protein	52.3	1E-56				
SWMB_02035	Arginine transport ATP-binding protein ArtM	ABC(ABC)|3.A.1	638138617 Swol_1740 amino acid ABC transporter ATP-binding protein	63.2	2E-104				
SWMB_02489	Glutamine transport ATP-binding protein GlnQ	ABC(ABC)|3.A.1	638137941 Swol_1072 amino acid ABC transporter ATP-binding protein	48.5	8E-79				
SWMB_02490	Inner membrane amino-acid ABC transporter permease protein YecS	ABC(membrane)|3.A.1	638137940 Swol_1071 amino acid ABC transporter membrane protein	42.7	9E-44				
SWMB_02491	ABC transporter arginine-binding protein 1 precursor	ABC(binding protein)|3.A.1	638137939 Swol_1070 amino acid ABC transporter substrate-binding protein	31.5	5E-30				
SWMB_02950	Glutamine transport ATP-binding protein GlnQ	ABC(ABC)|3.A.1	638137202 Swol_0314 amino acid ABC transporter ATP-binding protein	96.9	0				
SWMB_02951	Arginine transport system permease protein ArtQ	ABC(membrane)|3.A.1	638137203 Swol_0315 amino acid ABC transporter membrane protein	98.6	7E-152				
SWMB_02952	Polar amino acids-binding domain of ATP-binding cassette transporter-like systems	ABC(binding protein)|3.A.1	638137204 Swol_0316 amino acid ABC transporter substrate-binding protein	96.1	7E-180				
SWMB_01844	Glutamine transport ATP-binding protein GlnQ	ABC(ABC)|3.A.1	638137928 Swol_1059 amino acid ABC transporter ATP-binding protein	97.6	7E-178				
SWMB_01845	Inner membrane amino-acid ABC transporter permease protein YecS	ABC(membrane)|3.A.1							
SWMB_01846	Arginine-binding extracellular protein ArtP precursor	ABC(membrane)|3.A.1	639331168 Swol_1057 amino acid ABC transporter substrate-binding protein	98.2	0				
SWMB_01078	Inner membrane protein YbiR	DASS|2.A.47	638138972 Swol_2091 possible tyrosine transporter P-protein	96.9	0				
						646853655 Slip_0624 Lysine exporter protein (LYSE/YGGA)	RhtB|2.A.76		
						648021225 Slip_0690 amino acid ABC transporter ATP-binding protein	ABC(ABC)|3.A.1		
						648021263 Slip_2115 amino acid/polyamine/organocation transporter	APC|2.A.3		
Monosaccharide									
SWMB_01710	Ribose transport system permease protein RbsC	ABC(membrane)|3.A.1	638137304 Swol_0416 monosaccharide ABC transporter membrane protein	97.0	0				
SWMB_01711	ribose ABC transporter permease protein	ABC(membrane)|3.A.1	638137303 Swol_0415 monosaccharide ABC transporter membrane protein	96.5	0				
SWMB_01712	Xylose import ATP-binding protein XylG	ABC(ABC)|3.A.1	638137302 Swol_0414 monosaccharide ABC transporter ATP-binding protein	94.7	0				
			638137311 Swol_0423 monosaccharide ABC transporter substrate-binding protein			646853352 Slip_0322 monosaccharide ABC transporter substrate-binding protein	ABC(binding protein)|3.A.1	22.8	5E-10
			638137314 Swol_0426 monosaccharide ABC transporter ATP-binding protein			646853354 Slip_0324 monosaccharide ABC transporter ATP-binding protein	ABC(ABC)|3.A.1	34.7	3E-44
			638137313 Swol_0425 monosaccharide ABC transporter membrane protein			646853355 Slip_0325 monosaccharide ABC transporter membrane protein	ABC(membrane)|3.A.1	30.5	2E-32
			638137312 Swol_0424 monosaccharide ABC transporter membrane protein						
Biotin									
SWMB_00255	bioY; biotin transport system substrate-specific component	–	638137009 Swol_0108 hypothetical protein	99.5	4E-137	646853186 Slip_0142 BioY protein	BUT|2.A.88	50.0	1E-52
Cell division									
SWMB_00138	ftsX; cell division transport system permease protein	ABC(membrane)|3.A.1	638137142 Swol_0246 cell division protein FtsX	95.9	0	646854899 Slip_1871 cell division protein FtsX	ABC(membrane)|3.A.1	54.7	5E-109
SWMB_00139	ftsE; cell division transport system ATP-binding protein	ABC(ABC)|3.A.1	638137141 Swol_0245 cell division ATP-binding protein FtsE	97.4	7E-159	646854900 Slip_1872 cell division ATP-binding protein FtsE	ABC(ABC)|3.A.1	69.6	4E-113
Secretion system									
SWMB_00705	secD; preprotein translocase subunit SecD	RND|2.A.6	638138305 secD protein-export membrane protein SecD	98.0	0	646853784 secD protein-export membrane protein SecD	RND|2.A.6	63.9	3E-179
SWMB_00706	secF; preprotein translocase subunit SecF	RND|2.A.6	638138304 secF protein translocase subunit secF	95.4	0	646853785 secF protein translocase subunit secF	RND|2.A.6	55.7	1E-97
SWMB_00581	secE; preprotein translocase subunit SecE	IISP|3.A.5	638139229 secE protein translocase subunit secE/sec61 gamma	97.5	6E-52	646855274 secE preprotein translocase, SecE subunit	IISP|3.A.5	60.7	2E-20
SWMB_00109	secG; preprotein translocase subunit SecG	IISP|3.A.5	638137170 Swol_0277 preprotein translocase, SecG subunit	96.1	3E-45	646854875 Slip_1846 preprotein translocase, SecG subunit	IISP|3.A.5	65.8	3E-26
SWMB_00617	secY; preprotein translocase subunit SecY	IISP|3.A.5	638139194 secY protein translocase subunit secY/sec61 alpha	98.1	0	646855239 secY protein translocase subunit secY/sec61 alpha	IISP|3.A.5	77.0	0
SWMB_00703	yajC; preprotein translocase subunit YajC	IISP|3.A.5	638138307 Swol_1427 protein translocase subunit yajC	91.6	1E-42	646853782 Slip_0750 protein translocase subunit yajC	IISP|3.A.5	52.4	3E-27
SWMB_00376	yidC, spoIIIJ, OXA1; YidC/Oxa1 family membrane protein insertase	Oxa1|2.A.9	639331191 Swol_2574 protein translocase subunit yidC	98.1	6E-156	646855407 Slip_2382 protein translocase subunit yidC	Oxa1|2.A.9	54.2	9E-95
SWMB_00145	secA; preprotein translocase subunit SecA	IISP|3.A.5	638137135 secA protein translocase subunit secA	97.1	0	646854906 secA protein translocase subunit secA	IISP|3.A.5	74.5	0
SWMB_02811	ftsY; fused signal recognition particle receptor	IISP|3.A.5	638137648 ftsY signal recognition particle-docking protein FtsY	97.1	0	646854312 ftsY signal recognition particle-docking protein FtsY	IISP|3.A.5	65.9	7E-125
SWMB_00634	ffh; signal recognition particle subunit SRP54	IISP|3.A.5	638138374 ffh signal recognition particle subunit FFH/SRP54 (srp54)	98.9	0	646853939 ffh signal recognition particle subunit FFH/SRP54 (srp54)	IISP|3.A.5	76.2	0
Twin arginine targeting family									
SWMB_00685	tatA; sec-independent protein translocase protein TatA	Tat|2.A.64	638138323 tatA Sec-independent protein translocase TatA	97.3	3E-72	646853765 tatA Sec-independent protein translocase TatA	Tat|2.A.64	63.5	4E-19
SWMB_02167	tatC; sec-independent protein translocase protein TatC	Tat|2.A.64	638137558 tatC Sec-independent protein translocase TatC	97.2	0	646854456 tatC Sec-independent protein translocase TatC	Tat|2.A.64	56.8	2E-95

SWMB_02168	tatA; sec-independent protein translocase protein TatA	Tat|2.A.64	638137559 tatA twin-arginine translocation protein, TatA/E family	96.7	1E-35	646854451 tatA sec-independent translocation protein mttA/Hcf106	Tat|2.A.64	72.1	5E-18
Drug resistance-related									
SWMB_00197	Inner membrane transport permease YbhR	ABC(membrane)|3.A.1	638137079 Swol_0182 ABC-type multidrug transport system permease component	46.7	2E-128				
SWMB_00198	Inner membrane transport permease YbhR	ABC(membrane)|3.A.1	638137078 Swol_0181 ABC-type multidrug transport system permease component	51.0	2E-131	646853267 Slip_0236 ABC-2 type transporter	ABC(membrane)|3.A.1	31.3	4E-44
SWMB_00199	putative ABC transporter ATP-binding protein YbhF	ABC(ABC)|3.A.1	638137077 Swol_0180 ABC transporter related	50.0	1E-75	646853268 Slip_0237 ABC transporter related protein	ABC(ABC)|3.A.1	30.8	1.00E-29
SWMB_00200	Multidrug resistance protein MdtN	OMF|1.B.17	638137076 Swol_0179 secretion protein HlyD	65.1	8E-150	646853269 Slip_0238 secretion protein HlyD family protein	Q4VSJ3_BURGL	40.3	5E-61
SWMB_00737	putative ABC transporter permease YknZ	ABC(membrane)|3.A.1	638139342 Swol_2458 hypothetical protein	52.5	7E-137	646853259 Slip_0226 protein of unknown function DUF214	ABC(ABC)|3.A.1	48.1	3E-123
SWMB_00738	Macrolide export ATP-binding/permease protein MacB	ABC(ABC)|3.A.1	638139341 Swol_2457 ABC-type transport systems, involved in lipoprotein release	58.6	2E-90	646853260 Slip_0227 ABC transporter related protein	ABC(ABC)|3.A.1	56.9	3E-95
SWMB_00739	Macrolide-specific efflux protein MacA precursor	OMF|1.B.17	638139340 Swol_2456 hypothetical protein	32.6	1E-42	646853261 Slip_0228 efflux transporter, RND family, MFP subunit	OMF|1.B.17	31.7	4E-50
SWMB_00800	Metal-tetracycline/H(+) antiporter	MFS|2.A.1	638138235 Swol_1354 multidrug-efflux transporter	96.7	0	646853312 Slip_0281 major facilitator superfamily MFS 1	MFS|2.A.1	27.2	0.0000007
SWMB_00230	outer membrane channel protein	OMF|1.B.17	638137034 Swol_0134 hypothetical protein	31.4	2E-57	646854984 Slip_1958 outer membrane efflux protein	OMF|1.B.17	46.9	3E-105
SWMB_00508	Lipid II:glycine glycyltransferase	RND|2.A.6	638139301 Swol_2417 methicillin resistance protein	94.3	0	646855340 Slip_2315 Methicillin resistance protein	ABC(membrane)|3.A.1	60.7	2E-161
SWMB_01886	Lipoprotein-releasing system ATP-binding protein LolD	ABC(ABC)|3.A.1	638138592 Swol_1715 ATPase	93.2	8E-163	646854550 Slip_1527 ABC transporter related protein	ABC(ABC)|3.A.1	53.0	4E-86
SWMB_01885	lipoprotein releasing system, transmembrane protein, LolC/E family	ABC(membrane)|3.A.1	638138591 Swol_1714 hypothetical protein	95.6	0	646854551 Slip_1528 protein of unknown function DUF214	ABC(membrane)|3.A.1	29.9	2E-124
SWMB_01884	Macrolide-specific efflux protein MacA precursor	OMF|1.B.17	638138590 Swol_1713 Multidrug resistance efflux pump-like protein	92.6	0	646854552 Slip_1529 efflux transporter, RND family, MFP subunit	OMF|1.B.17	28.0	7E-35
SWMB_00472	Inner membrane transport permease YbhS	ABC(membrane)|3.A.1	638139333 Swol_2449 ABC-type multidrug transport system permease component	98.4	0	646853762 Slip_0730 ABC-2 type transporter	ABC(membrane)|3.A.1	79.4	0
SWMB_00473	putative ABC transporter ATP-binding protein YbhF	ABC(ABC)|3.A.1	638139332 Swol_2448 ABC transporter-related protein	95.2	0	646853761 Slip_0729 ABC transporter related protein	ABC(ABC)|3.A.1	56.5	7E-126
SWMB_00474	putative ABC transporter ATP-binding protein YbhF	ABC(ABC)|3.A.1	638139331 Swol_2447 ABC multidrug efflux pump, ATPase subunit	94.8	0	646853760 Slip_0728 ABC transporter related protein	ABC(ABC)|3.A.1	57.1	1E-120
SWMB_00475	Cation efflux system protein CzcB	P-ATPase|3.A.3	638139330 Swol_2446 secretion protein HlyD	93.4	0	646853759 Slip_0727 secretion protein HlyD family protein	OMF|1.B.17	51.8	3E-106
SWMB_00745	ABC-type transport system involved in multi-copper enzyme maturation, permease component	ABC(membrane)|3.A.1	638138264 Swol_1384 hypothetical protein	88.7	8E-92	646854320 Slip_1296 hypothetical protein	ABC(membrane)|3.A.1	30.5	0.032
SWMB_00746	ABC transporter ATP-binding protein YtrB	ABC(ABC)|3.A.1	638138263 Swol_1383 putative ABC transporter ATP-binding protein; RBL01943	94.1	0	646854321 Slip_1297 ABC transporter related protein	ABC(ABC)|3.A.1	31.3	8E-42
SWMB_00203	putative multidrug efflux system subunit MdtC	RND|2.A.6	638137073 Swol_0176 acriflavin resistance protein	99.6	0	646854982 Slip_1956 acriflavin resistance protein	RND|2.A.6	56.0	0
SWMB_00204	Macrolide-specific efflux protein MacA precursor	MFS|2.A.1	638137072 Swol_0175 hypothetical protein	95.3	0	646854983 Slip_1957 efflux transporter, RND family, MFP subunit	CNRB_ALCEU	38.9	4E-82
SWMB_00205	sodium/calcium exchanger 1	P-ATPase|3.A.3	638137071 Swol_0174 hypothetical protein	98.6	0				
SWMB_01122	Macrolide export ATP-binding/permease protein MacB	ABC(membrane)|3.A.1	638137817 Swol_0943 ABC transporter component-like protein	92.3	0				
SWMB_02076	Bacillibactin exporter	GPH|2.A.2	638137998 Swol_1125 drug resistance transporter, EmrB/QacA family protein	24.0	5E-06				
SWMB_02079	Multidrug-efflux transporter 1 regulator	ABC(ABC)|3.A.1	638138244 Swol_1364 hypothetical protein	22.6	4E-06				
SWMB_00952	Lactococcin-G-processing and transport ATP-binding protein LagD	ABC(membrane)|3.A.1	638139110 Swol_2230 hypothetical protein	97.2	0				
SWMB_00953	NHLM bacteriocin system secretion protein	ABC(membrane)|3.A.1	638139109 Swol_2229 hypothetical protein	97.0	5E-117				
SWMB_02518	Cation efflux system protein CzcA	RND|2.A.6	638137990 Swol_1118 multidrug efflux pump subunit AcrB	37.2	2E-44				
SWMB_02519	Multidrug transporter MdtC	RND|2.A.6	638137990 Swol_1118 multidrug efflux pump subunit AcrB	22.4	3E-06				
SWMB_02257	hypothetical protein	ABC(binding protein)|3.A.1	638138559 Swol_1682 hypothetical protein	91.06	2.00E-91				
SWMB_02258	Macrolide export ATP-binding/permease protein MacB	ABC(ABC)|3.A.1	638138560 Swol_1683 SN-glycerol-3-phosphate transport ATP-binding protein (UgpC)	93.4	9E-179				
SWMB_02949	Multidrug export protein MepA	MOP(MOP)|2.A.66	638137201 Swol_0313 hypothetical protein	95.1	0				
SWMB_02407	Na(+)/drug antiporter	MOP(MOP)|2.A.66	638137457 Swol_0575 MATE efflux family protein	97.6	0				
SWMB_00763	Bacitracin export permease protein BceB	ABC(membrane)|3.A.1							
SWMB_00764	Bacitracin export permease protein BceB	ABC(membrane)|3.A.1							
SWMB_02781	Macrolide export ATP-binding/permease protein MacB	ABC(ABC)|3.A.1							
SWMB_02782	ABC exporter transmembrane subunit, DevC protein	ABC(membrane)|3.A.1							
SWMB_01636	cysteine/glutathione ABC transporter membrane/ATP-binding component	ABC(membrane)|3.A.1							
SWMB_01637	Iron import ATP-binding/permease protein IrtA	ABC(membrane)|3.A.1							
SWMB_01638	Putative multidrug export ATP-binding/permease protein	ABC(membrane)|3.A.1							
SWMB_02494	ABC-type transport system involved in multi-copper enzyme maturation, permease component	MFS|2.A.1							
SWMB_02495	putative ABC transporter ATP-binding protein YxlF	ABC(ABC)|3.A.1							
SWMB_02599	Daunorubicin/doxorubicin resistance ABC transporter permease protein DrrB	ABC(membrane)|3.A.1				646854525 Slip_1503 ABC-2 type transporter	ABC(membrane)|3.A.1	21.8	0.00003
SWMB_02600	Daunorubicin/doxorubicin resistance ATP-binding protein DrrA	ABC(ABC)|3.A.1				646854526 Slip_1504 ABC transporter related protein	ABC(ABC)|3.A.1	41.2	2E-53
						646854062 Slip_1030 drug resistance transporter, EmrB/QacA subfamily	MFS|2.A.1		
						646855366 Slip_2340 drug resistance transporter, EmrB/QacA subfamily	MFS|2.A.1		
						646854250 Slip_1222 ABC-2 type transporter	ABC(membrane)|3.A.1		
						646854251 Slip_1223 daunorubicin resistance ABC transporter ATPase subunit	ABC(ABC)|3.A.1		
Other transporters									
SWMB_01088	Sulfite exporter TauE/SafE	TSUP|9.A.29	638138964 Swol_2083 permease	94.3	1E-143	646855214 Slip_2191 protein of unknown function DUF81	TSUP|9.A.29	39.9	1E-41
SWMB_01120	ABC transporter ATP-binding protein YtrE	ABC(ABC)|3.A.1	638137815 Swol_0941 ATP binding protein of ABC transporter	96.3	8E-154	646853136 Slip_0092 ABC transporter related protein	ABC(ABC)|3.A.1	46.0	4E-62
SWMB_01814	Putative K(+)-stimulated pyrophosphate-energized sodium pump	ABC(ABC)|3.A.1	638137933 hppA Inorganic diphosphatase	97.6	0	646853507 hppA Inorganic diphosphatase	H+-PPase|3.A.10	87.8	0
SWMB_01918	Arsenic efflux pump protein	DASS|2.A.47, ArsB|2.A.45	638139046 Swol_2166 possible tyrosine transporter P-protein (TC 2A4521)	23.2	2E-07	646854717 Slip_1687 possible tyrosine transporter P-protein	DASS|2.A.47, ArsB|2.A.45	58.1	2E-168
SWMB_02574	Mycobacterial copper transport protein B	ABC(membrane)|3.A.1	638137471 Swol_0592 hypothetical protein	98.3	0	646853474 Slip_0444 hypothetical protein	ABC(membrane)|3.A.1	47.1	8E-98
SWMB_02731	antiporter inner membrane protein	ABC(binding protein)|3.A.1	638138085 Swol_1211 nucleotide-binding protein	95.7	0	646853371 Slip_0341 ATPase-like, ParA/MinD	CAPB_STAAU	60.2	3E-115
SWMB_02901	ABC-type uncharacterized transport system, periplasmic component	ABC(binding protein)|3.A.1	638137212 Swol_0325 hypothetical protein	97.9	8E-26				
SWMB_02902	hypothetical protein	MC|2.A.29	638136994 Swol_0092 hypothetical protein	72.73	4.00E-05				
SWMB_02903	ABC-type uncharacterized transport system, periplasmic component	ABC(binding protein)|3.A.1	638137212 Swol_0325 hypothetical protein	98.7	1E-163	646854202 Slip_1174 protein of unknown function DUF534	ABC(binding protein)|3.A.1	77.1	8E-129
SWMB_02904	Autoinducer 2 import system permease protein LsrCS	ABC(membrane)|3.A.1	638137211 Swol_0324 hypothetical protein	96.4	2E-156	646854201 Slip_1173 inner-membrane translocator	ABC(membrane)|3.A.1	70.0	7E-99
SWMB_02905	Spermidine/putrescine import ATP-binding protein PotA	ABC(ABC)|3.A.1	638137210 Swol_0323 hypothetical protein	95.8	0	646854200 Slip_1172 ABC transporter related protein	ABC(ABC)|3.A.1	71.5	1E-139
SWMB_01254	putative cation efflux system protein c/MT2084	CDF|2.A.4	638137922 Swol_1051 putative cation efflux system protein	96.2	0	646853798 Slip_0766 cation diffusion facilitator family transporter	CDF|2.A.4	26.4	3E-22
SWMB_02352	MscS family inner membrane protein YnaI	MscS|1.A.23	638138027 Swol_1154 hypothetical protein	90.4	0	646853293 Slip_0262 MscS Mechanosensitive ion channel	MscS|1.A.23	48.2	1E-96
SWMB_00237	putative bicarbonate transporter, IctB family	CPA2|2.A.37	638137027 Swol_0127 hypothetical protein	94.0	0	646853204 Slip_0160 putative bicarbonate transporter, IctB family	Putative membrane protein	43.2	1E-169
SWMB_01893	gliding motility-associated ABC transporter permease protein GldF	ABC(membrane)|3.A.1	638138599 Swol_1722 hypothetical protein	94.2	0				
SWMB_01894	putative ABC transporter ATP-binding protein YbhF	ABC(ABC)|3.A.1	638138600 Swol_1723 ABC transporter ATP-binding protein	98.1	0	646853067 Slip_0021 ABC transporter related protein	ABC(ABC)|3.A.1	33.8	3E-54
SWMB_01074	ABC transporter, ATP-binding protein	ABC(ABC)|3.A.1	638138975 Swol_2094 ABC transporter, ATP-binding protein	96.7	0				
SWMB_02087	ABC-type transporter ATP-binding protein EcsA	ABC(ABC)|3.A.1	638138920 Swol_2038 ABC transporter ATP-binding protein	98.8	2E-179				
SWMB_00659	putative ABC transporter permease protein	ABC(membrane)|3.A.1	638138351 Swol_1473 iron(III) ABC transporter, permease protein	99.7	0				
SWMB_00660	putative ABC transporter ATP-binding protein	ABC(ABC)|3.A.1	638138350 Swol_1472 iron(III) ABC transporter, ATP-binding protein	98.1	0				
SWMB_01626	putative ABC transporter permease protein	ABC(membrane)|3.A.1	638138351 Swol_1473 iron(III) ABC transporter, permease protein	52.5	4E-110				
SWMB_01627	putative ABC transporter ATP-binding protein	ABC(ABC)|3.A.1	638138350 Swol_1472 iron(III) ABC transporter, ATP-binding protein	44.0	3E-69				
SWMB_01865	putative ABC transporter ATP-binding protein	ABC(ABC)|3.A.1	638138571 Swol_1694 ABC transporter related	96.0	0				
SWMB_01866	putative ABC transporter permease protein	ABC(membrane)|3.A.1	638138572 Swol_1695 transport system permease protein	96.6	0				
SWMB_00426	corrinoid ABC transporter substrate-binding protein	ABC(binding protein)|3.A.1	638139371 Swol_2486 ferrichrome-binding periplasmic protein	93.2	0				
SWMB_00431	Spermidine/putrescine import ATP-binding protein PotA	ABC(ABC)|3.A.1	638139366 Swol_2481 ABC transporter, ATP-binding protein	93.9	0				
SWMB_00432	Spermidine/putrescine transport system permease protein PotB	ABC(membrane)|3.A.1	638139365 Swol_2480 ABC transporter, permease protein, putative	95.6	0				
SWMB_00855	putative ABC transporter ATP-binding protein YbhF	ABC(ABC)|3.A.1	638139332 Swol_2448 ABC transporter-related protein	33.3	5E-51				
SWMB_00856	gliding motility-associated ABC transporter permease protein GldF	ABC(membrane)|3.A.1	638139333 Swol_2449 ABC-type multidrug transport system permease component	38.6	0.0008				
SWMB_00915	ABC transporter ATP-binding protein YtrB	ABC(ABC)|3.A.1	638139123 Swol_2243 ABC-type multidrug transport system ATPase component-like protein	94.9	0				
SWMB_00916	ABC-type transport system involved in multi-copper enzyme maturation, permease component	ABC(membrane)|3.A.1	638139122 Swol_2242 putative ABC-2 type transport system permease protein	96.6	0				
SWMB_00917	Putative heavy-metal-binding domain YbjQ_1	ABC(membrane)|3.A.1	638139121 Swol_2241 hypothetical protein	95.2	3E-66				
SWMB_00918	putative sulfoacetate transporter SauU	MFS|2.A.1	638139120 Swol_2240 putative permease	95.9	0				
SWMB_01071	ferrichrome/ferrioxamine B periplasmic transporter	ABC(binding protein)|3.A.1	638138978 Swol_2097 periplasmic binding protein	95.0	0				
SWMB_01139	putative DMT superfamily transporter inner membrane protein	DMT|2.A.7	638137834 Swol_0960 drug/metabolite transporter (DMT) superfamily permease	95.3	1E-179				
SWMB_01858	vitamin B12-transporter protein BtuF	ABC(binding protein)|3.A.1	638138564 Swol_1687 periplasmic binding protein	95.3	0				
SWMB_01860	iron-dicitrate transporter substrate-binding subunit	ABC(binding protein)|3.A.1	638138567 Swol_1690 periplasmic binding protein	64.8	0				
SWMB_01862	ferrichrome/ferrioxamine B periplasmic transporter	ABC(binding protein)|3.A.1	638138567 Swol_1690 periplasmic binding protein	94.5	0				
SWMB_02185	ABC-2 family transporter protein	ABC(ABC)|3.A.1	638138498 Swol_1619 hypothetical protein	94.8	2E-148				
SWMB_02186	SkfA peptide export ATP-binding protein SkfE	ABC(ABC)|3.A.1	638138499 Swol_1620 ABC transporter related	96.1	1E-166				
SWMB_02252	corrinoid ABC transporter substrate-binding protein	ABC(binding protein)|3.A.1	638138556 Swol_1679 periplasmic binding protein	97.5	0				
SWMB_02867	Neu5Ac permease	TRAP-T|2.A.56	638137215 Swol_0329 TRAP dicarboxylate transporter-DctM subunit	76.0	1E-130				
SWMB_02868	L-dehydroascorbate transporter large permease subunit	TRAP-T|2.A.56	638137215 Swol_0329 TRAP dicarboxylate transporter-DctM subunit	81.3	1E-41				
SWMB_02897	TRAP-type C4-dicarboxylate transport system, small permease component	TRAP-T|2.A.56	638137216 Swol_0330 tripartite ATP-independent periplasmic transporters, DctQ component	98.8	3E-113				
SWMB_02898	Neu5Ac permease	TRAP-T|2.A.56	638137215 Swol_0329 TRAP dicarboxylate transporter-DctM subunit	98.2	0				
SWMB_03030	putative ABC transporter ATP-binding protein YheS	ABC(ABC)|3.A.1	638138834 Swol_1951 ABC-type cobalt transport system, ATPase component	32.4	3E-07				
SWMB_00954	urea ABC transporter, permease protein UrtB	ABC(membrane)|3.A.1	638139108 Swol_2228 nucleoside ABC transporter membrane protein	97.7	1E-151				
SWMB_00955	L-arabinose transporter permease protein	ABC(membrane)|3.A.1							
SWMB_00956	Galactose/methyl galactoside import ATP-binding protein MglA	ABC(ABC)|3.A.1							
SWMB_01511	putative ABC transporter ATP-binding protein	ABC(membrane)|3.A.1							
SWMB_01512	putative ABC transporter ATP-binding protein	ABC(membrane)|3.A.1							
SWMB_00040	ABC transporter permease YtrF precursor	ABC(membrane)|3.A.1							
SWMB_00041	Lipoprotein-releasing system ATP-binding protein LolD	ABC(ABC)|3.A.1							
SWMB_02479	putative ABC-type exoprotein transport system, permease component	DMT|2.A.7							
SWMB_02480	ABC-type transporter ATP-binding protein EcsA	ABC(ABC)|3.A.1							
SWMB_01565	ABC-2 type transport system permease protein	APC|2.A.3				646854787 Slip_1757 hypothetical protein	ABC(membrane)|3.A.1	32.0	1E-52
SWMB_01566	ABC transporter ATP-binding protein YtrB	ABC(ABC)|3.A.1				646854786 Slip_1756 ABC transporter related protein	ABC(ABC)|3.A.1	50.8	7E-111
						646853066 Slip_0020 ABC-2 type transporter	ABC(membrane)|3.A.1		
						646853137 Slip_0093 efflux transporter, RND family, MFP subunit	OMF|1.B.17		
						646853138 Slip_0094 outer membrane efflux protein	OMF|1.B.17		
						646854195 Slip_1168 ABC transporter, ATPase, predicted	ABC(ABC)|3.A.1		
						646853949 Slip_0916 type III secretion exporter	FLHB_SALTY		
						646853613 Slip_0582 putative succinate-acetate transporter protein	DMT|2.A.7		
						646853657 Slip_0626 LAO/AO transport system ATPase	CDF|2.A.4		
						646853792 Slip_0760 LAO/AO transport system ATPase	CDF|2.A.4		

The gray bars indicate that there are no corresponding genes with significant similarity (<20%).

Table S4. *Syntrophomonas wolfei* subsp. *metylbutyratica* strain 4J5^T genes encoding β-oxidation pathway.

Locus tag	Gene product	Best BLAST hit in:					
		Syntrophomonas wolfei Goettingen			*Syntrophothermus lipocalidus* DSM 12680		
		Locus tag	%ID	e-value	Locus tag	%ID	e-value
Acyl-CoA dehydrogenase							
SWMB_00118	Acyl-CoA dehydrogenase	Swol_0268	99.2	0	Slip_0874	82.6	0
SWMB_00649	Acyl-CoA dehydrogenase	Swol_1483	98.7	0	Slip_0286	83.5	0
SWMB_01042	Acyl-CoA dehydrogenase	Swol_2126	98.7	0	Slip_0456	63.1	0
SWMB_01416	Acyl-CoA dehydrogenase	Swol_0788	99.7	0	Slip_0501	70.2	0
SWMB_01499	Acyl-CoA dehydrogenase, short-chain specific	Swol_1933	99.2	0	Slip_0881	72.0	0
SWMB_01701	Acyl-CoA dehydrogenase	Swol_0788	66.5	0	Slip_0501	73.9	0
SWMB_01732	Acyl-CoA dehydrogenase, short-chain specific	Swol_0384	97.7	0	Slip_0481	56.4	0
SWMB_01942	Acyl-CoA dehydrogenase	Swol_0788	44.3	1E-105	Slip_1241	75.3	0
SWMB_02100	Acyl-CoA dehydrogenase	Swol_2052	94.9	0	Slip_0881	71.6	0
SWMB_02510	Acyl-CoA dehydrogenase	Swol_0384	72.2	0	Slip_0481	54.9	0
Enoyl-CoA hydratase							
SWMB_00384	putative enoyl-CoA hydratase echA8	Swol_2566	87.4	3.00E-161			
SWMB_00648	2-methyl-but-2-enoyl-CoA hydratase	Swol_1484	97.3	0	Slip_2197	63.5	1.00E-120
SWMB_01414	putative enoyl-CoA hydratase echA8	Swol_0790	96.5	0	Slip_2197	63.1	1E-113
SWMB_01496	putative enoyl-CoA hydratase echA8	Swol_1936	98.9	0	Slip_2197	66.5	3E-122
SWMB_01703	2-methyl-but-2-enoyl-CoA hydratase	Swol_0790	42.3	1E-59	Slip_0502	65.6	1E-115
SWMB_02083	putative enoyl-CoA hydratase echA8	Swol_2031	97.7	0	Slip_2197	64.6	1E-115
SWMB_02134	putative enoyl-CoA hydratase echA8	Swol_0650	98.4	0			
SWMB_02508	2-methyl-but-2-enoyl-CoA hydratase	Swol_2031	67.3	9.00E-129	Slip_2197	56.9	8.00E-100
SWMB_03023	putative enoyl-CoA hydratase echA8	Swol_2031	45.8	9E-76	Slip_0502	68.0	2E-125
3-hydroxybutyryl-CoA dehydrogenase							
SWMB_00002	putative 3-hydroxybutyryl-CoA dehydrogenase	Swol_0307	99.3	0	Slip_0503	54.6	9E-107
SWMB_00647	2-methyl-3-hydroxybutyryl-CoA dehydrogenase	Swol_1485	97.5	0	Slip_0285	82.9	6E-168
SWMB_01413	putative 3-hydroxybutyryl-CoA dehydrogenase	Swol_0791	98.6	0	Slip_1415	56.8	2E-112
SWMB_01497	putative 3-hydroxybutyryl-CoA dehydrogenase	Swol_1935	99.3	0	Slip_1415	82.4	5E-172
SWMB_01704	2-methyl-3-hydroxybutyryl-CoA dehydrogenase	Swol_0435	93.0	7.00E-129	Slip_0503	71.3	7E-123
SWMB_01947	putative 3-hydroxybutyryl-CoA dehydrogenase	Swol_0435	61.8	1.00E-84	Slip_1238	73.2	2E-145
SWMB_02082	putative 3-hydroxybutyryl-CoA dehydrogenase	Swol_2030	99.3	0	Slip_0503	55.6	5E-109
SWMB_02507	2-methyl-3-hydroxybutyryl-CoA dehydrogenase	Swol_0791	68.8	9E-139	Slip_0503	54.6	5E-103
SWMB_02718	putative 3-hydroxybutyryl-CoA dehydrogenase	Swol_1171	96.8	0	Slip_1415	53.4	5E-107
Acetyl-CoA acetyltransferase							
SWMB_00001	Acetyl-CoA acetyltransferase	Swol_0308	97.5	0	Slip_0499	59.9	9E-172
SWMB_00646	2-methyl-acetoacetyl-CoA acetyltransferase	Swol_1486	97.8	0	Slip_0284	62.8	1E-163
SWMB_01415	Acetyl-CoA acetyltransferase	Swol_0789	98.0	0	Slip_0499	66.8	0
SWMB_01498	Acetyl-CoA acetyltransferase	Swol_1934	98.0	0	Slip_0880	79.8	0
SWMB_01702	2-methyl-acetoacetyl-CoA acetyltransferase	Swol_0789	74.5	0	Slip_0499	66.5	0
SWMB_01946	Acetyl-CoA acetyltransferase	Swol_0789	72.7	0	Slip_0499	68.4	0
SWMB_02099	Acetyl-CoA acetyltransferase	Swol_2051	95.7	0	Slip_0880	81.1	0
SWMB_02161	Acetyl-CoA acetyltransferase	Swol_0675	99.5	0	Slip_0499	67.3	0
SWMB_02509	2-methyl-acetoacetyl-CoA acetyltransferase	Swol_0675	62.6	0	Slip_0499	65.8	0
CoA transferase							
SWMB_00469	Succinyl-CoA:coenzyme A transferase	Swol_0436	72.0	0	Slip_0882	62.0	0
SWMB_00650	Acyl-CoA:acetate/3-ketoacid CoA transferase	Swol_1482	96.0	0	Slip_0287	80.9	0
SWMB_00651	Acyl-CoA:acetate/3-ketoacid CoA transferase	Swol_1481	99.3	0	Slip_0288	80.8	8E-167
SWMB_01218	Succinyl-CoA:coenzyme A transferase	Swol_1014	96.2	0	Slip_0882	57.3	0
SWMB_01500	Succinyl-CoA:coenzyme A transferase	Swol_1932	99.8	0	Slip_0882	56.5	0
SWMB_01699	Acyl-CoA:acetate/3-ketoacid CoA transferase	Swol_0436	97.3	0	Slip_0882	60.8	0
SWMB_01700	Acyl-CoA:acetate/3-ketoacid CoA transferase	Swol_0309	50.3	3.00E-162	Slip_0500	50.3	9E-164
SWMB_01907	Succinyl-CoA:coenzyme A transferase	Swol_1735	98.6	0	Slip_0665	40.2	2E-108
SWMB_01923	butyryl-CoA:acetate CoA-transferase	Swol_1744	95.9	1E-119	Slip_0665	31.9	1E-24
SWMB_02359	Succinyl-CoA:coenzyme A transferase	Swol_1147	96.7	0	Slip_0500	62.6	0
SWMB_02505	Acyl-CoA:acetate/3-ketoacid CoA transferase	Swol_1147	63.1	0	Slip_0500	59.2	0
SWMB_03019	butyryl-CoA:acetate CoA-transferase	Swol_1932	34.3	2E-11	Slip_0882	29.1	0.0000007
SWMB_03052	Succinyl-CoA:coenzyme A transferase	Swol_0787	98.2	4E-123	Slip_0500	73.1	0
Acetate kinase/phosphotransacetylase gene cassette							
SWMB_02801	Phosphate acetyltransferase (phosphotransacetylase)	Swol_0767	98.48	0	Slip_0902	77.9	0
SWMB_02802	Acetate kinase	Swol_0768	98.5	0	Slip_0903	82.1	0
Acyl-CoA synthetase							
SWMB_02363	Long-chain-fatty-acid--CoA ligase (for PHA metabolism?)	Swol_1144	93.6	0	Slip_0583	25.9	4E-26
SWMB_02710	Long-chain-fatty-acid--CoA ligase FadD13 (for coenzyme A biosynthesis?)	Swol_1180	99.3	0	Slip_1686	64.4	0

The gray bars indicate that there are no corresponding genes with significant similarity (<20%).

Table S5. *Syntrophothermus lipocalidus strain* TGB-C1 genes encoding β-oxidation pathway.

Locus tag	Gene product	Best BLAST hit in:					
		Syntrophomonas wolfei Goettingen			*Syntrophomonas wolfei* subsp.*metylbutyratica* JCM14075T		
		Locus tag	%ID	e-value	Locus tag	%ID	e-value
Acyl-CoA dehydrogenase							
Slip_0286	acyl-CoA dehydrogenase	Swol_1483	84.3	0	SWMB_00649	83.5	0
Slip_0481	acyl-CoA dehydrogenase	Swol_0384	57.0	0	SWMB_02510	54.9	0
Slip_0501	acyl-CoA dehydrogenase	Swol_0788	70.2	0	SWMB_01701	73.9	0
Slip_0581	acyl-CoA dehydrogenase domain protein	Swol_0788	34.8	4.00E-66	SWMB_01701	37.4	9.00E-72
Slip_0881	acyl-CoA dehydrogenase	Swol_1933	72.1	0	SWMB_01499	72.0	0
Slip_0884	acyl-CoA dehydrogenase						
Slip_1241	Butyryl-CoA dehydrogenase	Swol_0788	44.5	9.00E-112	SWMB_01942	75.3	0
Slip_1986	acyl-CoA dehydrogenase						
Slip_1987	short-chain dehydrogenase/reductase						
Slip_2083	acyl-CoA dehydrogenase						
Slip_2087	short-chain dehydrogenase/reductase						
Enoyl-CoA hydratase							
Slip_0485	short chain enoyl-CoA hydratase						
Slip_0486	Enoyl-CoA hydratase/isomerase						
Slip_0490	Enoyl-CoA hydratase						
Slip_0502	short chain enoyl-CoA hydratase	Swol_2031	50.4	2.00E-83	SWMB_03023	68.0	2.00E-125
Slip_0580	enoyl-CoA hydratase/isomerase	Swol_2031	47.7	9.00E-79	SWMB_01498	48.1	2.00E-77
Slip_1234	3-hydroxybutyryl-CoA dehydratase	Swol_1936	43.5	4.00E-72	SWMB_01090	30.1	7.00E-22
Slip_1989	Enoyl-CoA hydratase/isomerase						
Slip_2089	Enoyl-CoA hydratase/isomerase	Swol_2566	36.6	5.00E-41	SWMB_00384	37.2	2.00E-44
Slip_2197	short chain enoyl-CoA hydratase	Swol_1936	67.3	3.00E-123	SWMB_01496	66.5	3.00E-122
3-hydroxybutyryl-CoA dehydrogenase							
Slip_0285	3-hydroxyacyl-CoA dehydrogenase	Swol_1485	83.7	1.00E-180	SWMB_00647	82.6	7.00E-180
Slip_0503	3-hydroxyacyl-CoA dehydrogenase	Swol_1935	55.6	4.00E-109	SWMB_01704	71.3	1.00E-150
Slip_0579	3-hydroxyacyl-CoA dehydrogenase NAD-binding protein	Swol_1935	47.3	3.00E-92	SWMB_01497	47.3	5.00E-92
Slip_1238	3-hydroxybutyryl-CoA dehydrogenase	Swol_1935	54.7	1.00E-110	SWMB_01947	73.2	2.00E-101
Slip_1415	3-hydroxybutyryl-CoA dehydrogenase	Swol_1935	82.8	2.00E-172	SWMB_01497	82.4	5.00E-172
Slip_2088	putative 3-hydroxybutyryl-CoA dehydrogenase						
Acetyl-CoA acetyltransferase							
Slip_0284	acetyl-CoA acetyltransferase	Swol_1486	62.8	2.00E-177	SWMB_00646	62.8	8.00E-178
Slip_0464	Propanoyl-CoA C-acyltransferase						
Slip_0465	Acetyl-CoA acetyltransferase						
Slip_0479	Acetyl-CoA acetyltransferase						
Slip_0499	Acetyl-CoA acetyltransferase	Swol_0675	67.0	0	SWMB_02161	67.3	0
Slip_0577	putative acetyl-CoA acetyltransferase	Swol_2051	28.2	1.00E-33	SWMB_01702	30.0	1.00E-34
Slip_0880	Acetyl-CoA acetyltransferase	Swol_2051	80.3	0	SWMB_02099	81.1	0
Slip_1111	Acetyl-CoA acetyltransferase				SWMB_01090	64.2	1.00E-180
Slip_1236	Acetyl-CoA acetyltransferase	Swol_2051	22.9	8.00E-11	SWMB_01703	47.1	7.00E-85
Slip_1985	acetyl-CoA acetyltransferase						
Slip_1988	acetyl-CoA acetyltransferase						
Slip_2084	Crotonobetainyl-CoA:carnitine CoA-transferase CaiB and related acyl-CoA transferases						
Slip_2085	acetyl-CoA acetyltransferase						
CoA transferase							
Slip_0098	putative acyl CoA:acetate/3-ketoacid CoA transferase, alpha subunit				SWMB_01948	72.4	6.00E-67
Slip_0099	putative acyl CoA:acetate/3-ketoacid CoA transferase, beta subunit						
Slip_0287	coenzyme A transferase	Swol_1482	78.5	0	SWMB_00650	80.9	0
Slip_0288	putative acyl CoA:acetate/3-ketoacid CoA transferase	Swol_1481	80.4	4.00E-166	SWMB_00651	80.8	8.00E-167
Slip_0500	acetyl-CoA hydrolase/transferase	Swol_0309	74.7	0	SWMB_03052	73.1	0
Slip_0578	putative CoA-transferase family III						
Slip_0665	putative 4-hydroxybutyrate CoA-transferase	Swol_1744	40.1	9.00E-109	SWMB_01907	40.2	2.00E-108
Slip_1192	coenzyme A transferase						
Slip_1193	coenzyme A transferase						
Slip_1195	putative acyl CoA:acetate/3-ketoacid CoA transferase beta subunit						
Slip_1196	putative acyl CoA:acetate/3-ketoacid CoA transferase alpha subunit						
Slip_1239	Acyl-CoA:acetate/3-ketoacid CoA transferase	Swol_1481	41.4	7.00E-54	SWMB_00651	41.4	9.00E-54
Slip_1240	Acyl-CoA:acetate/3-ketoacid CoA transferase	Swol_1482	29.1	3.00E-29	SWMB_01944	30.7	2.00E-35
Slip_1981	CoA-transferase family III domain						
Acetate kinase/phosphotransacetylase gene cassette							
Slip_0902	Phosphate acetyltransferase (phosphotransacetylase)	Swol_0767	76.7	0	SWMB_02801	77.9	0
Slip_0903	Acetate kinase	Swol_0768	82.12	0	SWMB_02802	82.1	0
Isomerization							
Slip_0757	Cob(I)alamin adenosyltransferase						
Slip_0758	Isobutyryl-CoA mutase, N-terminal domain subunit						
Slip_0759	Isobutyryl-CoA mutase, C-terminal domain subunit (cobalamin B12-binding domain protein)						
Slip_0760	LAO/AO transport system ATPase, MeaB-like protein						
Acyl-CoA synthetase							
Slip_1686	Acyl-CoA synthetase (AMP-forming)/AMP-acid ligase II (for coenzyme A biosynthesis?)	Swol_1180	64.4	0	SWMB_02710	64.4	0
Slip_0583	Acyl-CoA synthetase (AMP-forming)/AMP-acid ligase II	Swol_1180	31.1	6.00E-67	SWMB_02710	30.6	5.00E-72
Slip_0475	Acyl-CoA synthetase (AMP-forming)/AMP-acid ligase II						

The gray bars indicate that there are no corresponding genes with significant similarity (<20%).

Table S6. *Syntrophomonas wolfei* subsp. *metylbutyratica* strain 4J5^T genes encoding syntrophic electron flow.

Locus tag in JCM14075	Predicted product	*Syntrophomonas wolfei* Goettingen			*Syntrophothermus lipocalidus* TGB-C1			Locus tag in TGB-C1	Predicted product	Closely related strain		
		Locus Tag	%ID	e-value	Locus Tag	%ID	e-value			Locus Tag	%ID	e-value
Electron-bifurcating [FeFe] hydrogenase (H$^+$ + NADH + Fd$_{red}$ <=> H$_2$ +NAD$^+$ +Fd$_{ox}$)												
SWMB_01221	Fe-only hydrogenase	Swol_1017	98.1	0	Slip_0125	81.4	0					
SWMB_01222	NADH:UQ oxidoreductase, 51 kDa subunit	Swol_1018	98.5	0	Slip_0124	76.6	0					
SWMB_01223	NADH:UQ oxidoreductase, 24 kDa subunit	Swol_1019	98.0	8E-104	Slip_0123	73.5	2E-72					
Ferredoxin [FeFe] hydrogenase (H$^+$ + Fd$_{red}$ <=> H$_2$ + Fd$_{ox}$)												
SWMB_00486	NADP-reducing hydrogenase subunit HndC	Swol_2436	97.5	0	Slip_0543	82.4	0					
Periplasmic [FeFe] hydrogenase (MQ <=> H$_2$)												
SWMB_01505	Cytochrome b(N-terminal)/b6/petB	Swol_1927	95.6	3E-154	Slip_1532	71.2	3E-120					
SWMB_01506	Periplasmic [Fe] hydrogenase small subunit precursor	Swol_1926	92.3	1E-79	Slip_1533	68.7	5E-57					
SWMB_01507	Periplasmic [Fe] hydrogenase large subunit	Swol_1925	93.6	0	Slip_1534	76.6	0					
Periplasmic [NiFe] hydrogenase (MQ <=> H$_2$)												
SWMB_01823	Hydrogenase expression/formation protein HypE				Slip_0392	64.6	1E-158					
SWMB_01824	Hydrogenase expression/formation protein HypD				Slip_0391	67.4	1E-179					
SWMB_01825	Hydrogenase isoenzymes formation protein HypC				Slip_0390	65.3	3E-32					
SWMB_01826	[NiFe] hydrogenase maturation protein HypF				Slip_0389	63.9	0					
SWMB_01827	Hydrogenase 2 maturation protease				Slip_0388	47.4	3E-45					
SWMB_01828	putative Ni/Fe-hydrogenase 1 B-type cytochrome subunit, hyaC				Slip_0387	71.2	2E-107					
SWMB_01829	Periplasmic [NiFeSe] hydrogenase large subunit, hyaB				Slip_0386	70.5	0					
SWMB_01830	Periplasmic [NiFe] hydrogenase large subunit precursor, hyaA				Slip_0385	73.0	4E-18					
SWMB_01831	Periplasmic [NiFeSe] hydrogenase small subunit precursor				Slip_0384	76.9	0					
SWMB_01832	Hydrogenase isoenzymes nickel incorporation protein HypB				Slip_0384	59.7	1E-92					
SWMB_01833	Hydrogenase nickel incorporation protein HypA/HybF				Slip_0383	49.1	2E-37					
Energy conserving hydrogenase, Ech (H$^+$ + Fd$_{red}$ <=> H$_2$ + Fd$_{ox}$)										*Thermacetogenium phaeum* PB		
								Slip_0655	echA ech hydrogenase subunit A	Tph_c21360	41.6	3E-141
								Slip_0656	echB ech hydrogenase subunit B	Tph_c21350	50.4	5E-87
								Slip_0657	echC ech hydrogenase subunit C	Tph_c21340	66.2	4E-65
								Slip_0658	echD ech hydrogenase subunit D	Tph_c21330	34.8	1E-15
								Slip_0659	echE ech hydrogenase subunit E	Tph_c21320	54.4	5E-139
								Slip_0660	NADH:ubiquinone reductase (H(+)-translocating)	Tph_c21310	41.5	1E-20
Formate dehydrogenase O (Formate <=> MQ)												
SWMB_01402	Molybdopterin molybdenumtransferase	Swol_0802	95.5	0	Slip_0566	52.8	7E-152					
SWMB_01403	Molybdopterin molybdenumtransferase	Swol_0801	95.5	0	Slip_0567	56.9	0					
SWMB_01404	Formate dehydrogenase subunit alpha precursor, fdoG	Swol_0800	96.2	1E-152	Slip_1434	77.5	9E-115					
SWMB_01405	Formate dehydrogenase subunit alpha precursor, fdoG	Swol_0799	96.9	0	Slip_1434	70.4	0					
SWMB_01406	Formate dehydrogenase-N subunit beta, fdoH	Swol_0798	98.5	0	Slip_1433	58.1	5E-121					
SWMB_01407	Formate dehydrogenase-N subunit gamma, fdoI	Swol_0797	99.6	5E-169	Slip_1432	74.0	7E-125					
SWMB_01408	formate dehydrogenase accessory protein FdhE	Swol_0796	95.3	0	Slip_1431	35.4	1E-67					
SWMB_01533	Formate dehydrogenase subunit alpha precursor, fdoG	Swol_1826	98.5	8E-145								
SWMB_01535	Formate dehydrogenase, nitrate-inducible, major subunit precursor, fdoG	Swol_1825	92.5	0								
SWMB_01536	Formate dehydrogenase-N subunit beta, fdoH	Swol_1824	93.3	0								
SWMB_01537	Formate dehydrogenase-O subunit gamma, fdoI	Swol_1823	96.4	3E-158								
SWMB_01538	formate dehydrogenase accessory protein FdhE	Swol_1822	93.3	4E-180								
SWMB_01539	putative molybdopterin biosynthesis protein MoeA/LysR substrate binding-d	Swol_1821	94.9	0								
Electron-bifurcating formate dehydrogenase (CO$_2$ + NADH + Fd$_{red}$ <=> Formate +NAD$^+$ +Fd$_{ox}$)												
SWMB_02818	NADH-quinone oxidoreductase subunit E	Swol_0783	96.0	4E-103								
SWMB_02819	NADP-reducing hydrogenase subunit HndC	Swol_0784	98.3	0								
SWMB_02820	Putative formate dehydrogenase/NADH-ubiquinone oxidoreductase-G	Swol_0785	97.2	0								
SWMB_02821	Formate dehydrogenase H	Swol_0786	98.3	0								
SWMB_01527	Putative formate dehydrogenase	Swol_1831	98.6	0								
SWMB_01528	Formate dehydrogenase H	Swol_1830	98.0	0								
SWMB_01529	NADP-reducing hydrogenase subunit HndA	Swol_1829	96.6	2E-103								
SWMB_01530	NADP-reducing hydrogenase subunit HndC	Swol_1828	98.8	0								
SWMB_01228	NADP-reducing hydrogenase subunit HndC	Swol_1024	98.5	0								
SWMB_01229	NADP-reducing hydrogenase subunit HndA	Swol_1025	97.3	3E-106								
SWMB_01230	Molybdopterin molybdenumtransferase	Swol_1026	94.5	0								
SWMB_01231	bifunctional molybdenum cofactor biosynthesis protein MoaC/MogA	Swol_1027	96.5	0								
SWMB_01232	Formate dehydrogenase H	Swol_1028	98.7	0								
SWMB_01233	Putative formate dehydrogenase	Swol_1029	98.9	0								
NAD-dependent formate dehydrogenase (CO$_2$ + NADH <=> Formate +NAD$^+$)										*S. wolfei* subsp. *metylbutyratica* JCM14075		
								Slip_1031	Formate dehydrogenase (NADP) alpha subunit	SWMB_02820	66.7	0
								Slip_1032	Formate dehydrogenase (NADP) alpha subunit	SWMB_02821	69.4	0
Flox-Hdr system												
SWMB_01721	Heterodisulfide reductase subunit C (HdrC)	Swol_0394	100.0	4E-139	Slip_2075	63.4	2E-86					
SWMB_01720	Heterodisulfide reductase subunit B (HdrB)	Swol_0395	92.1	0	Slip_2074	65.9	6E-142					
SWMB_01719	Heterodisulfide reductase subunit A (HdrA)	Swol_0396	99.0	5E-144								
SWMB_01718	Heterodisulfide reductase subunit A (HdrA)	Swol_0397	98.9	0	Slip_2073	75.5	0					
SWMB_01717	Hydrogenase subunit D (HydD)	Swol_0398-0399	97.1	4E-47	Slip_2072	74.7	1E-34					
SWMB_01716	Hydrogenase subunit B (HydB)	Swol_0400	98.3	0	Slip_2071	61.2	2E-143					
SWMB_01715	Flavoprotein oxidoreductase subunit A (FloxA)	Swol_0401	97.6	0	Slip_2070	55.5	2E-134					
SWMB_01714	Flavoprotein oxidoreductase subunit B (FloxB)	Swol_0402	98.2	0	Slip_2069	76.4	5E-162					
Fix system (+AD)												
SWMB_01042	acyl-CoA dehydrogenase	Swol_2126	98.7	0	Slip_0874	38.6	3E-87					
SWMB_01043	ETF-ubiquinone oxidoreductase (FixC)	Swol_2124	98.4	0	Slip_0877	47.9	3E-127					
SWMB_01044	Ferredoxin (FixX)	Swol_2123	95.7	2E-63	Slip_0878	42.4	4E-16					
SWMB_01045	Electron transfer flavoprotein β subunit (FixA)	Swol_2122	94.4	2E-148	Slip_0875	35.5	2E-38					
SWMB_01046	Electron transfer flavoprotein α subunit (FixB)	Swol_2121	96.5	0	Slip_0876	36.6	4E-58					
Fix system (+AD/EH/CT)										*S. wolfei* subsp. *metylbutyratica* JCM14075		
								Slip_0455	acyl-CoA dehydrogenase			
								Slip_0456	acyl-CoA dehydrogenase	SWMB_01042	63.1	2E-178
								Slip_0457	ETF-ubiquinone oxidoreductase (FixC)	SWMB_01043	64.9	0
								Slip_0458	Ferredoxin (FixX)	SWMB_01044	64.9	4E-41
								Slip_0459	Electron transfer flavoprotein β subunit (FixA)	SWMB_01045	59.3	1E-96
								Slip_0460	Electron transfer flavoprotein α subunit (FixB)	SWMB_01046	51.1	3E-101
								Slip_0461	enoyl-CoA hydratase			
								Slip_0462	butyryl-CoA:acetate CoA-transferase			
Acyl-CoA dehydrogenase linked to ETF												
SWMB_00118	Acyl-CoA dehydrogenase	Swol_0268	99.2	0	Slip_2109	40.1	1E-85					
SWMB_00119	fixA, etfB electron transfer flavoprotein beta subunit	Swol_0267	96.5	0	Slip_2110	33.0	6E-36					
SWMB_00120	fixB, etfA electron transfer flavoprotein alpha subunit	Swol_0266	95.6	0	Slip_2111	33.9	5E-43					
Iron-sulfur-binding reductase linked to ETF												
SWMB_02180	Electron transfer flavoprotein small subunit	Swol_0696	97.2	2E-158	Slip_1418	74.8	2E-121					
SWMB_02181	Electron transfer flavoprotein large subunit	Swol_0697	99.7	0	Slip_1417	79.8	3E-176					
SWMB_02182	Fe-S oxidoreductase	Swol_0698	97.1	0	Slip_1416	72.6	0					
ATP synthase												
SWMB_00535	Putative F0F1-ATPase subunit (ATPase_gene1)	Swol_2389	98.9	4E-58	Slip_2290	51.6	2E-15					
SWMB_00536	F-ATPase subunit 6	Swol_2388	98.7	3E-162	Slip_2288	57.3	1E-93					
SWMB_00537	Lipid-binding protein	Swol_2387	98.6	3E-41	Slip_2287	77.1	1E-23					
SWMB_00538	F-type ATPase subunit b	Swol_2386	98.8	4E-122	Slip_2286	60.8	1E-83					
SWMB_00539	F-type ATPase subunit delta	Swol_2385	97.3	1E-128	Slip_2285	51.1	4E-64					
SWMB_00540	ATP synthase subunit alpha	Swol_2384	99.6	0	Slip_2284	81.3	0					
SWMB_00541	F-ATPase gamma subunit	Swol_2383	97.0	0	Slip_2283	69.9	6E-147					
SWMB_00542	ATP synthase subunit beta	Swol_2382	100.0	0	Slip_2282	81.7	0					
SWMB_00543	F-ATPase epsilon subunit	Swol_2381	100.0	1E-96	Slip_2281	71.6	1E-67					

The gray bars indicate that there are no corresponding genes with significant similarity (<20%).

Table S7. *Syntrophothermus lipocalidus* strain TGB-C1^T genes encoding nitrogenase complex

Locus tag in TGB-C1	Predicted product	*Thermacetogenium phaeum* PB			*Clostridium butyricum* CWBI1009			*Syntrophobacter fumaroxidans* MPOB		
		Locus Tag	%ID	e-value	Locus Tag	%ID	e-value	Locus Tag	%ID	e-value
Slip_2118	nitrogen regulatory protein P-II family	Tph_c08760	81.3	2E-50	Ga0077125_11736	41.1	1E-26	Sfum_0726	42.0	1E-25
Slip_2119	ammonium transporter	Tph_c08750	88.8	0	Ga0077125_11735	44.7	8E-132	Sfum_0727	35.1	3E-58
Slip_2120	glutamine amidotransferase class-I	Tph_c08740	81.4	7E-146	Ga0077125_10774	28.9	3.E-08	Sfum_0596	41.6	2E-39
Slip_2121	modC molybdate transport system ATP-binding protein	Tph_c26420	50.9	2E-64	Ga0077125_115825	44.6	3E-53	Sfum_3696	47.8	5E-54
Slip_2122	modB molybdate transport system permease protein	Tph_c26410	57.8	5E-87	Ga0077125_115824	48.6	2E-65	Sfum_3698	46.4	1E-63
Slip_2123	modA molybdate transport system substrate-binding protein	Tph_c26400	49.8	5E-74	Ga0077125_115823	42.0	1E-56	Sfum_3697	40.9	2E-53
	nifV homocitrate synthase	Tph_c08720								
Slip_2124	nifB nitrogen fixation protein NifB	Tph_c08710	82.6	5E-167	Ga0077125_115813	41.0	2E-66	Sfum_1011	42.8	4E-69
	Nitrogenase FeMo-cofactor scaffold and assembly protein NifN							Sfum_1012		
Slip_2125	nifE nitrogenase molybdenum-cofactor synthesis protein	Tph_c08700	93.3	0	Ga0077125_115814	36.7	2E-91	Sfum_1013	37.3	4E-84
	ferredoxin, 2fe-2s							Sfum_1014		
Slip_2126	nifK nitrogenase molybdenum-iron protein beta chain	Tph_c08690	95.1	0	Ga0077125_115815	38.5	2E-101	Sfum_1015	39.5	4E-105
Slip_2127	nifD nitrogenase molybdenum-iron protein alpha chain	Tph_c08680	94.2	0	Ga0077125_115816	34.7	6E-97	Sfum_1016	36.3	3E-103
Slip_2128	nifI2 nitrogen regulatory protein PII 2	Tph_c08670	95.9	1E-81	Ga0077125_115817	39.5	1E-24	Sfum_1017	44.0	2E-23
Slip_2129	nifI1 nitrogen regulatory protein PII 1	Tph_c08660	96.2	2E-70	Ga0077125_115818	55.1	5E-34	Sfum_1018	54.7	2E-34
Slip_2130	nifH nitrogenase iron protein NifH	Tph_c08650	98.2	0	Ga0077125_115819	68.1	5E-139	Sfum_1019	67.8	5E-136

The gray bars indicate that there are no corresponding genes with significant similarity (<20%).

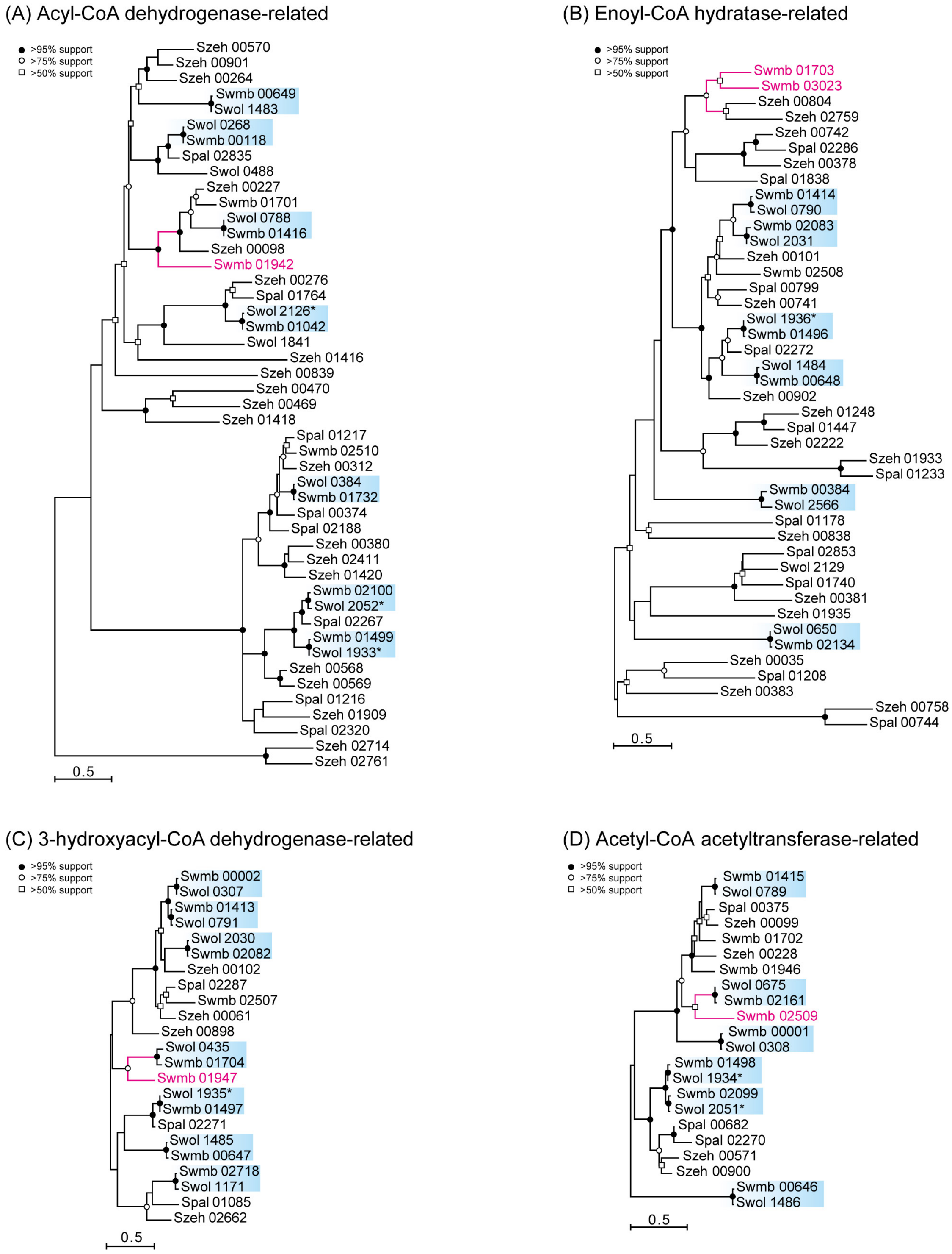

Fig. S1. Maximum likelihood trees of (A) acyl-CoA dehydrogenase, (B) enoyl-CoA dehydratase, (C) 3-hydroxyacyl-CoA dehydrogenase, and (D) acetyl-CoA acetyltransferase of genome-sequenced mesophilic *Syntrophomonadaceae* strains: *Syntrophomonas wolfei* subsp.

methylbutyratica strain 4J5 (locus tag: Swmb), *Syntrophomonas wolfei* subsp. *wolfei* strain Göttingen (Swol), *Syntrophomonas palmitatica* strain JCM 14374 (Spal), and *Syntrophomonas zehnderi* strain OL-4 (Szeh). The topology of the tree was estimated by bootstrap analysis with 1,000 replicates. Bars indicate the change per amino acid site. Locus tags of *Syntrophomonas wolfei* subsp. *wolfei* strain Göttingen with asterisk indicate significant expressed enzymes based on proteomic study (9). Cluster with blue color indicates a set of homologous gene of the strain 4J5 and Göttingen that has amino acid sequence identity range 87.4%–99.7%.

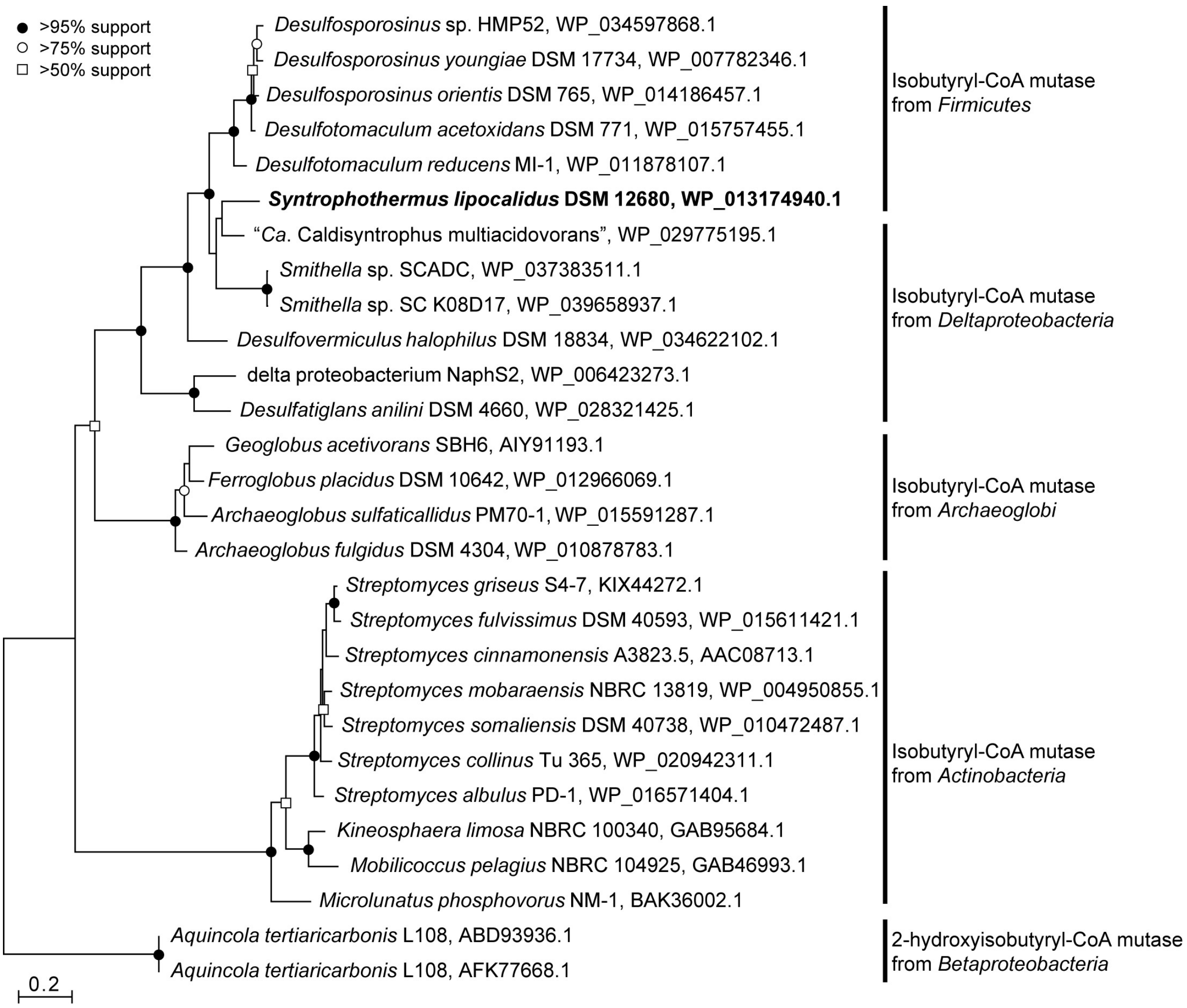

Fig. S2. A maximum likelihood tree of isobutyryl-CoA mutase. The topology of the tree was estimated by bootstrap analysis with 1,000 replicates. Bar indicates 0.2 change per amino acid site.

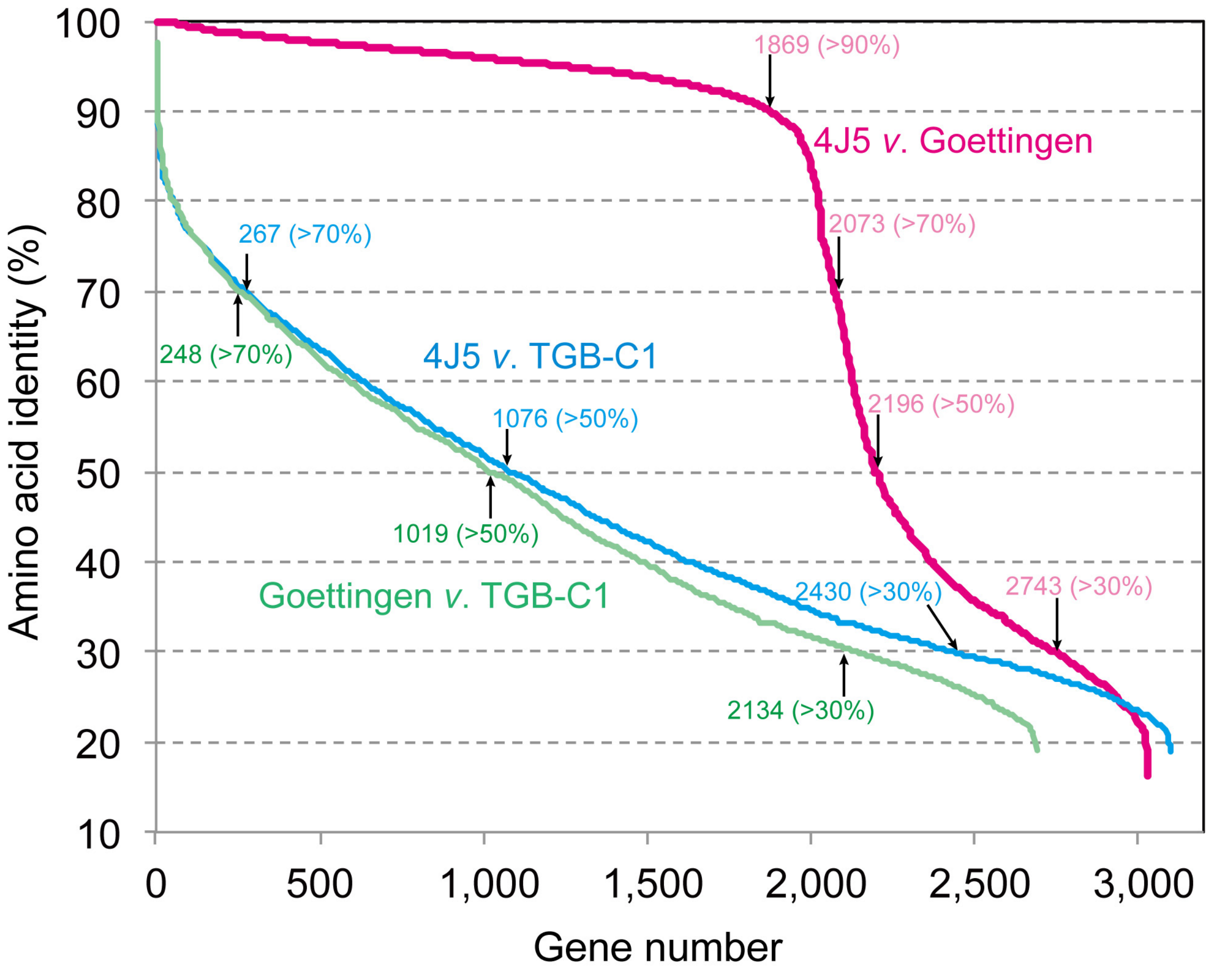

Fig. S3. Comparison of amino acid identities between the genome of "*Syntrophomonas wolfei* subsp. *methylbutyratica*" strain 4J5, *Syntrophomonas wolfei* subsp. *wolfei* strain Göttingen, and *Syntrophothermus lipocalidus* strain TGB-C1.

Supplemental material. Amino acid sequences of annotated proteins within the genome of *Syntrophomonas wolfei* subsp. *metylbutyratica* strain 4J5.

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Supplemental material . Amino acid sequences of annotated proteins within the genome of " Syntrophomonas wolfei subsp. metylbutyratica strain 4J5.

>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00001_Acetyl-CoA_acetyltransferase
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NASGINDGASAAVIMSKQKAAELGITPLMKLVASVGVGVDPQIMGIGPAEAIPVALEKAGWKFDDVDYWELHEAFAPQFIGCKIRLKEKYGMDLSMDKVNHNGSGIALGHPIGSTGLRIVVSLYYELERLGLSKGGASTCVGTGPAMASLWTREI*
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QAAASRFPILTANITDKQSGGNLPGTKPWVMIEKKGIKIGIIGLTTKETVIKVNPKIIAGYNINEPAASVDLLVPELKRQGAQIILVLGHLGGYLDKDNINITGEVTELANGITGVDALLTGHTHQKMAGYINGIPVVQAYYNGRAAGKVALKYSPRTQKVVSAVASVIDLPTPGLSEDAAVKAVINADQKEIAAVKNEVIGKAVVDLAHQKEQVSVLGQWVTDIMRQQSNADFAFQNGGGLRTSIPT
GEITVGKLWEVIPFDNTLIQMDLPGSQVLSILQHGINNPHIGSIQYSGMKVAYDLSGQRIAKVTLPDGSVLNPEKTYRVATNDFMAEGGDGYNMFREGRNTSDTHRFVRDMLIEAIKKTKTLDCKGDDRFQVIGVEAQPAAFFNKHQYSKALLDPAA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00017_hypothetical_protein
LLSEIERDEIYGEPKEIDGDTIIWESRGNKDRFYLKVPVRRANGEEMHLRAYYGARRYSFALLYRGTILIRRWDFERHENPGPDGSIFNGVPHKHKWTEEYGDEWAYTVDDVPVNDVELALKAFLTECNISVIGPTQQSLFSIS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00018_hypothetical_protein
MLEMGEIFIINQYINWLDNSFVNNTDDSIGVIKTPYKRPDGDFVNLRLLKLGNKYYLTDNGETYDYLYISGIDLHSSSTNRDNLVRRTLLSNGVSFLNDIELSIEIKSTEEIGPAVSRLIRAITGLQYLIYTTRPGGIRYFKENVANYFTSKRINFEADYYVTGKAREHRFDFYIPGKLYLVKTLSTENIAWAKRLATETMFEFVDTKEVTPDYKGIALIDDNKIEVWQGAALSILKAYSDYVIPWKKRDDLMSL
IS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00019_Endo-1,4-beta-xylanase_A_precursor
VRKVKRLLALLLIMALTITQLPLTALAEDEIVIETTENNKALTELPLLQSVPEEPGTSLGMKALEKLAGGIISGVAGKTVNESFAAIFGSDSARILKALQEIKGKLDNIENQIKALSGKLDEKELRGNLDSFAEFFSDYTAPYNQLCGYQTDLADDGELTDLFMQDLYWGKNRNIDTRGMTVIAAANALGDRITMVLTGGYNVFGAFDKLERHLNHWEHQGYDMRKEYRNNIINVYALYNGMGQIAC
EKVIEAHQGDSLSEQNIRLQAQRNLNELKANAEKVKNMNQRCAVVEHSNIRIFRDTKAGQDLYAFENFYVAQMTPLDLYYRDLRETTEYMQSMIWTKYPVRRPGNGGSELISWQPWRGLFEDIYKAYGGKKTLYDIFFDPKEGNFINNGQHLPKGTRFATDYYVYKRVNSTDFQWRTNVVSDKGKLNETVVLARLDFSYTKSRYDSLKISSEQFFSVNRYWGIVNQGALQSNDRPPTSETAG
MISGMASSYELPYTGSITLSMEEKAGATYQWFVAKGDGKDFEEIAGETGATYTLPVLEPLMNGWMYRCAIIENAGTDEEISTLADPEILKLTGEGVPEPVTIREIGSANDLTDALEKVSDGSWNAQDLRLTANIDYSMPITLNGCSLTIDLNGHTLTVQPDHTAQPNVDPMGSTAEIAAVYADNFSRLKLTGEGALNVMAGDGVAYGVYVGTGSNVKVNAVTSAGGSKAVYATGDGAVTVDSIT
VAGDNAYGVGCFDSSNIKVSGDVQVTGVSSHGVYIDSESGGLQSVLIGGDVTVTGEKSRGIYLGAEEAVLSVEGSVTVTGGVSAVSAGKGEVAIKGGITAPDYAVNAWHGASVTVQGNIVAKGEEATAVISSGADVHIQGNVTSSGQGGMGIYASAWELVDPAEGAKVTVDGKISAATPLRMESLPVEESEHTESTTKEDYYTFTDGSSTVWAKPGSFRRAVTYTVTFDQNGGDTEASPAAQEVI
SGAQVGTLPTAPARSGYTFIGWNTQANGSGTAFTAATAVTDSITVYAQWSKNSTGGGSSGGSGGTSTPMETPKTETNIAGNTATAATTVTASVDSRGYATAIVSRIQVSDAISKAKEEARKQGEGTAARLEIKVQAPAAATTAETSIPKEAVSRAAEAGIDALTISTPVASITLDANTLSTLSGEATGDVKITASKVEASSLSPEAQRTVGDRPVFDFGVTSRGKTISQFGGNVSVSVPYTPKVGEDTD
AIVIYCIKESGELEAVSNCIYDPATGMISFNTRHFSQYAVGYNKVSFKDVAESAWYSKAAGFIAAREITGTGGGNFSPEVKLTRGQFIAMLMKSYGIAPDLNTKVNFADAGNSYYTSYLAAAKRLGISAGVGNNLFMPEKEITRQEMFTLLYKVLKIIGKLPQGNSGKTLSDFSDAGDIASWAKAAMSLFVETGTVSGSDGKLSPISTSTRAEMAQVLYSLLSK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00020_Methylphosphotriester-DNA--protein-cysteine_S-methyltransferase
MEYITVKEAGEKWGLGIRMVTLYCTEGRIAGVVKKGNLWLIPEDAVKPEDRRRKKASIQEEKEPAAGKDNDVYETNKHENARSFQSLYENKDLFIEIVKHFPYPMHICAPDGTMLLANEAYLKFAKISNPERLYKKHNILQNPNLERWGVKDFTVRAFQGEAVYAYDVKVPHQEIVDRLGDDKELVYGSMYHNITALPIRDSNNKLLFIVFIFTSRYYQDREEIIKGKEYIDNHWREEFDIDKLAGIVH
MSRYHYTRLFKQHTGMTPYSYYQEVKIGKLKEKLCDTNLSITQVFEECGVDYNGNLAKIFKDKLGMTPSQYRTMMTQK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00021_Penicillin-binding_protein_E
MKKSTIFLVKLIVMVFFLTCIQLPGVTNLSAYAVTTDMAQGYEASIKAAREAVAKELSTGISSSATVAIMVDGRIVYAEGFGLRDRAKNLRVETDTQFNIGSVSKIFTAASVLVLEQEGKLSLDKPVTDYIPNFTMNDSRYKDITIRMLLNHTSGFPGTNTKDGFTAVKNRNYVEETLERLKISNLVNDPGKISIYCNDGFTIAEAVIEHVSGMSFPDFLEKRIFNKMSLDNTSAYFKDGNQNIARVYEKDSI
APLPVEYVNILGSGGISSTAIDLCQYGEILQSETILNPAMIEEYTKVQYGPETVPAGEPIFNAGLGWDYVQVHKFKNQGVDVLAKNGGTLQYFSQLYVLPKEHINVAVIFAGSANPTAVANAILQALLEEKGIVKKPSSDILPPQDAKIPDYFKGYEGFYTSDDKIMKVEISADKNGMTLSTYDGKGFKPAGVLTYKENGRFYKPGGLNYSFAEHAEGKVMMIHPDSSNAGFVSCEKLNNLNDIDTSAF
SGRVWVPRNLNRYDFFTKMIRTVTIPEIPGYIFVDDGATYTPLALKSPTGTWMSFNYLRDQFEVFLQNIEGETLLYNYGHYYSDASKLPIITEGDILQIDSNGQNKAGKMGFSDLVSFSIPEGGRIVVFSPELNLAYDSLMSDSPETYAEKGAYIILAVGKSGDTFRITNSERFKDISGHWAKDSINQLASANILKGTGNNLYQPDKNMTGLDFLILIQRATGITPDNLSASGEETLSFKAEQPITRTQAVSV
LADVMALTGFEANLTTEEEVSLIKGFSDLEGIDQELKSNAALLIKLGIFQGRSNKLLAPGDTMSRGEAAATVLKMLKCIQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00022_Endo-1,4-beta-xylanase_A_precursor
MFKTIQKRMTVVLIVSMLFQVFVGVSPVLAEDSSDHIAGPEFVPLLAVTLSPGETTGATSATVTGYVYGNLLVNITEQEIATPRVGDTAPTTGDTMIADYESGADITAGVAAGNYLQIYDIDTEEGARIVAFYQAKLTEEDIKEEIGESAEEEPGENLMMGAGLRAEGGYTYIDENGVTKNTGNKTVAKITSKTATLNEGWYIVEGNINRTGAITVSGNVHLILADSSSLTIRGKRDDAGINVPKDNSL
TIYAQSKGDERGSLNATGVAGSAGIGGGAEGSSGEITINGGTVTAIARYGGGAGIGGRALGSYIGEITINGGTVTATGDYAAGIGGGERCDGGNVTINNGTVIATGGNGSAGIGGGGHPRLSGGSGGTIIINNYPTVIATGGGGGADIGNGRGYGVGKTIIKRGDVKGTDLTYVRLEVENLSPENENKITLNEQEHVINSEGITGFFVDKSAQSKYISLESAGPLISINPGDVQNSRIILNAHDYAKPVA
GFGSALDFPENSQGRINVPFEDTKIGGNSDFTISMWIFPRENEPYQTLYRQEGDETRGSLGLDFRFIKYNDDEGYLYFGFNGLNYSWQNAFPWNDEISLTNITKIPMNQWTHIALTKSGESVIVYANGTKYYEMTLDSMHFYAPAPLAGNISIGGTTAVNQFFSGRMDEIQFWNTALNPDEIVAWMYRGVDSSHHKYGNLVYYYKLNQSSGTTVIDSKGSYNGTLVNMTDGSWVVSDVRGWTV
YAGSTLEGRLIGSYDAGSSNDGTDWKLTFEIVEQAKKGTVTITGDNQFEYCTHDMKQVGHDSFTYRVKGPSGKYSNTQTVNIDIIPIPSAGNGNSLGSPSNSQSTNNANGKSETVAAATTTREGDKKVTTVVIDDKKVEETLAREGNHAVVTIPVMSGADVVIGTLNGHTVKNMASKDAVLEIKTGQITYTLPASQINIDAVSEQIGKQVELKDIAVSVKISEPATDTVKIVEDTADKNNYQIIVKPI
EFEITCSSGSKTVEVSKFNAYVERMIAIPEGVDPSKITTGVILNSDGTFSHVPTVIAMIDGKYYAKINSLTNSAYLLIYSPKTFRDVENHWAEKDVNDMASRLIISGVGNDLFEPERNITRAEFSAVMLRALGLRAEEYKNDFFDVKAGEWYREYISTSSYYGLVRGYDDGTFKPDGNITRQEAMAILARAMGATKLGEELEIDVSDILAAFDDNADVSDWAKDSVSKCVKTGVVTGRDNGRIAPLDNITR
AETTIMVRRLLLHSGLINK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00023_hypothetical_protein
MNTDMIEKIPDEDCGVDEEMFPCLGKCCCKNDALFMVSYEKTCPHCDIWSSLPYGADLKTVTVFECSRLGYGKRLAG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00024_ATP-dependent_transcriptional_activator_MalT
MFNIPSARLTIPRAAAGEIVRQNLIDTVLNSPTKLVYIHAGAGHGKTTLLSQFANSTEKVVWLSLDGENDIFTFINTLCEAVKQTFPEFDFSASEYLPFSEKNNFISMLAGALICSIENISGDFVAIMDDLHTIEEDEVKKLITCLIKYLPNNAKLCFGSREAPWQDFLSFKVKGKITELTQKELAFTREEIVGILGFDDPAIYGSTEGWPLAIRSFQVLLENGISIGDITSYGNETLYAYLFRECIANLNSDMVDF
LKKSACFDVLDAQMLDNVLNKKNTRLMLESLVSRNIFTIKTGDGFYRYHALFRSGLLETGDKDQMPLLRQKAARYYFDHKQYSRAARYAIDSKDDELLENIILACYRDYIKAGNYELNRIWFRALNDAAVELNPRILVAKGAFLSVLGNFVQAKACLEAAIPLMNRDDKELYFEAMMHKARVLRNFVSFEESNRLLDELIAKLDDPTGELAYSVVIEKLYNLCWNSQIGEAYALARHMIESCAHVGNI
KIMRWFERYLCTIQFFAGRMKESVYYYEKSLELPEDELNYLGMHSTGIYVAKAYQMLGERSRSLSALSEELQRLRNTGNYEEMWAGYLLAAEIHFQNTFIDKMNGENASYETAVKYFTLADEYAPLYRKTNFQMHWAKMQRLTYSLIFTDDPKEDIVREIFENLDQAGAYLKSLVLARLMGYFSAISDYPNAVKCANLCIETGESSGMLLHASLAYGLVRAAIETKDHEKATSLTGRYLKLCSDHGF
YEYFRLRKAYDPVLEFAYNYGIEPEFTKQMIEFAGYRPKKVYIETLGAFTVYQDRSRQKLLKFRSKKERELLAFLLDAGDQGATKEQIYNAIWWESESNNIKNLIAVNLRHIKNDLECAGIMESVIYRENRYFICRDEIACDIDLFERIYEEFKLHNTKVQAKNLLSLYKGEYLSDFEALWATAKRIRYHEIYEEAAKYCL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00025_Penicillin-binding_protein_E
MKKLKTPWFYVVVAIFMMFPSIAFAENDIYTDVKKSAVELAEVLVNDYKVSGVQYALISDGKIVVSGTSGIFHKANIKTLDNKSIFGIGSISKMFPATAIMLLSDQGKLNLDEPVATYLPEFKMADERYKEITVRMLLNHSSGIMGSLYVNSGMYDYPTTLNHDNFLKELAKQKLKGDPGEFSVYCNDGFTLAELVVEKVSGMSFSEFIKKNITEPLGMTNTKTPQDDFDRNRLARTFINEKETPIETLN
MIGAGGVYSTAEDLCRLGQAYMNDPGYAAAAKLLSQYAKTKTMQKEYLRSIGPEQNEGLFGYGLGWDSVDAYPYSQYHIQALVKGGDTGLYHGSMIVLPEYNMAFAAVLSGGSSFYGQVMGQTLLLKTLLAENDITEIIPPRDLQAPVLSSMPLEQTSYAGIYANNAMVMNVSVGTEGKITISALSHKDIPDEIYLYTSEGVFVNEDGSKKLTFVNESNGKTYIQIKQFFNLPNMGQTVMTSYEY
EKTEPNIIDDVSQKAWDERNGTKYYIVNEIPQSQAYHKLESSHFEITTNKELPGYAVQYKIVDSDTAWQDVQIPLMAGRDLGTLEISNIDGKEYLSNAGSIFISEKDMADMYAGDNAICTIQENGYARWYTISQNDAGKTMTVNLPENASFAVYDEESCVYYSTVNGNQAVKLPENGKVVYIGEAPGDCFTITTK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00026_hypothetical_protein
MLLPDLNFATINSLKPVEIVITEASRALKDQDRVIGSSEIANVLRITLQTIAEADISFRAIYAYGTSKISNPEEYIPSEDAAGTFISSHLPYLTPGLNDGLLALVGSIFFLVFRRKKIKQKEQILYDEAVAREKSLRNQLLLEANASQERIDYLKSILALLTYALKELKRDLTVLKAN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00027_multifunctional_acyl-CoA_thioesterase_I_and_protease_I_and_lysophospholipase_L1
MREMNNGDNIKILVSGDSISKGVIYDETKNRYIVLQDNYVDTISTKIRCSVKNVSKFGSTITRGIGKLERYISKENPDMVLIEYGGNDCTFNWDEVADNPYTDHLPQTEIKIFETALRETIELLKNIKVTPVLMTLPPLNADKYLEWVSKNNPIAQSNILKWLGNVAEIYYWQEKYSLVISKVAEETHTKFIDVRSAFLQFPDFTKIICRDGMHPNRNGQKVIADKVMDYIKTGYDYLLIKKPST*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00028_putative_protein_encoded_in_hypervariable_junctions_of_pilus_gene_clusters
MNKDLDYYMALPYKVVLVACDEGGYVAEIPDLKGCITQAETKEEIVGMIDDAKRLWLLAALEDGKEIPEPGKEDDYSGKFNVRVPKTLHRTLVELASSEGVSLNQFITYTLSRAVGLRPF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00029_hypothetical_protein
MSQVKTKGENPMIKKRISVSQKRQITIPIEFYNSVGIDKEVECYVQNNAIVIRPVRESGGEFDEQILADLISQGLSGQELLDKFKETRRQVRPAVERLLEEARLAAQGHASSDNYEDVFGSEAD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00030_hypothetical_protein
MTKLVILPPAARYLKKLKEKPLKEKFQAIVDQILRNPYYGEPKTGDLSGVYCCDIFHNKTNYELAYTIVEEGGETVVVILAGTRENFYEELKRYMK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00031_hypothetical_protein
MVWSLAVAALIAGILIWFIVPYSPTKAEFAKLTSYQMTKTMTQGGIITSEDIAELPLPVQKYFQYCGYIGKSKMSNMIMHFNDVDFVLTPDKPKLKIKYTQYNYVAEPERFANINTSLYGIPFEGIDAYQNGAGSMKGVIAKTFTLFDQKGEAMDQASLVTCLAESLLLPTLALQEYISWEEIDETHAQAVINFYGISASGIFTFDDNGAMTRFTTNDREYTDTKGNSQKVKWLAVCGDYEEVDGIKYP
SNLKAVWHLETGDLVYFDGRDITVKYDVSK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00032_CAAX_amino_terminal_protease_self-_immunity
MGVWLVLPLLTALVIILISRFSWKELGLKPNFKGNIKWYLASILIFPVVTAIVMLIGAATNWIDLSAFALRPFIVAFGSTMFVNFIIDIFEETAWRGYLTSQLLKLNLNDWKLYLIVGCVWAAWHIPYYLVFLPEADIQAVMPVSRAIYVVVAFTTFLCWTVMFTELFRVTKSVWPCVILHTVEDSLINLLVISGYISIAVGKEILVSPINGIIASILYLAVGLGIRAYRIKACGMRSDQILISKAEECSG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00033_MarR_family_protein
MNQLEQKAYIFGTIFALSNKLQVIGDKFDKNITIKQWLLLVSISKFEEPPTISEVANYVGYSRQNAKRMAAVLQERGFVTIAKDENDARALRIARTPKCIEYFAGRDQRELEFLEEIFNGFDAELTAGFYQGLSRLEKNIATMI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00034_hypothetical_protein
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PETLLGGVPSEEDFISGATHWFTIANGEFTGKLNGKAF*
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MKTKIFAFIIAGVMAFTMLSIPGMSAFAESLPTGGSLEAPQNLTAELKEWEDGRPYFALKWTNPRSIWELGRYGVEHGEWGAEYQIDMKVGDGKWRSDMGESLFGNALSFDEELDEPGNYVTDDVKCDPMDLGVGGTADIKANVYHLRVRYAYSANQGSDDEHYIYSPFSNIASIGTEAFYKEASDWAKSELQKSNDLGLIPGILKGADMTKPITREEFAELAVVLYERVTDKKSEPVSPNPFTDT
ANPQILKAYNLGITSGTSQTTFSPKVLINREQCAAMLFRAIKAIHPQGDYSVAGVKDFPDQKNISSWAVEATKYMNKVGIITGDAQGNFMPKATTPAQEAAGYGMATREQAIALSVRTHDKAPDIKASSAGNSNPVDNSSGKAASSGGRLPADIIAGLPGWLPDWFLDIPIAADAEFGALGGIYPPSDDMIMIGYTSEQTLEALYYLYVDFMKGLEDFFTYKQDDGRAYYVRGVRDGWEIDISVALS
GGNLVGIQVKPHKEY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00036_hypothetical_protein
MGGKTKKQLLEELSEVQKMLEKRTETQGHMIRKFQTLIENEGLFSQIIDFLPYPLAIFTPQYTLSMTNKAFAAETKTRVMYPEKGAARILQHKINDMQLAAITGVFAGNTFFLEDLKNPFSMFSGITQQSASEPDLFNRVVIFPVPADDAEITHGVIVFIP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00037_Bacillibactin_transport_regulator
MGSSMKEMQNNIIGSFQSLFGKEELLAKVIECFPYPIQVYDPDGTSVLVNKAMLAEYHTISPDMVVGKYNIFKDPYIVASGQLPVLKRAFQGETVFFPDIKVPLEDIAERYGVEDFDIEAVYQDITVFPILDGEKRVIYVAAFLINRRVYRGKDEIEKAKEYIEIHWLERFDLNETARAACLSKAHFTKLFKKHTGVTPHEYYTNYKISKVKEKLLDANLSIAQVFAACNMDYNGHSARVFKNKTGLSPSAY
RKKSE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00038_hypothetical_protein
MLDYMTVKEAGEKWGIGSRMVTLYCADGRIKGTEKIGNMWLLPKDAEKPKDGRYKRGLKNGK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00039_hypothetical_protein
VICAFQLCLSLVIRSFAVPVGIALNGGILGLVAMAKGYGVWFPAQNICSFMKEEHNCTLIFVRRTGLIPPNRLFNDNQLTELYRCVQDSLYPSEFRERGKDLYFGCNLE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00040_ABC_transporter_permease_YtrF_precursor
MNVFSKITLSSLKKNRTRTIVTIIGVILSVAMITAVTTLIASLQSFMIRNVIATDGDWHVQFMEADSALVQRLSADNEVAAAAVSQNIGYAVLEGGQNENKPYLFVAGFDDKAMEMIPIRLLDGRLPQNDREIVINSQINNAGVRYKIGDTLNLTLGHRVLAGKRLGQNNPFVLDDQNGAPRESFVPESPKAYTIVGICEKPRFEDYSAPGYTVITKMNLAELGDADRVNVFTKLRYPAKVYEFAQSVG
GGSGYTYNNDLLRYMGISKDETFNAVLYRLGGIFILLIMLGSILIHNSFSISVAERTRQFGILSSVGATPQQLRRSVLLEGAWIGLIGIPLGIMAGIGGIGITLSIVMSLMSGIFASLSYSGVHMKLSLSLPSLVTAGVVGIITILISAYIPARKAARLSAIDAIRQTTDIKINAKKVKTSRLVPKLFGLEGTLALKNFKRNKKGYRSTVISLFVSVVLFISASAFGIYLQESAETTINESGYDILFRSTQTTDEELLLYEKLRNVS
GVYDSGFYKALYFEASLPKDRLTERYLEHYYGDSLPAGDMVPINVALCLVDDGTYAAYVKELGLDPQKYAGENTDNMIVITKINKYDDETGRYVSFDVLQGSLPLSLQLFAPGEPSGGSQPGPEITVTYIADRMPEAISESRGAGFLVFAPYSMNSRFSETRDEHLTTFAFLSTDPGKSAEEMNAILKDEGIFSGYSLYNIAQIQEQNRNVIILINVFSYGFILLISLIAIANVFNTVSTNINLRRREFAILKSVG
MSYKGFNKMINFECVFYGLKSLLYGLPVAFITYLIYRSVMTGADVAFLVPWMSVGISVFSVFLVVFVTMMYSVSKVKKENTADALKKEAL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00041_Lipoprotein-releasing_system_ATP-binding_protein_LolD
MEILKVDNLYKTYGRDENLVKALDGVSFSVEKGEFVVIIGPSGSGKSTLLHMLGGVDTPTSGHVYVDGKDVYAQDPEQLAIFRRRQVGLIYQFYNLIPVLNVVENITLPVLMDNRQVNQERLHELLQTLNLTDRAEHLPNQLSGGQQQRVSIGRALINAPAIVLADEPTGNLDSKNGQYIVELLKLSNKKYHQTLIIITHDENIALQADRIISIEDGRISKDEVIRR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00042_Signal_transduction_histidine-protein_kinase_BaeS
MAFLRNREIRIFALLIAAICVIAVITGFVISFITGAFTTILCGLFCMAFFVFTRKRYRDIAFLGEQIDIVLHGKDGFDLNMFNEGELSILQSEIHKMTVRLKEQSDMLKKEKVYLSDSIADIAHQLKTPLTSINMIVSFLGHSDLEPQHRLELVGEMKSLLARIDWLITTLLKISKIDAGTAIFQKEPVSVPILLQKAAEPFLIPLELRNIELRVNGDGVAQFTGDLRWTSEAIGNILKNCMEHCENGGLIEIDYTPN
PLFTEIIIKDNGSGIDADDLPHIFERFYQGKDAKDSSFGVGLALGRMILSLQNATIKAANRTDGGACFTIRFYQQVV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00043_Sensory_transduction_protein_regX3
MNRILLVEDDLNISKNLSHLLSSEGYSVVLADTQKVALAKIEKEHFDLLILDIALPDGNGYIVCTAAKRSSDVPVIFLTASNDELSAVTGLDLGADDYVVKPFRPMELLARIKSVLRRSGKAESVFEIGNLRIDLLHGTVYKNGTELFLSALEYRLLLVFANNHGIVLSRDKLLGEIWDIAGEFVDNDTLTVYIKRLREKIEDNPQNPQIIKTIRGLGYRLGES*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00044_DNA_binding_domain,_excisionase_family
MFDTIVTVRYNSIKHSFGGLSMDIKEELFREDYLFTREDILKSLELFVEHERLNEEPAYSGEVVKNRVKLCEKFIAAVKKSKLPVLTELWWYYEYQFLGNSMELNLCQADEIEVENDEISGMTSTVEHTLITVECDYLTVDQYSAMLGVEPVTVRQWIRRGKLRHAKKNGRDWLIPDTEDKPRRGFTSVQYIVENEAHIESNEFPLLSVCESIFILQDEDNKNKFICYLNNYKTKFNSKLELTRSEVERLEH
AIIESGKARVEGSIQYIPYLRDPED*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00045_hypothetical_protein
MNQQQAENEMKYRLNTTGPLHNEEALYIFLL*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00049_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00052_Piwi_domain_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00053_type_III_restriction-modification_system_StyLTI_enzyme_res
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HDATFYPVIYGAEEDDDWTDPKVWKKVNPSLGITVSIDKIKAACESAKQNPAENSFRQLRLNQWVKQAVRWMPMEKWDKCAFKVDPGKLKGRVCYGGLDLSSTTDITAFVLVFPPVDEDDKFHILPYFWIPEENLDLRVRRDHVNYDLWQKQGFLKTTEGNVVHYGFIEAFIEELGTQYNIKEIAFDRWGAVQMTQNLEGLGFTVVPFGQGFKDMSPPTKELMKLTLEEKIAHGGHPVLR
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00081_hypothetical_protein
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MKFQSIGIPPEQAQFLETRKFQTEEICRIFRVPPHLVANLDKATFSNIEHQSISFVVHTIRPWLVRLEQGMNKALLSPSEKGQYFVGFVVDGLLRGDYASRMQGYAIGIQNGFLSPNDVRTLENMNTIEHGDIYAMNGNMLKLEDVGAYANTNRKEVSQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00083_ATP-dependent_Clp_protease_proteolytic_subunit_1
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ATGGAELGVTAASATAITVDEIMDLFYSLKSPYRKNAVFVMNDSTVKAIRKLKDGNGQYLWQPSITAGQPDTILNRPVKTSAYVPAIAAGAKTIAFGDFGYYWVADRQGRSFQRLNELYAATGQVGFKATQRVDGKLVLPEAIKVLQMKV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00085_hypothetical_protein
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MKKRDLMGQMRQRIALQAKTITKSEGIPLENWTTVAIVWAAVSDISGKEYFQAGALQSEVTTRIKIRYRTGLTTSMRVLYGSRVFQILSVIDKDERHRIIELMCKEVIPGGG*
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VAGNLTLEGMDEILDRLKELGQRAAPVENQALYAGAKVVQEKASQKAPRSLEAKEHLADNIVICEPKQDENGKYVEVGPTAPFFYGKFLEYGTSKMTARPFMGPAQAESKKQVLETIRQTLKAGLDL*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00092_Phage-related_minor_tail_protein
LAETIGELLVKVGLDNTGFNQGMKELDQSLKLARAEFQAASAKMGDMGSAADQLKLKVEYLNKQAEVQRQKVAALKDAYDKAAGSTEQDAAALEKLRIKMLQAEKVLANMEHSLKNTVKELELQASAWTKLSKKAEEASQKFKAAGSSITSAGQGMSLAVTAPLAAAGTAAVKLASDTNEALNKVEVAFQDNAEGVKNWSDTTLERYGIAKGTALDMAATYGDMATSLGLNTAQAEEMS
KTLVGLAGDLSSFKNISIDIADTALKSVFTGETESLKELGIVMTQANLQEYAYSQGIKKKIQDMNQAEQTQLRYNYVLAMTKNAQGDFERTGAGTANQMRVFSESIKELGATMGQHILPVITPLIQRLNELVQRFGALSPSVQKTILVVAGVAAAIGPVVLIIGQLVTAAGAISGVVGTAAAAIASAGGVTAALGAAFSALTGPIGIAVAVIAGLVLAVKELWQNNEGFRNTVKEIWADIGSVIAKAGTA
IKVFWDNWGKDITAVFTNIWNIIKAVFQTAAEVIVNAFGFFLDVLQGDWQGAWEHIKNIFTTLWNRIKTVVVNAFEGLRTLHNTLLEIGAHIIQGLIDGIKDRIDKVREIAGEIAETVKNKIKEALSIRSPSQVMREYGLNISEGLSTGMQEGLSFVEGSVSDIIATLVDMRNSLEKITNETNAKLLKAEKEYADQCREVKTKLAQDEIALQQELSDKLAAITAAGLEKEAQAIEAYQQSYAAKVESIKNQIG
LFDEVKPQKVSGKSLLGNLEDQVQEFDSWQANLKSLAAKGVDEGLIDELRQMGVKAAPQVAALNTLTTDELNKYVNLWKTKNAQARAEANIEMRQARVDLGQRLSEIRMETQNQLAQQTIEMQNKLMEMKAKADEELAKYKKAWEEKNGEIKKNAAETIATIEKKYEEIVKKSAGYGIQAMSELIRGIRSRMSALQSVMDEVRSIMGSGMDPNQRNSPSLVDKIKIGVADITAAYSSLKNNLRG
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00093_hypothetical_protein
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TVQNVGVEGVDEEDAKDYLVNLSDGYLRCSADTDTPESGVTISLTARQSIDVITVVDDLASQASIAVLEGGDGVYEHYIKDDTLTTIEAAEAAGNADLREWANPKTSGSFITAVPGWEPGQLVSIELPERGVNAVFLVQKVTISLSEAGLWIYTIEYGGRLLGIADFLKALVSAQQKKKMNDTKLIHKFVYGTEAIAIKDVLLTAGRNRPWLVESCASSAVMIGG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00094_hypothetical_protein
MAGGYIQVPPDSIGKKLNARYRAIEGTAGYEQYVALQGLPTFYCLAPSVSLAQNKHLFSIYNDAGSGYLIRVPRLSIVNMSLTSVSGVGVELDFMRTTSQSGGTVITPQKADTADVNLTAAIHIATGATIAEDALLWPVTLNNDEIPLTLNATPLLDFNMIPRGMDVKPLCIRPGEGFSIKQITNTSVGLWSILAVITAEDIT*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00095_hypothetical_protein
MSMIWEMHKWGLDNIPQPESQAVPTIGSLARIYPQTQAMSLPRGLQISTSINGSQWSPWADVDFSKAVTVPFPGFIKFRAYQKANVQVFNYKSPDEADSLVGLTVVLGQYGVV*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00103_Transposon_Tn3_resolvase
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VADHLSKKLVYNRGTLPKYYAEGTHQPIIDPLTFQMAQEIMALRRENRNVRQNPANHYPFSGLIFCPRCGKNYRRVTYKGHAAWNCSTFVNYGKDACPAKQIPEPILLSLTAEVLGLAEFDEVVFRSQIKQLQVPQANKVIYIFQDGHKVEAAWQDRSRKSSWDDKKKQQARERTLAYQRGDLK*
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DWRMVTIDGEDAKDLDDAVSIEKTLEGYKLGVHIADVSHYVKEDSKLDREAFKRGTSVYLIDKVLPMLPVELSNNICSLNPQVERLAISCIMDIDSRGQVVDYEVCKSVIQINERMTYSEVNRILADNSPALKERYGELVEDFFLMKELSDILRRSRLNRGMLDFDFPESKVIVDEEGFPLEVKRTERGPGEMLIEDFMIKANEVVAEHLHNLGLPALYRVHEKPDEEAIGELNKVLAVFGHKIKGHKVS
PMLFQEILADIKGRPEEQMISLMILRSMKHASYLPEPRGHFGLASPYYCHFTSPIRRYPDLIVHRVLSSLLDGGMTARKKSSLEKKMTIYGEQSSLQEMKAEEAERELLDVKKAQYMSQFVGDEFSARISSVQAFGFFVALENTVEGLVHISSIADDYYLFSDRTYTLRGRHSGRKFAIGDSVRVQLVRVDVDEGKIDFELLQDE*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00108_Thermostable_monoacylglycerol_lipase
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PLGLIKDGDSIIFFNFRADRARQISRAFTDRELHSFKRKVRPEVFFVCLTQYDATIEAPVAFPPQNLENTLGEVLAAAGLKQLRIAETEKYAHVTFFFNGGVETANPGEDRILIPSPAVATYNLQPEMSAPEVSKRVIREIERDFYDVVIMNYANPDMVGHTGILEAAVKAVKAVDECMIEVVRLVREKGGITLITADHGNCEMMVCPQTGNPFTAHTCEKVPFILVSNEHIDCQLRDDAILSDIAPTILEL
LDLPVPAEMTGKTILRG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00112_Bifunctional_PGK/TIM
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LARIVRLSSHA*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00114_Glyceraldehyde-3-phosphate_dehydrogenase
MAVKVAINGFGRIGRLVGRIALQREDVEIVAVNGLGDIKTSSHLFRYDSVHGEFKGQVAIDGEYLLLNGQKIRYLSEKDPRQLPWKEMGAEVVVEASGAFRTREKAAQHLQAGAKKVVITAPGKGVELTMVMGVNHEQYRPEYDVVSNASCTTNCLATVAKVLLDEFGINKGLINTVHSYTNDQRVIDLEHDDLRRARAAGLSMIPTTTGAASALGLVLPELEGKLDGLAVRVPTPDVSLLDFTL
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00117_Organic_hydroperoxide_resistance_transcriptional_regulator
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00119_Electron_transfer_flavoprotein_small_subunit
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ARGVK*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00133_Excinuclease_ABC_subunit_B
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00134_AAA_domain_(dynein-related_subfamily)
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00135_Cell_division_topological_determinant_MinJ
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00136_Carboxy-terminal_processing_protease_CtpB_precursor
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00137_Septal_ring_factor
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00154_flagellar_protein_FlaG
VKMIAQAKISLEEVKQGSLERLYVVNSKKKDEEKSKQENHPSLSLVPINNKPDKKDWLTALNESNKLLVLSKYHLQFRIDKDSERIQVKLIDDETKEVIREIPPEQMLRLSALIKERIETYCKLLGIFVDEVA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00155_hypothetical_protein
MSSLYSIAREMMDLSHTMLEALDHINRRMAAGHLESTFYLFQDILEAFTLVQSLLEQLPEEQGITLEKVSLNFQNCLDLMLLAYQSNDLEKAHVELQYDLLPNFIKWQYELEKGLKPYKDS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00156_UDP-N-acetylglucosamine_4,6-dehydratase_(inverting)
MNISETIRDKKVLVTGGTGTVGKKLAQRLLELEAAVVRIYSRDEHKQFTIQEHFAYHGLDMKRMRFFLGDVRDKERLKRSMEDIDIVFHLAALKHVPACEYNPSEAVKTNVMGTQNVIECAMETGVSAVVYTSTDKAASPTNTMGASKLLAERLISSADHWKGPRQIKFLSVRFGNIINSRGSVVPLFEKQIARGGPVTVTDPDMTRFFMSADRAVDLILESLAMSRGGETFVFKMPVLRIGDLAR
AVLENSGKDVEMSIIGLRPGEKMYEELMSEEESARALETDKIFLILPYDYDRRQYQERYANTRLPEIGTYSSTGAGLMRLADIKAMLNGNSAAEL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00157_hypothetical_protein
MEFCDISINSRSIIYELLACAVPVLVICDRSGRGQLDGLGEQVVAAILLVETRRSKYEHKRDDSG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00158_YcfA-like_protein
MNPKKLLKKIFNNNRNIRFADMIKLVTAYGFELKRINGSHHIFVHPALKEIINLQEIDGKIKPYQLNQFLTLVEKYNLQMEGEED*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00159_hypothetical_protein
LKDYHINIFYSEKDGGYIADIPDLKGCSAFGISPEEAAKEIQLAKEAWIAAAREANIPIPRPRYKPLIYQNQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00160_putative_nucleotidyltransferases
MLIKIDADKLQQVVEKYHLKLLVYYGSYARQEDFDPSRSDIDIAFISEQQLNSQQLFDLMSDLILLHRKSNIDLVNLQTASGLLKEAVANDGRVLYEKEEGYFQELCPYLYKCYYETRKFRQVKHALFEKKLAEELKNVRPR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00161_hypothetical_protein
MSDRDRICAKLDKLQTYYTELKSLSSISLDEYISNSIYRRAIERTMQLIVECATDINNMLLKMQGNKGAVDYFNSFIDIAGQNIIPVEFALKIAPSTGLRNILVHEYEEINDEVVYNSINTCLQYYLEYMGLINQYLKCIG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00162_hypothetical_protein
MEELKIYCAVDFLEIGTDLLSVLVLHKLS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00163_undecaprenyldiphospho-muramoylpentapeptide_beta-N-_acetylglucosaminyltransferase
MNEIIAIRVDGNSEIGFGHLMRMKALARELGKLGAEVIFLSRNPENIEGYRVLQLDPQARDEEDLPVEGILMNIQAGMLIIDSYEYTQERLDRVGQLPLLSVYVDDLNRHPFNTDFIVNGNLYAQGLPYRGRARFLLGTKYLLMREEFAGVPLRSANPGVEHLLITFGAADMENITPGFLHILRSYEHFEDLYWHVVIGPVFCNLAEIEAVARVCPNVVLHYNPAIKNLMDFCDMSISAAGSTTYELAA
CGVPAMLVVAADNQLRLAREAEQQGIAFNLGWHHELEAARLYSALDSLINNQMLREKMAVCGQELIDGRGAQRVAAILMDEMRKNR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00164_hypothetical_protein
VKNDELELFAKELKLLDEAAKILAYSYEACRKIGIKESYALEELDKFEALTSRFARTSDILIQRIFRLIDVLELEKTGQYNRSNKPSRKKKLDFFRGSVQRNKVFAQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00165_hypothetical_protein
LLIFSYKLKEEDRFRIKRDLWEQIGEQKIDIIIVRDESDPFTRIVLKEAVLL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00166_Pseudaminic_acid_synthase
VKEFNLGGSLVGEKHPPFIVAEMSGNHNQSLQRALEIVEAAARAGVAAVKLQTYTADTITLDINQGDFFIEDTDSLWQGRSLHELYKEAYTPWEWHEAIFKRCRELGLMAFSTPFDETAVDFLESLEVPCYKIASFENTDLPLIRKVAATGKPMIISTGMASVAEIDETVRVAWEAGCEDLILLKCTSSYPASPEDSNLLTIPHMRKLFDCPVGLSDHTMGIGAAVASVALGACLIEKHFTLSRADGGV
DSAFSMEPEEMGQLVIESERAWQALGRISYSPGEQERKSLKFRRSLYIAKDMAAGEALTPENLRIVRPGYGLEPKYYEVLLGKKVKQAVKKGTPLSWDLI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00167_Spermidine_N(1)-acetyltransferase
MTINIRDGHLRILQTEDLDMVLKWRNSNRVRLNMLSTHVITEEEHRSWFFNLDHNTCRYLVFEYRQRPVGLVNFTEIDQNDNRCSWGFYLGESDVPPGTGLLMGYLSMEYVFSVLNIRKLCSQVLSNNKKSINYHHKLGFKEEGRLLQHHLHNGVYVDVIVLALFKDNWEGRRDDPLFLQATGPDAIK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00168_pseudaminic_acid_biosynthesis-associated_methylase
MSGYKTEQEEFWTGQFGDDYTNRNQGSQLIASNTALFASIIARTRQVKSILELGANRGLDLLALRSLLPAVELSAIEINPKAVKELESINNLKIYQQSILDFSVDYQRDLVLSKGLLIHIAPEMLPRAYQVLYESSSRYICLAEYYNTTPVEVEYRGNKGKLFKRDFAGEMMDRYPDLALLDYGFTYHRDNNFPQGDLTWFVLSK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00169_3-deoxy-manno-octulosonate_cytidylyltransferase
MKIVVIVQARMTSTRLPGKVLCEVMGKPLLEYQIERLRQVTQADELIIATTTNDTDQPIIELCKRLGVAYYRGPEEDVLSRYYEAAAQFGADVVVRVTSDCPLIDPGVMDEVISLYINNYEKYDYVSNTLERTYPRGLDTEVFSMAALEKACREAREKPEREHVTLFMYRRPEQFRLANSSNAIDYSQHRWTLDTPEDFQFIKLILQELYPLNSRFSWMELIGLLNEHPEWVQINAAVKQKEL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00170_hypothetical_protein
MAETTTIKLNPHPDIELNQEREEIKAFLTMPDAGINPDTGIIMVVNELGELADSDYQKNELRPYLANKLNCIAVGVNYFGVYRNSQIQIRPSFLHNINRIYNMNLTLESFTGVQSAADVYRIIAEAVVAKGITSLDLRCQPHLITGKDEYQSWGFLPAVDCLQVLGEVLQRYQLNTRKILAFGKRYGAYIALLMGKYAPHTFSTIIDREAYSRVELKHVVSGEIMEADYLFSFDLNNNMKFYIASACNNP
WTIENESVPHYFSDSHRQIRSLLFEKHRIPSETCYHIFHSEDNGVTSIYDKDRCVEILQRYNMVFYNRIPAGDKEAGQTDMELFERFLMIHGEDIQKNSTDTDFSLDSNYIFNYGDKSYEFKFDSGGRIQVSIIYPD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00171_Acyl_carrier_protein
MEERVKRIMAEILGIKQESINSKTTPDTVKEWDSLKHMQLILALEEEFSVEIPDEFIDKMLNVDMIFSVLRNLVE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00172_FkbH_domain_protein
MVQISNLTDIIPQVREFENTDYYEQSTKIYFLRNFTIEMIEPYLKYNLYSNGIKPEVIFGEYDVINQELLDPQSNLHKVNPEIIILAMFMDNFVPELLSSKDELIDFLSDLDEQFELLLVNTDSLIILNTFIPSMYSEWGIASLSHVSKSEYIICKINQHIREYVSNHSDRFFLVDWERLIRILGEENSIDYRFWYSSRAPFKNAFLDLYSREITKIVRALKGLSKKCVILDCDNTLWGGVVGEDGLDGIKLDKHSYPG
RVFFDFQKNLLYLYERGVLITLCSKNNEEDVWEVLDNHPYSLLKRSHLTGWRINWENKVKNIESLARELNIGLDSMVLVDDSPVECGQVKQYLPDVTVITVPQKLYIYPPLLLRDGLFDTLNFSSEDKNRTQMYQSEARRKQDQKQFSSIDDYLASLELVETIHPIRPGEIARVAQLTQKTNQFNLTTRRYSEADIKRFADDPDAAIYVLYVNDRYGEYGLTGILIARFEDHKCILDSFLLSCRILGRKLE
KVFVFHCMKEIIKSHNISQWQAEYIPSKKNQQVMSFWEDMGFTLQSKGNGIKKYSLATSEFKPEQIDFIKIVEE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00173_3-demethylubiquinone-9_3-methyltransferase
MDKSKSLLVSLINNISNIDCFQKKSVERFFSQLTEVQFKQVEEFADDYLLALLDKGYSLEEMAEDYSWMCREILKEQIYFKRKKHYRYNRIDDVIDKVYNNKTYMKRYMIGVGISQILWENHNLMYKFWLQHLSKSKGKTYLEIGIGHGWFFTSAVKNSGFEEYVGVDISETSLSMTRDLLDRMGTNLKYELILNDIMELTQYDNSIDFVCMGEVLEHVEKPQLLIDKIASMMKRGGKAYISTCANAP
VIDHIYLFNNIEEIRELFYTANLRIMDEIIVCNDNTPKDLWEQKKANLSYAAIVER*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00174_Putative_ribosomal_N-acetyltransferase_YdaF
MRNKDIFLQGEYVALKVLDETDIENSNWYDWFNDEKTTRFMQKHYYPNTKKQQLEFWESQIKGNDNKIQLGICPAQGGNIVGCVSLSSIDYLNRKAEIATIIGESSARNVKIFYESNKLMIMHGFHTLNLNRIYGGTIVKELADAMCRFFGFQIEGISRQDVYKNGTYHDVYQIGLLKEDFAKRFKNQAQC*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00175_L-glutamine:2-deoxy-scyllo-inosose_aminotransferase
MHKLAINGGEKVRTSLFPAYKVIGEEEIAAVKHVLESGVLSRFLGTWHEDFYGGPQVRALEAEWAEYFEVKHAIAVNSATSGLYCAMGATGVGPGDEVIVSPYTMTASAAAVLVYNAVPVFADIEEDCFCLEPHSVEQRITPYTRAVIVVDIFGQPYDADRINAIAQKHNLLVIEDAAQAPGARYKGKWAGTLGDIGVFSLNYHKHIHSGEGGIVVTDNNELAERVRLIRNHAEAVVENKGYNNLIN
MLGFNYRMTEVEAAIAREQLKKLKGLLKQRRENVIYLEEQISRIPCLQMPAVRDSCQHSYYVHALKFKSDMVDINRELFINAVKAELMPVELRESEGVNVGCGYVKPLYLQPLYQQQVLYGDKGCPFNCPHYEGTINYRQGLCPVCEKMHYEELITHELIRPPMSKDDLNDVGKAFAKVWRSYSNEK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00176_UDP-N-acetylglucosamine_2-epimerase
MNKKIMLLARDPGGANTVIPLAESLRERGYQVDLYGKDLALKRYRQMGLKGQDITEILAEIKTSSWEDFLSQQHPDFIITGTSGDDFTERYLWEAARSIGIKTFAILDQWMNYGIRFSNFTLKEQGQYWQNKLHPYLPDYILVMDETARQEMLSAGIDGRRVKISGQPYFDLIVSARNSFSAEQILKVKRELGLQPDELIFTFISEPISQDYADSNGELFWGFDEKSTCSMLLHTLDKVLERSSQRVRLII
KQHPRENEDNYSFLNNEISNEHISISTVKDIDSWSLLRASDLVCGMSSMLLMEAIILGCPVLSIQIGLNRASPLILVKRGILSPILKQEELENTLRTILVDKDIPIINWHIESGAVDKVITYMEELLCINWPSTVEKR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00177_putative_oxidoreductase_YcjS
MEEENTRIYNVLIIGAGKIGAFFDQPGSENILTHAHAFSAHPGFQLAGFVDSDTGQAQKAASIWGGEYFNNLDEALHKYRVDVVCLAVPDEYHYPYLQELAHRNINIIFAEKPLTKTLPEARKIKQRYSSLPISVQLNYSRRFVPEIITLRNNIRDGLYGRYLSGTGYYGKGLLHNGSHLLDLLLSLLGDVSDCRLTGVINDFYDDDPSVSAVLTMAEGTPFFLQSIDCRAYTIFEMDLLFERRRVRLIDSG
FVIEEYEIRESPLFAGYRNPLVVSEQRTSLSKSIYYAAENIYRHLDKDEPLYCGLDDGISVLTLCHQLKEGLQV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00178_3-deoxy-manno-octulosonate_cytidylyltransferase
MKIGCIIEARMTSSRLPGKVLMDIWGKPAIIRQIERIQRSRFIDSIIVATTINASDDVLVELLEKENIPYYRGSEDDVLGRVAETASYFNLDVVVEITGDCPLVDIAESDRVIERYLEGGFDLVSNNLLRTYPIGMDTIAVANRVLQETAQSTGDPAHREHVCLYLYEHPFDYSFSNIEAPPFLRDAKLRMTLDTKEDYEFIGKIYEELYPQKADFNLYDMMRLLNRKPELRSINNNIMQKKVR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00179_hypothetical_protein
MNMWIKNSNFLKKHFPDFYSKATAVEYTCSNLQIFGLNDGNLFLQSPSCQCYLHSSYNLDREMQELLREADDPEQILIIFGLGMGYCLDYIQKHRVRYRRVLILEPFNNIFRELLKWRDLELLLKKKGVSLSIFNDVRQIMSQIMGQVMSSRKVKFIYHLSYRSLYSDVFQEISRIFSDEKLAFMASTTTINYFLNEWTENQLISIAKKQPSASVLNNKFNNIPAVIVSAGPSLEKRIDELKEIQDKAVIIAPGT
GARICKQKGIKAHMAIAMDSQKAEAYIFKDSDIDILVGSYRLHPEVDKKFPNHLLRMAISNDFIAQYYHYYLDLPVDIINDHASVSSSAVDLAVKLGCNPIILVGQDLCYYDNKVHAGEEKDTLPESIRKSLQEATDINGERVYTVPGFLANRRDMELLNLKYKNTYTIINASEAGLGIPGIPNYKFRDVIEDYIARQDIKVRRIMEEILDQPGFYDIYKDNDIDTFYQHLLDEIRNLQEMNEEKRDMLEIL
QQLIEKQSSEKRMQELVASIQAINRQLYSNYFFQKVVMQMLNRFLIYYQAGVFYNFTGKNAEAEAFLYYETYVVYNLSNRYLNIIKAITTRELNGTEEDKQYEGANLTVAVNMQELVGTTDSIRLSKDKEIEDCLTIPFV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00180_hypothetical_protein
MLQQKIKQLQRDIFDYNIGTVPAQLSNLMTTIIETSAFDLSDIDKVQRFNHIMQACLEALQKQDYLLLADITQFELENFLDLSNREDNI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00181_Flagellin
MIINHNIPALNTYNKLVLNNLGMSKALEKLSSGLRINRAADDAAGLAISEKMRSQIRGLDQASRNAQDGISFIQTAEGALNETHAILQRMRELAVQSANGTYTSQDRTQIQKEINQLTDEIDRIAGTTQFNTKNLLDGTSSALVSTDKISTRVFMRDGLRQLDQFGQKAPGGGNYELKITATPGQAEVLKTDIMRIKHETVTVSGGVGSYTLLTGGGLSFVALQNFTGPSGVLMTGVVFQFTYASG
IGAFAVSGHMSGQSAVINVTLEIGASGSSISGLMQTNQQQVFDAVMALKLNDTGESMTGVNVSYFLDMRIEDATASFSGITSGTDAGLAMADFQATKIERVGEIALESTKLYDIQEFWDSSGNFILANPQTIQLVQGDGQKTYITLFDTDTIGSVRNKLNEAIYNGLGQKYVVDSSVSKDRFVSYDPWGTEGLQAVPGTFIIRSGISGNDGKITFIGDDPVLRALSLQTIQKATETQFKVSVYEAHNQ
VLLAKDVEISGNNLIGVVNKDVDVQFASNTGVRVTWDDTDKKFTLTGTIEGESTFIHISDNTTVFHIGANQKQDIGVGIGDMSTRALGVNNILVTSNEHANIAIGKIDIAINRVSSERAKLGALQNRLEHTINNLSVTSENLSASESRIRDVDMAKEMMNFTKYNILQQAATAMLAQANQMPQTVLQLLR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00182_flagellar_capping_protein
MPLQISGLVSGMDTESIIKDMMKAKLAQVDKVKQQRQILEWKRDSYRDTNMKIFNFRNSILDLKLESTFNSKQVEVSDNTVLAAIAKSNAPNGTHIIKVNSLMSGVTRISQSALAEYKDTLAEQFGITDTVTFTLKGKDGVSHAYSFDTASKSINDVVKEINDNASASGISAGYSADGNRFIISTTDKGAGEVIELEADPDSFINSTLKLGMAEGVYQGTDASIDFDGATGITFTSNQFTLNDINFDLKK
AGETVSITISHDIENGVAKIKSFVEAYNALMENINVKLNERREYDKESHSFKYQPLTDAQRKEMSEKEIEKWEAAAKKGIMNNESILRSLAAEIQMTTNNILKNNDDLVYEAGVNLYSRTALSAYAGTLADQFGITGTVGFTLKGEDGVDRAYSFDSATQNINDVVNAINANSAYSGIEAHYSTIDNSFRLTTLNKSPDARLEIVADGDLFLKSTLKLEVNTGVYKPGSNLIGYSKDVKDLPFTSLSAIGIG
TGGYLTGSKDNGKLVIDENKLREALQADPEGVMDLFNLTQTVLVDGKVKTYDVGLALKINTMVNAAVSRINAKAGTADAVYDNSFLTADITRIGERISTLEERMKALELRYRRQFAAMEKAIHWANMQSQWLSQKIGDLQGSNQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00183_hypothetical_protein
MLVLSRKKDQAIVIGEQITVSIIDIQGDNVRIGISAPLDIRIYRQEIYDEIQEENRKAAENLDKLKKQVQNLKDYKNYQD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00184_Flagellar_assembly_factor_FliW
MKIQSSLLGELEFDENYIIHFPQGIPAFENEKEFILLPMAEGVPFYYLQSVNNSELCLLLAQPFTFFPDYEIDVDDEDLKRLKLKDESQLAVYLILTVPDDFKKTTANLLAPLLINIENRLGMQYVSIKTNYSTRHFIFRQENKNIAVNAAGGL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00185_hypothetical_protein
LVIIQINQQYARIGLNIKEPAIRLHSVQPELKMESIPGQLTMRSPRPKLHIDQRQCFADAGLRTPEMLRDYLLEQAQQDLLEGIGSIAANGDALAKINGPDIIDIIASKSDKKRDYNVTAIPKQPPRITFETFPVEVAFQPGVINYDFQRGRVDNNFEYGRVEVYLLQKNFVRFACPGKLLDATA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00186_Flagellin
MMMRVTNKMLVNELNRNLSNNLWRMDKLQRQLSTTRRINTPSDDPAGLVKSLRLRTNLIEGEQYLRNIGESVSFLQTTDGALHNINEVMQRARVLTVQAASTNNPQAYSAIAQEIRELNEQLKLIANTTNGSKHIFAGSNVTEAPLQNGEWRGNQKDLEAEIGVGVKIPINIKIKDFFMGRLKDLYVDPLSGINPDKLEAQGLQEGDYLVSTANTLPPSEADEWRSLMGADNNPGAFFFNSAAE
AAPIAVGNAATQQDSRYSGSLKIEVTAVDEAANTLTVNISGRVAIDSGAYQDINIAGLTMDMAAANDGAILTITAAQLAAGGLPGATQDLVIWNNSGAALGGIDDANPEFAVGNQTYIALSSAEANAVEAQSYLSSVPNNKAFFYEGDSTPARLGIGTAANQNDTPFSGSLLIEATRINPGDNTAVVNIKGHVYQSDGSYKYVEMEEVVIDMTRAAGEAILTIPASKLPGATQDLVIWNNSISGSALG
GIYPYPGDPGVPADQLKYPLAVGDKTVISFSSPQTLPMNRVGINLQYPDTNGNKIDGGTFNFNRDAGSLNYDTEDFKFFTLNAKTGISYDGSITVEESQFAAVDRAVAFSYQMGVFEFLNDVSQKIELGRIPDVGNTLAGADIRLEEMLMHRSTVGARINRLELQDSRLTSTQLNFTELLSKNEDADLAEVIMNLKMQENVYNASLAAGARIIQPTLLDFLR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00187_Flagellar_hook-associated_protein_1
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QGVDHIVLSEEKDNQGMYLLVWADSRTKARISGGQIGALLDARGQTNLPDESQPSEYKEIIPNMIKELNMLAKTIMVKTNELHRGGYSLVNKSQVPDGSNFFMMPEDADTYENWAKFMAVTREIQDDVKKIAAASRRTWDTAGNKENFGDGSNALKIAQLKHNLNSPQFKVKTEGLNINFSSHDPLSFLMDGGAGIKKIEISPPYSFPDMQRLAQALQKELDENEISASVRCEGGEIVFYSTTNR
KLEVIYPGSALSDLGAAELQNGEYQLQTRVGIPGANDAALSLLQSYNQKTADSVFGIGQLQQPNNLALDINASIEITVSDVDSYSGQVSYSYVSHEYNRNGTYERKTGGFTLKYGGAASQSITIGSMTTTITGLDSKTKMEAVELKVGDKGILGLTAATAAATPYQQVDINFNFNSPREVPQRFVFDNGVLDSATNELHFFTMNDNKESNLFGQSYDGYIEITTNAALATEEPAAYLSYYEGEWGNS
GMVEDASTDDFWRSITANTGVLSQEAQRMVKNQEILLGQLQNKWESISGVSLDEEWTNVIKYQHAFNAASRFITGVDEGLEVIINRMGLVGR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00188_FlgN_protein
VKQVNKLLQDFIESIAKQNQVLERLAALGQEKQELIIAGKVRELDSLIQKEGITVSNLDKMEGARFKLQEHLAIQLGFKAEEFSAKKLLAWVREGCPELYPALEEVINQLDYCLIRLKAINSHNNELIEQSLVFIGEIQSLFNGDVAGIYSDKGQQSDEFESRPRLNLLDKKI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00189_flagellar_biosynthesis_anti-sigma_factor_FlgM
MIISKTQLLNVLKVYNKGDNKVEKAQAARGTARADELAISRESKVKQKAMHAVRQADDIRLDKVAELKEQISAGTYTLSDDEVAEKMIERVLVDRLI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00190_flagellar_operon_protein
MSNLRNCSRCGRVFPYMGRNICPRCLEKEEDEYQVVRRYVRDHPGAGVIEVVEETGVEEDKILQFLRDGRLQAKGLTASLRCERCGQSINSGRFCESCINEVNAEIQGHLPQKAKSEEPKRPPRGKVKDKMHIKDKGFF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00191_DNA_utilization_protein_GntX
MIDLIMDILFPQTACYICREPGRYSCRYPWCDACEDEMDRLKKCLSLCDHCGKYLGEGENLCVECRQNPPSFNIARAVGPYEEPFRIAVKVFKFLGRKQLAKKMGDMMAEVVEREPRFWPLDIIVPVPISQGNLRQRGFNQTELLARQIGRRLKIAVEPGILVRIKETPSQRELTREEREKNLLYAFKVTQPQKVLGKKILLVDDVYTTGSTIRECTRVLLEAGAERVSVITWAIGKGF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00192_hypothetical_protein
VLVLLKSLSLALWLFIMLAVVIAYRGNNPKKVKRFNMKLDEDYYRKKRDRYFCLLLNQGTS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00193_Transcriptional_regulatory_protein_LiaR
MDKARVVIADDHVLVREGLRKLLELDSNIKVIDEVGDGQGAINIARKEKPDIIIMDVNMPGTDGIVATRVIKRELPSVRIIALTVYEGEEVVDMVKAGASAYILKDVAGSELVDTIHRVMNGEVVIYPRVANRLVRELRQSENRKSEIRLTKREKDVLTLLVKGNTNKEMAEVMFISEKTVKNHLTSIFRKLGVKDRTHAAIYALKNRIVSEE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00194_Signal_transduction_histidine-protein_kinase/phosphatase_DegS
MAGNGEKAKSEEKQTIQMGQLEDILGQLVETLEKGRNDIYDIAEKCYQECNRLELEREEVNIEASRTIAEVEKYEKLERYARLRLAEVSCNFLSFSENDIKDAYDKARILQLALLDLRKKEMYLRRRRDHLDLDIKHFKAIALKADGFLSSTGVALKILQGNVERIGESIEEFQRQQQLGMWIIESQEAERRKIARELHDGPAQNLVSMLIRLDLIAQLGYEEKERISDEINNIKDMARESLADIRSIMFDLKP
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00195_UDP-N-acetylglucosamine_2-epimerase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00197_Inner_membrane_transport_permease_YbhR
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00207_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00208_putative_protein_involved_in_cytokinesis,_contains_TGc_(transglutaminase/protease-like)_domain
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FCTRLVQAGIPITTVSKLAGHADISTTANYYINTSQKDKAQAVALL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00224_hypothetical_protein
VIKRRNYKVIALTLTFLMLFASVASAAIPTDSVIIGDKAYSIGYVTNPANAAEIQAALDNLGTGMLAYNIDGQTSGWTSIMGGTPLTADQITALPPITYKNDAGEVSNYAAGDGDLIPSGLAVSNVVADNGNITITMTGEGTPVEGDFTFVSRIDGAGKADLAVSNFNWTEATKTVAFTFAPFAATAAAQSIEIGWQYKDSKGWAAAFTVPAAEALTVSSVSAINKTTIEVTFNKAVDAVDPANFDVK
VGGEAKTVQSAVLGADKTKATITVQGLNYNDNVTIVVTGVTAGNATVATNSNTIKVPKVTDLYELKLTSDKAKLTANGADNTVIKAQMFEKANPTTPVNVDATLTMSTTLGALSYTTVAMNDGEAAVVLTSTASAKTVTAYINATVAAVASGEDGAFVGIPAETLEITFDPAGSGDSVEMVTLVSAEANTADRIIAKFSGKINKNDIVSQFVPGGTPAAKLAAAKAANFGFKVDGNVVVGTLIK
DVVSVNDTTLMLILNVDNFYSAANATDRLDTKTGPITVINAADPGAYLRDNVTHNLSIPANIGTKVVANNAGKDFIFTDPQQPYIAGVTVEEQMTLRVQFYEAMAEDLCEQTSALPGAPTAGTRLNDHFRVDGKPVMIVPAAATVADINFANLNNYIVATGLYVSKDDKTHIGYLDGVDTRNFVTIKLDRLHKLAPGTYTLQANNVGDWAALTDPNNMVATQTFDFTVTASTTKPTVELIK
QSPEQWLLKFSENVTTVTGKTLADAIKIYKADGYAASPKEPLTNGVDYQIISGDGSKTITNVAMNPTVAVNTPAKYFLIEFLNDWTVHYNTSVSGDNYYTSTYNPYVVAVDVVENAAGNAIVPVALTLTNSIDTVSPTIEEVKDVYEIDGKTINGCPAVIGAGQSVYVKMNEPVQIPFTDVNGNGTYDAGVDMLNTMPLTPSEQQTLGTGIPQPTFEFVKGDLTWQGKLVDLPALTTTVVDND
YSFVIQPVNLAGAPTTLEPGTWTLIIRSISDDVGNTSATQTFNFTISGTTTYTATKIAWAAFDDNINTGTDADKDYLYIKFTKPMKSTGVTGVASSAVYQFNAAPLPPGNSVSKGIPGVTADWDGVTIAMPKGTWGTGVGPSFTCTLNVLNNLEAADGELLSGAHEVELTDTGTGVAVANGDMLFEAQYVCSGYAYALTGALPVIITGSVAFDANRDGKIDGAVLRVSRTLTDVEVLATGQTLV
FGGKTTAAGYTTDNAVTASVYQMLCFNARLGELGETVPLAPGSAADKYVFITTASPITGTDSSALTLKAPDGAILIGAARVLDGAEPVVIKAKVTSKAGGTAGFGNDIGDILTLTFSEKVNTNFLTATAPLFGDVNANFPVTKNGTNSSAAFTDATFSANDLSKLTGAAGTQLVLNVASKDTGAGLIIAGTAPNHATMSTSAPLPVATCPTDLLGNYLAPGQTAINIQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00225_hypothetical_protein
VKKTAKVMLIACVLVMIYATVAVAAVPSDSVIIGNKAFAIAYLTDPTHASEIQEALDNADPGSMWYSIDGMTTGWTGIFTGSSATAPEIAAFPEIQYRDAQGSLATYAAGNGDVIPGGGDVAFEVVDIY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00226_Endoglucanase_precursor
LRKRSHLSWLVLAVFTMTIFFGSGLTAVAAPGLSDVQGHWAADTIQKMVDAGVVAGQPDGTFKPDNNISRAEFATLVVKAFKLEEKAGKVFTDTSDHWAKAFISTANANGIVSGYSDTEFGPNDPITREQMAVMIVKAAGWKAEGAAKVFPDDASISAWAKEAVSTASAQGVIKGRPDGNFDPKANATRAEAAVVISGTLDVKAAPEKPVDISTLDKAGTYGPASGSQEINGNVTISASGVILQN
AVITGDLLIAEGVGSGEATLKNVTVKGTTTTIKGGETVNFENCKLGKVNIKKAEGKANVVLSGTTSISELLANSAVKVSGQGTIDKAVVYVANVVIEMKPTAYEVASGITANIGGVAVTGTSGGGGGPTTSSDDSNRVKPVNATPPAGEVPAGTQVTLSTATAGATIYYTLDGSVPSSNSTKYTAPITINAATTIRAIAIKVGQTQSLVASLAYSVSVPEASASVDAVGSGAMSAFKTITVKSTTGLSGAA
KYKVSDGTTTSAVKDLGVSAAYMTSAESVTVTILASDGTTVLGTGTLNVTAAASTSIAITAVQPPVGDKTADCTVAVGSGAMAAFKTITVTSTTVSGGAKYKVSDGTTSSAVKDLGVAAAYMTSAESVTVTILASDGTTVLGTGTLNVTAAASTSIAISGSETPPEPADKKAVCTVAVGSGAMAAFKTITVTSTTVNGAAKYKVSDGTTSSAAKDLGVAAAYMTSAESVTVSILASDGTTVLGTGTL
NVASAASDVSIDIQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00227_hypothetical_protein
VKTKKFLSIILFALLFMFSSQPVPAAEYGVMKNTVVLPGTVNELGGIAGHYIAGQLQQGDILTFRLPLNSFWTKAPIDTDESTAMTCLQSSAEWSTTTMLDAANMRYGTDCNYILVPEAHAGNPNGLFNAANPTLAVSSLSKGEVLLEVIALPDNSQDCYLYIYSNRVYIDDSIEGDVCIDIDSPSNQALKAILPGGSIPATLQADKSPGNNQSQKEPVQDNKTLEKDSGGSSDADKEDKAQAAVRIE
LRIGQKKAEVNGEEKEITLAPYIKQDRTYVPIRFIAEALGIDDIRWEAESKMITLKQESKILGIDVRNNTISVNEQLAYVMDTSIETSESGYTMVPIRYIVQALGAIVDWNADNNSIILTLPGV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00228_hypothetical_protein
MDAYLWKVLKTLGLLLIFSILLLLPSGYAIGATNYRVQGELPKYPDSDFKEEEQTRALATVKITASTKDAFTAAGESYWAEFRLPRNFYITSAGIYGQGQQMDVELARGKGFEDQKRKVEINPIAEDRNNPGHYRGFEIVVENIKYPDDYPELVLYFNRVVVPRGFKGNAELSIDSAGAGFSSGTITIANILSARLTVEASEVQFIVSREQVLGPIKVTENMSGTFEYLKMTLPGGYQWIKEKCYIDPMLGF
RVDHNGDGRYDENDFLISVEVDKYGQSTLRIETMFRTTTIGKMEIECPVQLTDRQSSYGELNLQLNSNAELNVSSLKAGSYSQQKTDLSVQNSREAYGGLCAQKIGNIIISENAPETMVRNRYVTLTLPKGAKWAKLPSVKLEGDNYLDIGPLLLNSEKDQISFEIEDCSRERPGKIILEEGKVDLATDFRGDLAIKVTGSAGASGAIIVARVKPAFTVSSSKPALVIGKQEQSAGELEISESAGRVFLAREL
WIDFPSAIKLVRSPKVEITAGDMILSRTVLKQEGDRERLVIPIQNSSSSAAKLLIKDIVYNLNNMLPDGDLQIKLGGPAVNEVNAGSNPIFPSHDWVCEVANASISKEIIQPAKKDALSPIPVAGSIIFKIGEKTYQVNGQATPMDVEPYILEGRTFVPIRYAALAAGINPDDIHWDQTAARVTIHSRDNIIIQLKIGDQVIYRNGNEISMDTAAHIKDGRTMVPLRALAEALGRTVKWDAASSSVSIELPGT*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00229_Serine/threonine-protein_kinase_AfsK
MKTKSTSLSILGVLVLLLVGMAWGGTSLLTSEQAWAEEIAFDQNQGGYGGYQAGLYDSEAVQPAADNWTRQSRYTAGTSPRFKWEFSIASPIVGTAVIGADGTLYFGARNGIFYAVDRDGKERWSFRTGYEIVSSAAIGADGTIYTSSKDGSLYALNPNGTLKWVFITDNIFESSPVIGADGTLYIGGKDGRLYAVNPDGSEKWIFPTAGIDNAVAVGNDGFIYVSTRDGKLFCLKADGTEKWKCN
LEAITSSPALDKDGNIYICSGKSLYLVSPQGKIRFAYNLNGSSEVNPPLAIACDGSIYAGADVLYRFAPSGTANWTAAVFNCSAPLLGADGTVYVASSHSSGMLYAIAKDGSKIWDYPVGGIEGGVALGEDGIIYVGSRDGKLYAIETCPLEVKACDPPHASENIALDKTIRITLNKGVLTDRGYDRINLTDELTNIISIQKSMEGNTLVVDPTVKLEKNHNYSLKIPADAFKDITGGNLKEDFILRFSTFSEKS
QVKAEFTIGQKIYRSDEEIRAMNAIPFLQNGRSFVPVRYLALALGVPENAIIWDDSTQSVKLLRNEVTVEVSTKNNRIIINGKTAEMDITPLNKEGHIYLPARFIAEAFGFRVDWNQARQTIQMVSAN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00230_outer_membrane_channel_protein
MNKLASKQRKKWLRNLMALALVLALAIGITASPAVAEQTSTPAAEPTAGLSLNAAIAQALKHSEALSKASKEMDRTKEIRDYAGSQLDYIPVGHIGIPAVEMAYTNVLASDLTWQLSQRSFTVAEDKVILDTCKKYWEVLKAVEKLKTAESSQAAALRQLQNARMAQQVGMSLIPNQSPTQLVLAAEAQYAGAQAAVAAAQNGRDNAYNSFNQHIGLWITERPQLSDSIKFEPLEVSDLEHEVSRV
LERSPVIWQADEMVNMKNFLKDITIYSSGQYRPGEARRIEVEQAELDAASAKKLVAMATRTLYYQTRNLEEAYAGSLEAIKMAEENLRVKRLMLEVGMATEAEVKAEEKKLDSARYTALEMAATHSYMKLAFSKPWAADLSSAGSSPASSAAEE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00231_hypothetical_protein
MLKRKHFALLLVLTMLATMFVGVGTASAATENVALTIPTVSQSDSGVTLGTLKITETSATMGSLAAGQQITINLPSGVEYDAVPTAATLASYVVADGTYLTAADLGFVAGSNKSLTIALNSRTSTLDRASLSFLFNVAGVSTATIDAPDADIAIEIYAPNTGITQGKVVVARSSSAGTTATVMDDSTVPVGNNKLVGTIRIAENRANSIKAGKQIKIVAPDDITIASTAADCTWANWTPASFNVAKNAD
GYSQLTLTVNPTAPGTTPGFVNIDLKIDVDDRDLRGPLEFTVKGDNVTTQKLTVGKVADYSIEVLCKGDAKTVKAGFAGQELQKMTIKENLKDSFVNGRDFCLELPSYAHWFAIPTITVEKGNGTFAADQGAKCALDNQRHKLTFTYAAAGAPTKTEFTFEDIKIFLDPDAPEGDLKVIADGKALGGKYEVVLGKVVKPINATASKNDVKIGLANQKAADITITEAAAGMLKYQVTEIANNYDK
TALVTTPNQNATLVVDLPDGVKFAKKPTVKVTAGNLKLKDFDIKLAANDNWLLLPIDKTSSEASTILLSDVEYTLDRTVPEGDVIVKLTGNAVDQTLPSDEAVIKVANAVTVTPAPGDYKNEVTFVIGASSYKVNGVEQTMDVAPYIKDSRTYMPIRYVAYALGINDSNILWDGAKQTVTLMKGDKVVQLQVGSTALVINGASVTMDVAPEISNSRTMLPISFVANAFGATASWDAANQTVTIK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00232_Sigma-W_factor
LMSIKKLVEKASRGDLRSFEELVVLYQDRVFSHCFRLTANSDDAQDLAQEVFIQAFRAIKTFRHEADLGTWLHRITVNSWINWQRRNKKLLIFSLDDPVNTPDGEVIRELAASEASPLEAVEQQELSAAVRTALDRLAPEYRTVLVLREMEGYSYEEIAQILDCSLGTVKSRISRGRRDIKKEIVKLRCEWDDM*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00233_mycothiol_system_anti-sigma-R_factor
MICNEARELFSLWIDHEIEEAEREALQLHLDSCPDCRQELADWERISALLRESLAKAAEEQTAPPELSRVVMKTLREQDQPKRLPGWKKGAAGIAAALALYLGSSGLLWTPLWQVANKEAPVIKDPVQQSSKQQIAEQAREKTPGNNAIIPAGKQDDKSSPMAPQGMSKPADKNNPTAPAGPENPNIAAVDTGNPTAAPVFLSKERVLVSTIYKLVPYDADQAKAQQEAQKIAAAAGASVQLLGQ
QLDGQRSATVLKFSCPVETAEQLKQELLGLGSRLSLEENRQDLTSRFNDTLEQYRMLSAQAATVHDKEQAKELEIQIKALEKQLNNWDKEAARESIVLWLET*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00234_Serine_protease_AprX
MTLLRTEHLYQQNKQKKPGRSLKDKTIALMLLFLLLFPGPVLAGPGEASSETELLNDRTADIIASNILLAPGLLTPSGLSGKGQIIGIADSGLDKGSISDLHPDLQSEAGKMPRVAMLKSYAGRSLPDDPIGHGTHMAATIAGSGNASAGKYRGIAPGASLYFQALLDQAGQLKLPEQIGELFRPAYEAGVRIHVNGWGGGSNAYSGRSAQIDQFVYRFPDFLPVFGAGNNGPEKASLTAEANSKNAL
TIGCSQLPRPAFGPEARYAEQIAASSRGPAADGRIKPDLLAPGSAVVSVCSRLLESNYAPNPDYTLMGGSSMAAAVTGGALALLSEYLELERQMSRPSSALMKALLINGARTPGGFPSNEEGFGVLDLAGTVLALQEGSFQIIDNDNGIHNGENVKYQARLTEGGGDFKVTLAWVDPPAAPASQHTLVNNLDLSVEDPQGRIFYGNDFRGQGQTDTANNVEQIHIKDAVPGEYKITVRGTRLDRS
QKFALVYGQALEHDIIRKQQGQILKLSQGEQKDTSGLQLFKLSNGRMQEQTAEIPEGSDYYSIGQKIYIVSRSWLARGVQVLSEGLGYTEKLLLEMNKQLREGGFFIDPSLTGEGRILLNKIPVNDSTTVPPGSEVNALINPSQQTIWQLKAAYEEVDGFIETLNPEQRELKLLHDERNYRIAEHVVISYLDRLIDCDPVDAPYGTEQVARLENLAPGLKVTLTLSPSNQEIQYIKVERDLALGQAAEVD
AKEGEIKLESGQSYRLFPGNTIIKDQQAGKLEEVKTGDHIAALLLNGTNNILHLLVSSEVYYGRVLFYSEREKMLYIQESKANSSSFRKVPLDTQTEIFHSGLQAGVLSLLPGTWVRVINCPDQDKAWRVDAVYSAREDSSYFSAYDPVRQTVNLQDGSILSISRYTQIIKGSYNISPQMLIPGEKVNIVTLAIAGSSNEFLARLEVEVAPGTASPQLEAKAYVLNGILILQGWSSSPLVYIYRSDVGCIPLEVGA
DGSFSQLFKMKEDEHEVTLLAIEHSGGAIKGLSLPLLSFAPEEAGKEFSDLAGHPWEHEIKKLLEAGIISGYEDGCFKPEKSISRAEFICLLARAQGWDIGESREQNYFSDNREIPWWALGAVYAAQEQEIIKGYPDGSFRPWRNISRAEMAVIMAALQCSEKKNDQQEEQTLPELPFLDRFNKLPSWAMKAFRHLYHTQQLDYLDYARGSYIDAERPLSRAEAAAIIAKMWSEE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00235_putative_membrane_protein
LEHSIFMVIIAAMTPVVELRGAIPLGLALGIPPAEVFLLSLIGNILPIPFILLGIRCLLNEIKKIPRLHNWIDRKGKKGAGLLNEKIRRWGWLGLMIFVAIPLPGTGAWTGALAASFLSLKFWPSFLAIVGGVLIAGLLVTGASLGVISFF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00236_UDP-N-acetyl-alpha-D-glucosamine_C6_dehydratase
MTYWLRLILMLLFDSCLINLSIGFSLWLRFEGEGGIPANYLTAFFSLIPWYTFITLGALYAMRLYHRMWKYASIGELYGIVKAVTTSTAIVIILIYTIPLSYLPRSVYIMSWVFMIIFIGGSRLSWRLLRDLIIKESNKKAKRTLIIGAGDAGAMVARELNNNQSLNLLPVGFIDDSPLKQKLSIFGIPVLGSREQIPFLTASHGIEEIIIAMPSAEGRTIREIVNICQATGVRLRIFEGADDLLHSRSKIRDVQLEDLLRRE
PVKIDLEEIAAYLQGKTVLVSGAGGSIGSELCRQVCRHRPQRLILLECSENNLFDIDNELRESFPEQALEAELADVRNREKMQSVFEKHFPQVIFHAAAFKHVPMMEMHPDEALNNNVLGTRNIAEMADKYGSETFILISTDKAVNPTNVMGASKRIAELIAKDINRSSQTRFAAVRFGNVLGSRGSVVPTFLKQIQKGGPLTVTHPDMTRYFMTIPEAVELVIQAGAIAQGGEIFVLDMGEPVKIADL
ANDLIRLSGYDPELDIEIRYTGIRPGEKLYEELFSGYEEMAATRHQRIFISSKELDERYNGIRNNIAAWIKNLPPDRNEIMRFIQELIPEYCGSEANEKPIPRGEVIYLEERGNRIKKSSGIK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00237_putative_bicarbonate_transporter,_IctB_family
MAKKKKQQQKNIKGNSIKDTLREQSPTRGLSPSLKLRRVEAWYYTLVFIAVGFLIFYPPYFRGLFFSEDMFLYHTFTGLVFILLWIEKIKRREFSFIETPLDWAILAYAGAYLLSLIGAVHIGEAFYGFLKALNYFMIYWMVSQVVRDYRRYEDILRVILASGAGVALIGILAAVGISDYPSAFDPNSIRILSTLQYPNTTAAYLAVISLLGVTLWIREKNPLLKLIYGSCIYLLLLVVLAAFSKGAWVILFVGALLLLI
GMPGLYRLKSLYILGLAGVAALATYGKFMAALPVVTQQEPGIALQKLLLGFIIVLAGQAVWDLGIFLQRKWGGRALAAYAASLLILLMLLVIRLPEIPQSAQQILPENLTARFSQIKDTTGTSYSSRMDYAHWGLAIVKDYPLVGAGAGGWNALYHQYQDYLAWTTETHNHFVQVWVEAGTIGFIAFISIWIGFFLALWKIYRGKRERGQATGDSWILNWGTATAALAFGLHAAMDFDLSLGAMAI
LLWTLFALLNAGSRLEASKEEKRLLQHKPVMNTSLAAILAFMIIIAGSSFSLAHSSAREGNGLLQEISEEQQLQEKEAEILIARSLYQKATQFDPLNADYHAGLAQACALQFIQAVQSKNPMARECYELTRQEIKKAGELGPYSIKLRNSLANLCIGLNDPEGAIEEARWAIRCNPNDINAYEGVIQLALKAVELHLNNKQAEKAAFYAESIVEQNRELQIKKEAIDPVKAAYPYWSGQPLELSPAAQLSLGK
AYYLLGQYPEARATIEPLLPMVQDGSWQSPETPAWHLAALYRSGEQEQAEALALGLHSSNPQSAALYRSLLQLQALPAKSEAGKSNRCTGTKE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00238_N-acetylmuramoyl-L-alanine_amidase_LytC_precursor
MKKALHIFTYTILLSLIVILAWAQPSPAATAVIKGSVVNIRQGPGTGHEIAGTLYQNTEVAILESKDGWKKIQLGSLNGWVADSLLQVKKEEIRLQVTADKANLRSGPSTSSSQVGQLRKGDSLILLDVEGEWYKVQVPGGSSAYIASFLVSKTAAAANSSSAPAAGSQPETTTTAPASSPAPAVTRQVEVISGPINIRSGPGESYPKLGSIDEKTAYPVISKEGEWYKIRLANGSDAYVAGWLVKESSMASS
TVIPPAAAGGSSAATGGSAASSSAPRVFLDGQALSFEVPPIIENDRTLVPLRAIFEALGATVDWDNATRTVTSRKGSTTVVLAIGSLTPTVNGQVRQLDVPAKIVADRTLAPLRFVGEAFGSTVDWEGSTRTINIKSPPAPSAPSAGSGKKAVAVTVNKELINLRSGPSTGHAQLDQARSGERMQVLAAQDGWYQVSRGGKIAWVSGEVVDVAWQENEPPAVPVTTSPGTPGNSSSELPPPASPENIRI
LSSKDETGLKIIIGSGVELKGRLEESGNNLRYYFTGRSIEGNTIIRENIAGEILEVKAEQQGEDAVIYISIPANLKYRSASEEGGKKETITISNFITGIERKTFGSKGERIILKTVLPLDYSSEQQGTQMKIKLPFLLKGSAPSEYSFDSQLMQRLQLNESEVNGTQGMVLTIETKNPAKFAFGKSAEGNQLHILFVDQSDVQQLGSAIVIDPGHGGKETGTIGSWLKEKEPNLDISLKVAALLRQRGMEIVLTRD
DDSYVSLEERADIANLYNARLFVSIHNNASQNNPAAQGSETHYYAPLDNPELFMQSAERCRLATCIQEQLVSKLRRVDRGVKTGPSSNFSVLRNTRMPSALAEVVFLSYPEEEQLLQQDYFRTLAAEAIADGITQYCGGSAEIKL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00239_Putative_transcriptional_regulator_YvhJ
MAKTKSYLKYVFIAGLIFGVFFGIGSGLSHILYADRDADPAVEEEETANKPKDGKRTKILVLGVDARSGETNSRSDTMILVTIDPQLDKAAIVSIPRDTRVQLKGGAVDKICAGNYLGGPKYAVEVVEKLMDTKIDYYVEMNFKGFKEIVDTLGGVTINVPQRMYKPTEDIDLYPGTQKLNGRQALAFVRYREYLMGDIQRTAAQQEFLKALADEILKPKTLTKLPTLVRQLDKHMDTDLKKSDML
RLASWAPGFTADSIVTQTLPGYFYDECDEYGNLTCSYWIADKKNLAGLLDNMLAGKTVAVIQSSTNSQKKAIATKNNSSSAENDISSNRDVERSKLPSPGHAGSWNPAPSNNKSETSNPSPDPTGPAGYI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00240_putative_undecaprenyl-phosphate_N-acetylglucosaminyl_1-phosphate_transferase
MNLVLKMGVCNIMSAPVYIIVLLSAFFIAYLSTPGVIKIAYRIGAVDQPDQRKVHSANMPRLGGMSIFLAFIFSMIILQKYSGPYLGIILGASIVFLVGLLDDIFQLSAGVKLLGQSLAAAVAIYFGVMVHFVTNPFDGLMALGYFSIPLTFLWIVGISNAINLIDGLDGLAAGVSAIAAVTMGVVSLLQGQVEVALVAFLVLASILGFLPYNFNPAQTFMGDCGSNLLGFILGCLAILGTAKSATLISLLLPIVIL
GIPIFDTFFAIIRRINKRTPIFKPDKDHLHHCLLAMGMSHRNCVLVIYGISGFFGLVAITFSFVTSPKASLLLGLLLILIVLGASKIGMFSGSSARMARQAIESNSRTKISEHI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00241_colanic_acid_biosynthesis_protein
MRIALSGYYGFDNAGDEALLSAITSTIKKLEPAADFVVFSGHPRKTSSLHGIRAVYYLHPGQILRELFRADLLISGGGSIFQDITSARSLPYYISVVALAKFLGKPVIFYAQGVGPINRSLSKFLMRLVGNRVDLITLRDHDSAVYLERLGVSRPPMIITSDPVFSLQPEPGVREEMDKLLQAMGLRGQVLVGVAVRQWLALEGYQESLARVLDELAERGCRILFIPMAYPEDIPAARKVMNLMKNDAWLLE
RPLGAREHLALIAHLDIMIGMRLHALIFAASQGVPFAGISYDPKVDAFLKLFEMKPLPLAYKDMKAEIERVLEDNEWRERIRQRAGEMREKSVENARLALSLLR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00242_putative_peptidoglycan_biosynthesis_protein_MurJ
VRNKENKTGKNFIGVSILIFFSKLLGFARDIVFASVFGTTILTDAFQVIFSFPSLLFSSIGMALSSVNIPDLTYFVKSRSREERNRYIASLYAQITIWGSLIALLGIIFAPALTQLIAPGLSGEVTGIATFLTRIMMPTLLFVSLTYLTTGVLQVHGYFMLSAVISIPFNLLIIGALLLRGADIIILGYVTTAGWFLQFLIQVPVLVKEKYRFLGKIEFKNEKIINLYKNLLPILLGNSLLQLCLIIDRSFATHLSEGTTAALAFG
SNLFITATSIFIVAMSIVVFPRLSEYCLQLDYERMRETLAAVFKVLLFILLPYLLLVVAYNREIITLVYERGAFTSKSTAMTSLAFLLYSLAVVGYACQEIFNRVFYALKKFHIPMKASLLCLLINLLLDFLLFRQAGIAGISLSTSFCLLLYGVIMSFMVRQEVGSFVGRDFLLFAGKLSVPAGAMLGVVYASKCFFPGGPVYAFLLPLLLSAGAYLGAAWVMGLRKDLLLK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00243_hypothetical_protein
MRNRWLISGWFFLLLTLLLAGGGLWLRVSNENQNRAVITVIDYREFWKTADAADMELDEVLKQLKESGVTHVGIKETSLRDLAYSGEIYLSPWGEFMAFNRNYAPELEAAARRAVGEQVISPDKLVLCSDRPDTIRFLQKQLASRFQPEELLSFKADGQSYFIINAELLPLDKPKDPKKPANEFVEVDARLGFDDRVLDRLKAGGFNIVLRPDNSMGSNDAYLQEYEELVGKYDVKYLVFGNEVSGA
PDRLEVMEDLVKKYGLIIGIIETPVQLKYVEQKGLDELMVAAAYPINRLYSTTNDEFVQTTDERYYRWVRAVVDRGIRILYVSPFKDRKVSYSENINNTQEVIERFHAAIQGKGFTIDQPLPHLSSEQPGPWQQLALSMSLLLAGTLYLFYLFRPGRRFIILLLGLGIAGCLLCNLVVGMDLAKVYALAAAILYPSLSSLLLLIYLRNHREQALASKLLAGLAIILGVNALGMLTVVSSLADIRYIMNVKVFSG
VKLAFIMPLLLFVVNYFACFAGEEGFKEKVMGFLRMNPNYLVLFTLGVAVLALYYYLGRSGNNPQIAVSSLELRFREVLESVFLARPRFKEIIIGYPSLFALVYLYHRYKEEVILLVLGFGVVMGSISMVNSFCHVFTAVTISANRTLAGLLVGVFFALLALLGIGILEWILRRCGVIS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00244_hypothetical_protein
MISYKKWLLVTLSLILLPLIAIAGFNFYIDPLWNFGHAHHYNRIQASFDERQQKTNRVTFGSFDYDSLILGSSRTTYISQYDFPGCKAYNYSVSNMLLDEYYDYVEYAKARKGQEFELIIIGLDFYASNQNLKREFHEPSLYIEQANEFGYRYKTLLSRDVLRYSWQNFQASRQGQPQNFAYDRRNIKTLNLVPAGEKQKKIDATVDKYRRDIYANYHYVDVKGILSHLKESNPHTRFIVFTTPISQPLYEL
MLEEGLYPYYQRWLSNCVEVFGEVYNFMGPNSITTDLDNYYDASHVYPHIGTLIAHRVMNSSDPRIPEDFGVLIKK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00245_hypothetical_protein
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INFNSPYKARNIQEFWRRWHMTLSRFLRNYLYIPLGGNRHGESKLYRNLIITFLLGGLWHGAAWTFVFWGFLHGLALVIHRLWQKTGLRMNQVLAWLLCFNFVNFSWVFFRAESWSEALKVIKGMLGFSGIVLPAGLAGKLGFLAPAGVLFGEFTLQNPARAALLLAISLALVLFWRNSMELEKDFTPGLRQAVWVGAMALAAILSLTGVSEFLYFNF*
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STRHNPEFTMLEIYQAYGDYEVMMQLCEDLISAVMFKVNGSMQIDFEGQQLDFTPPWRRVTMLDAIKEATGLDFSLIKGDEDARQAARQLGLEVKEGASRGELINEIFEQFVEDKLIQPTFVYGHPVEVSPLAKRNLKTPEFTDRFELFIMQREIANAFSELNDPIDQKERFIKQVEKRAGGDAEAHMMDEDYINALEYGMPPAGGMGIGIDRLVMLMTDSPSIRDVILFPTLRPRINEP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00249_Transcript_cleavage_factor_GreA
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00250_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00256_putative_nicotinate-nucleotide_pyrophosphorylase_[carboxylating]
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00260_Pantothenate_synthetase
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KKLAQEITVKAEFDLELREKLLRESKQQGLKIKEMTPLRSNGQLLLNVVADPCREGEFCENIIAPAFSNILGERMEVCEKTCPRFRAWGQCKFTMSRACSYKINSAVVQVGKEAVCGDSFTIASLKEGKELIALSDGMGVGEKACGDSQATVRLLENLLESGFQRDVALNTINTVLLLRSAQESFATLDMIMVDLYSGDADFIKVGSAPSYIKRDKKVGMISAHSLPIGILENVDVVSERHSLCPRDILVM
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00273_cell_division_protein_FtsL
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G*
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TGG*
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SRSLAQITPKLQEGAIIMRIEIKAEGNFYEQNEAGELFTRERFQAIEELANQEIKRQILLSIDKAQELNSDVFGWGQMIKQNYPQQWGEMEGNWEELFPTVDKQIKVDFSLRRSYLADKSFNFQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00286_Spore_germination_protein_B3_precursor
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QFTGKTTPKLEQDQLKMKVTIRAELVFYEKSKSGELLTLSWKEEMERLAAQKIKQEISACIKKSQLLGSDILGWGYILQKHEPQLWESFSANWDDFFPTIESDIEVETLIVNSMLSQKSFRFR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00287_hypothetical_protein
MYYNLILSIVLFFLLFLLREGRSWLKNPLGIEYCCAVLLFLLSLAYTLDLVQGWHLMPNPGAIFAKLKPLSDLLEII*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00288_spore_germination_protein_(amino_acid_permease)
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FIVGFTALTVYYQGLVLNLKELLRLENPRPLILPLGLFLMVFTSYMYPSDLNYITTRLRYVPFYTISVNLLYLTIIFIAASLSKRRLSRHSRGEG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00289_Transcription-repair-coupling_factor
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LQLYAHRESREGYAFSPDTPWQSQFEDEFPFRETPDQLKAVNEVKKDMESRRPMDRLVCGDVGYGKTEVFLRAAFKAIMDGKQVAILVPTTVLAEQHFSTFTERFAAYPAVIEVLSRFRSNSEQKRIVEDLQKGVVDIVIATHRLLSRDVKFKDLGLLVVDEEHRFGVAQKEKIKALKELVDVISLSATPIPRSLHMALAGLRDLSVIETPPPERYPITTYVLEYNEEIIVEAVTKEIERQGQVFFVHNRIE
DIYRVKEQLDELFPGIKIAVGHGRMKEDELARVMMDFVNGKYPLFLCTTIIESGLDMPNVNTIIVDEADKMGLAQLYQLRGRVGRSNRLAYAYLTYRPDRVVSEASQKRLNAIREFNELGSGMKIALRDLEIRGAGNILGAEQHGYIQAVGFDLYCRLLEQETGRLKGEQVQESRVDPQLDIDIDYYIPESYIPDSGSKMRIYRRLLLAGSQEEVEEIREEIRDRFGPLPQAVENFLQIAVLRLLARDKEIK
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00293_50S_ribosomal_protein_L25
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CCTHAVFSGPALDRLSRAPLKEIVITNTIPIDESKKLPNMIILSIAPLVGEAILRIHEDLEVSKLFEE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00295_Bifunctional_protein_GlmU
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00296_bifunctional_N-acetylglucosamine-1-phosphate_uridyltransferase/glucosamine-1-phosphate_acetyltransferase
MQYDAVILAGGVNSSELKKIAPYDNEALIIIGKYPMIYYVYNALRQSSQVRNIVISGPTEALRNIFAREEKLFFVEGGKNAVESLACAVKLLREKGTTERLLVLPTDIPFITTTAIDDFANQCRNYEADFFYAITSREVNELKFPGVVRTYVKLKDGVFTGGNLFILRSEIIDQVLEKASQIVERRKNPLAIASLFGFGLMWRYLTRRLSIAAAEKRFFKVLGIKGKAIISPYAEVGVDVDKPSDLEIAQKYLLDLTL
*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00297_putative_HTH-type_transcriptional_regulator_YdfH
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00298_4-diphosphocytidyl-2-C-methyl-D-erythritol_kinase
MRKNIILKAPAKVNLTLDVKGKRSDGYHELETVMHQVNLLDIIRISQGTGGIQIKSNSSLIPTNEENLAYQAAEMILGEYAHKEGVEIYIEKNIPVGAGLAGGSTDAAAVIQGINQLCDLGLEEEELLEMAARIGSDVAFCLAGGSKLARGRGEILSNLPQRMIPYIILVKPHFQLSTAEVYRELDLTQVEEFPDNVAFLAAWEAYDIINIAGNMRNVLETVSIRKYPEIAAIKAELIRTGALNALMSGSGPSV
MGIFMEEEQALKAREQFRTRYQEVFLLSSYVSTKSEE*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00301_NTE_family_protein_RssA
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00302_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00303_hypothetical_protein
VSRLLKCEFPEGCMLDLWAKVIKAKYIEKQVKVLDTVFCVPDEQVGGKVSCVEDIKVKVIKAHEDLCFNKVKIFIDYEVILFVLVEGEYQIITVTDRYEQSIELDEFDPPLTSEEFRIEIEQSEIILKNWSFDFEIKGNCEDSSNPCKLTTPIKGTCIGLKVYVDIIDKLGKFHDVVVYGELDPDVDY*
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LSSKKTKIP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00305_Putative_teichuronic_acid_biosynthesis_glycosyltransferase_TuaH
LSNINCILYPPTVDFHYLVQRPQHLIKNFSELGVLSFFLNNPHLHEHQRRGIERINPYLFLFNGVEPTEFLRDIRPVVYYSATAHVDMIKKYRPSLVVFDSVDEPSDEFAGWRPYYHRAVATADIVTTSDKLYKMAKSINPRSVLVPNACDYEHFSPSTHLPIPADMRGINSPVIGYIGAIATWVDLELLDRVAARLPHFNFVMLGPLYNVSELPQRPNLHWLGFKDYKDLPAYAQAFDVGLIPFKLSSM
TESVNPIKMWEYMAVGMPVVATALPEVYKFQELIYYSENEEEFIENIGKALVTDNPFRQKQRMELARQNSWSARAVEIIDIIENTLAEKGIKKTEYRVDGIMDTLLPDSAYTDFNEPFRASLSPFQQVLVSPGSGFRYSIYPGKESRDRDRVRNVWSRADSAFPAGDIAVVQKSGFRYYTQRHQKELGLYYG*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00307_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00309_Putative_PBSX_repressor
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00312_Ribosomal_RNA_small_subunit_methyltransferase_A
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SILNSIGIDPKSRPENLAIEQFARISDTLVMRRFGNDI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00313_sporulation_lipoprotein,_YhcN/YlaJ_family
MKRKLLYLLCFSLMFMLLASGCQKTTAKKPMAPSAKKPTQTSQMTPSERRVLASKLSKMAEQVKGVQKATVVVADIGIANNITGNTKTNAQMNRATAKNLNDNTIGSDAGINRSEPKGMIVMVGLTLNPGNKDMNKSNQIKSKVMNKLKASDRRISQVLVTTDPNLVKRITDVAAGILEGKPIKTFEKDIKNIDSSLRQQKTTY*
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RIKD*
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KQYWPADVHLMAKDIIRFHAIIWPIMLMALDLPLPKKVCAHGWIMLEGGKMSKSKGNVVDPVVLVKKYGVDAVRYYLVRELSFGQDGYYSEEMLVNRINSDLANDLGNLISRTIAMIERYFDGVIPAPGVAEALDEDLINAAREAYREATEKLDKLDFASYIVATRKLVSRANKYIDETAPWLLAKEEAKKERLTSVMYNLAESIRIALILLAPSMPTLLSRANRQMEIFDLSQNPSWDEAAEWGRCKA
GSKVSRGEPLFPRIDLKSLESGEQQPVESPGKKKVEKSQPAVPELVDIEEFARIDLRVAEVIACEKMKKADKLLVLRLRVGEEERTVVSGIAQYYSPEELLGKKVVLVANLKPVKLRGVLSQGMILAAGGDKVEVLLVDQDVPSGSRVK*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00320_Initiation-control_protein_YabA
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00321_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00324_Thymidylate_kinase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00327_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00330_2-oxoglutarate-acceptor_oxidoreductase_subunit_OorD
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MIYKAGSYEVIVIGAGHAGCEAALASARMGCQTLLVTMSIDHIALMPCNPSIGGPAKAQVVREIDALGGEMALNIDKANLQIRTINTGKGPAVQALRAQADKRQYHLEMLKTLFNQKKLDILMAEVEDIELSAARVKAIVTRTGARFECQALVLTTGTYLKGRIIVGDISFDGGPGNQFPAARLSESLKRMGLRLGRFKTGTPPRIDSKSVDFSEMIEQPGDIRPLRFSFISPLINRPQLSCWLTHSNKK
THQIVMDNLDRAPMYTGIIKGIGTRYCPSFEDKVVRFSHKDSHQLFIEPEGRDTDEMYVQGLNTSLPEDVQIEVLKSIPGLENVRIMRTGYAIEYDIIYPSQLKLSLECKTVEGLFTAGQINGTSGYEEAAAQGLIAGINAALQVKDREPLVLKRSESYIGVMIDDLINKEIEEPYRLLTSRAEYRLLLRQDNADLRLTEKGRQIGLVDDNRWMAYQQKEEILEVESNELKFSSFTPADEEMAEFLSYKNTA
AIRDRVSLWELLRRPELSIYDYVGKGWLRDNDPDILEQLEIQAKYEGYIEKQKEQVKRFEKLENKMLPPDLNYDEVYGLSQEAVQKLKIVLPASVGQASRIAGVNPADINVLLIFLEKKRRK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00380_Ribosomal_RNA_small_subunit_methyltransferase_G
VEYNVRTFKEMLIEENSRQNLVSRKSLPDELEKHIEDSRSLLKFMDLKGSRVVDIGSGAGFPGLVLAIYCPEGEFLLLESDLKKTEFLQAVINRSGLKNCQVLRKRIEEVGRSELRSSFNFCSCRALAMMNVVLEYGLPLLRPGGKLLLWKGKNYLREIEQAANALDILGGKVVDIFTYSLMAERDRAIVVVEKERDTPAKYPRRVGIPAKRPL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00381_Nucleoid_occlusion_protein
MVFKQLERLLGKSSEVKVTGIPVEKLYPNPFQPRKDFDEREMMELAQSIEAYGIIQPIIVRPRDDGFQIIAGERRFRACCLLGIREIPAIIQEMDDERVATVSLIENLQRRELNYFEEANAYNRLINGFGLTQEELARKIGKSQAAIANKIRLLKLPLPVRSLILPERISERHARALLKLNSAEMQLEVVKQIYEKELTVKETEELVEGISRNNIPQEIGRKPKGQSVSMVIRDARIFLNTIRETVKRARQTGIDIVMV
ERDVDSEYEITIRIGKHRKNQQLAL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00382_Sporulation_initiation_inhibitor_protein_soj
MAKIIAIANQKGGVGKTTTAINLAASIAMGEQKVLLVDCDPQGNASSGLGINRKRLKNCVYNCLVEGLPAKEVIATEVDGLEIIPATIQLAGAEVELATRENREHYMANVLKPIKEAYDYIFLDCPPSLGLLTINALAASNSVLIPLQCEYYALEGLSQLMDTILLVRKRLNRSLKLEGIALTMFDGRTNLAIQVVDEVKRYFPKEIYQTIIPRNVRLSEAPSHGQPAVIYDPRSRGAEEYRELAMEVLERAK
KGKRSW*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00383_putative_chromosome-partitioning_protein_ParB
VQKKERGLGRGLEALLSSDLGFDETQEVTQIEVDEIVLRKEQPRKRFDDKSLRELADSIKEHGLLQPLIVRPRQDGFELVAGERRWRAAQMAGLKQVPALLREMDDVQAAEVSLVENIQRDDLSAIEEAMAYKYMMDNYGYTQEVLAEKLGKSRSHIANMVRMLALPEQVLTMLESQEITAGHARAILSLPGSTEQIAAAEEIVAGRLSVREAEKKARSIIKRKRVEKKRDPVILELEERMESFFSSRTK
VLQKGRGGTIEISFYSLEDLERIVEIIGLD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00384_putative_enoyl-CoA_hydratase_echA8
MSDRKLDLLTLDIADSIATVTLHAPPVNALSQLMLDEISSCFSNLSQNKLKVVVLTGNMNCGFSAGANIRELVSQNPQGNRQFFASLYQLFNQLEDIPFPLIAPINRFAMGAGLELALCADIRVMDDNARVAAAGVNMGLVFGTQRLSRLVGLGQAKNMVLTGRQITAHEAYDIGLVQYLSPPGQALNQAWKLAELIAQKSSLSVLGAKKVLNAGFDIPLDKGLHLEFEQLEKMLASEDFQQCTR
AFLNKTAKL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00385_Septal_ring_factor
VKIRKKSPRKKTDNNFTFIIIPGKTGKALHLGLARKYILAGSLLLSSVVLLSVMITYLFIQSQSEIRSVEKIKMESLKKDETIEILGEEIQNMRKQQEGIGQTQNEIKKLMGIMPEAEVNAKPSRGTMVSGMGGAENEVENILAATRDIKRDINRQENEINSLLSEVSQRGTYYRSRPNQWPVKGEISSPYGWRKSPFRSSKSSFHDGIDIVEAVGTEVLAAGDGKVIFAGWKAVYGKTVEIDHGYGFISRYGH
NSAILVNEGDKVKKGEAIARLGNTGKSTGPHLHFTIMKNNESVNPKNYLP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00386_putative_acyltransferase
LWKKARRQNIESLISHGVQVKGEIRSSSSIRIDGNVEGKVEVKGDLIVGEKGKIKGEILVDNLILAGRIEGNIEARGRLEITATGSIMGDASCSLISIEEGGFIDGTSKMIRPQEKAEMKKGEKVSVARSVSS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00387_putative_sporulation_protein_YyaC
VELPRLNRINCKDSFHCDDPLCFSKIERSISFFLKDLNQDYSREIVYLCIGTDRATGDCLGPLVGTRLQSLLRSAHIYGTLEKPVHAANLDHFLNIINAEHQNPLLVAIDACLGNADRIGYINIKKGSLKPGTALRKVLPEVGDFHISGVVNIGGFLEHMVLQNTRLYTVYKMADIIAKSLCLAHSSFKRHSLAACQASTLQE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00388_putative_membrane_protein
MGYLGAVIGAGFASGQEIIQFFVVYGNDGLKGTLMATFAFAICGGMLLYLAHRHQVSNYQDLLAGLMGNKGGKLIDWLLALFLFLGISTMLSASGAVFEEHLYLPKSLGILLTYLMVIFFLFSGKKGLIFSFNMLVPIKILFLLIVTSYVAFFMESQALGSYSLYLCPVDSRLWIMSGILYVAYNFSLAMVVLSEYQSLSNCREGIAGAVWGGLVLGILVVLSYLSLCKFLPAVMHYEVPMLYLMGRISPGV
KQLYTLILWIGILTTAIANAYGFTQRIADFSGLSFGSCLLWCMTLSLPLAMQSFSALVGKIYPVFGLLGIIISVLFYQGIKDMALLLYYNIRN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00389_L-seryl-tRNA(Sec)_selenium_transferase
MNNLKNIPSIDEMLKNERIKQLIEVYQRDFVVDVVRSATEELRRELFLKEEEIKKEKLMQAILVKVEHMVSRLAGGSLKEVINGTGVVLHTNLGRAPLGKGAIDYMKRMASSYNNLEFDLEKGERGERYGHVEEVLTRLTGAEAALVVNNNAAAVLLGLNTLARERERVIVSRGQLVEIGGAFRIPEVMKLSGARLVEVGTTNKTYISDFAAAINEETALLFAAHTSNYKILGFAQEVPLEELVKLGQEKE
LPVMQDLGSGIFYDKADWGLREEPAVKNCVAAGADIVTFSGDKLLGGPQAGIIIGKKPLVEAMKKNQLTRALRVDKLTIAALEGTLLEYLLGSPKKNIPVIEMLALSREELREKAERLLELLEKRTDGLSGIRRLKLVELEDMVGGGAYPTYKIPGFGVEIEFSQPGLEKAAKILRLGNPALLTRRQEDRMLLSVRTLLPGDEIKAADLIAGVVRQKGDI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00390_SelB_translation_factor
MKRLIIGTAGHIDHGKTTLVRALTGVDTDRLKEEKQRGISIELGFAPFMLPGGQKAAIVDVPGHERFIRHMLAGAFGIDMVVFVIAADEGIMPQTREHLDIIELLGVKQGVVAITKKDLVDEEWLLLMEEEIKEYLAGTALKNSPMIAVSAISGEGIEQLLEEIENMAEQVEEKPVMGQARLPIDRVFTIAGFGTVVTGTLWSGQIKTGESLELMPVQRPVKVRSLQVHGARVTEALAGQRVAVNLQ
GIEVAEIKRGYLLSTPDYLHPSYRVDTRLRLLSSSKRTLKNWNRIRFHLGTEEALGRVVLLDRDELQPGQESYAQIVMEKAVVCQKGDPFVIRYYSPVATIGGGSIIDPHAPKQKRFREEVLEQLVMKEEGSLYDLILQEMEAAEATFTSSDLARKTGHEEEHIKEELQELLLDEKVGDLKNGEYMSTRSLEKINDEIVKRLQEYHRQYPLRAGYPREEMRSRFFKSINPRSFNAIIKYLEDRGSINSQNNQL
RLAGYSPEPGVKEKHAIEKIQELMDKELFAPPSLEELQQQLELNVEDFGEVVSYLLNQGLLIKLSGDIYFSTQALEEGKKILEEHFGREKELSLATARDLFNTSRRYTLPLLEHYDKTRFTRRIGDIRVKA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00391_hypothetical_protein
MSKIGIPRTLAYFIYFPLWKTFFEELGHEVVLSPATSKAILDRGVKEAVNDACIPIKLYHGHAAALAGKADYIFCPRLVSVRSHGDFGTETFCPKFLGLPDMLRLAMDDLPEIIDIRVDLKQGKDELWQLSQKIGKSLGNSGEEVKRAFNRARKRQRQYNSLLCQEMLPLEALRIIEKKIPVPRKEKSNNNYDLQVAVVGYPYLLYDAYINAGLLAILEKEKVKVYTQDMISDRKMNRQAKTLPKSTFWY
FSNRVIYGALHFMQRPEIEGVIHLTAFACGPDSMVDRLLEIESRRRGNRPYLSIAVDEHTGEAGVRTRIEAFVDMLRYRRERK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00392_hypothetical_protein
MKISFPHMGYSYIALKWLVNHLGHECIVPPEPSKKTLDLGVRYSPEFACIPFKILTGTYLEVAEKGAEIILTSGGMGPCRAGYYWVMHQYLLDEIGKKVKVIAFEPPLCDLRDFWRKLHRLRVSGGLSVKAFIQVIKVAWEKIKAIDDMEMQSHSIRPYEEKRGDTTRALWEALQFVDEANSEKEVDEARQEGLRVLQEVRRDESRDPVKIGIIGEIYVVLEPAANHYLQIMLGEMGVYTDRSIYLSSYTR
KNTIVNLEGDIFQVARPYLNEAPIGGHGVNSIGETILYARHGFDGVVQLAPFACIPEIVAKSIIPAVSRDFNIPVLTLFIDEQTGKAGVQTRLEAFVDLLEKRRELKRQRERWAI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00393_2-hydroxyglutaryl-CoA_dehydratase_component_A
MKKAYLGVDVGSVSTNLVVLDESNEVVAAEYLRTSGQPIATVQKGLYSIGQKLKGQLEIAGVGTTGSARYLSSMIIGADIVKNEITAHAIAASSVVPGVNTIIEIGGQDSKIIILREGVVTDFAMNTVCAAGTGSFLDQQASRLTIAIEDFGNLALQAKNPVRIAGRCAVFAESDMIHKQQLGYNNEDIIAGLCEALVRNYMNNVGKGKEILPPVLFQGGVAANQGLVEAFKKYLEMDVIVPPWYDVMG
AIGAALLARRAVDKKQKSSFKGFNIREITFKTRSFECQGCSNACEVVQFFENDDLIARWGDRCGKWELQAV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00394_Leucine-,_isoleucine-,_valine-,_threonine-,_and_alanine-binding_protein_precursor
MRVSKRLVLLVLMLFALGVLAGCGSKQEGGDKAGGDKTAVETIPVGINVELSGDLASYGSNSRNGMVLAIEEINQAGGVLGKELKYIERDCQSKPDEAMNNSAALAGEKIIAQLGPLTSGAVAGSTPVMMQNKIALIAPAATAENVTVEEKTGKTLDYIFRVCYLDADQAKRMAEFALNDLKVKNAAIFGSTSDDYAKGLAKYFEEAFIAGGGKIVAKEGYVNGDKDFKATLTKLRSKNPEFIYVPG
YYTEVALLIKQARDLDIKVPIGGGDGWDSPDMVKVAGVEALNNTYFANHYSVEDPSPAISSFVKAYEAKYKKLPDSFAALGYDSAKILAQAIKDAGEADSAKVAQALAQIKDFPGITGTMSINEKHNPVKKIVVIEYKDGKLVSR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00395_LIV-I_protein_H
LLEFLQQLINGLSLGAIYALIALGYTMVYGIIMLINFAHGDIMMVGAYVGFFSIAVLGSNIFAALIFAMLSCAVLGVLIEKIAYKPLRNSSRIAALITAIGVSLFLEYFTLFLLTPQQRVFPEAAFPLHKYQIGGLLISNKDIFIFALAVILMIALQYIIKRTRTGKAMRAVSLDREAAILMGISVDRTISITFAIGSSLAAAAGVMIGIYYNTINPLMGIIPGLKAFVAAVLGGIGIIPGAMVGGFLMGILETMVSGYGSTL
YRDAVAFGVLILILLVKPTGLFGKDTGEKV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00396_leucine/isoleucine/valine_transporter_permease_subunit
MEKKRFVPRSFLIEVLVLAGIFTLVQYLIVSGLLNEYYQINLSSMCINIILAVSLNLINGFTGQLSLGHAGFMAVGAYAAVVVTTIYSQPFILGLLAACLAAGLAGLIIGVPTLRLKGDYLAIATLGFGEIIRVILQNIDFIGGPAGILGIPRYSTWPWLFGLTIFTIVIIVNLINSSYGRAIISVREDEVASELMGINTTNYKVLAFVIGALFAGLAGALYAHYFYIIKPSTFNFLKSFDILVMVVLGGLGSTTGAVIAAIF
VTMLTAALQTFPAIRMVLYAVTLVVVMVYRPQGLMGNKEWGRRTWGRIWGEKNEPLANK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00397_Lipopolysaccharide_export_system_ATP-binding_protein_LptB
VLDFNFHLEDGELLGLIGPNGAGKTTVFNLITGVYKPDEGNIIFSGRDITGLAPYTICQQGIARTFQNIRLFKDISVLDNVRIALHKDAPYGLLKTLLRTPGFFQGEIEINKKAREYLQIFNLEDKAGEIASSLPYGEQRRLEIARALATKPTLLILDEPAAGMNPNETRELMDLIRWIRKDFGLSILLIEHDMSLVMGVCERIYVLDYGQVIAEGLPEEIRRNKRVIEAYLGEEVG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00398_LIV-I_protein_F
VLEVKGIDVYYGAIHALKGLSLEVEEGSIVTLIGANGAGKTTTLKSISGLLRLRNGAIMFKGSDISKVAPEKIVGLGISQVPEGRRVFSTMTVLENLEMGAYLRKDKKGIESDLENVFTRFPRLKERRKQTAGTLSGGEQQMLAIGRALMARPELMLMDEPSMGLAPLLVKEIFEIIKDINARGTTILLVEQNANMALSIANRAYVIETGEIVLEGTAEQLINSEEVKKAYLGG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00399_Hypoxic_response_protein_1
MKVKDRMSEDVITVEMNTSLTEAFRLMKENNIRRLPVVDKGRLTGIITLTDLNQAAPSSATSLSIHELNYLLARTKIKDIVPKKQKVLTIGPENYIETAAKIMRENKVSGLPVLEQDKLVGIVTETDIFDALIDILGVNRAHSRIDCFVKDRPGSLAEVTGLIAEKSINILNAVVYFDNKSQRYKMILRIEDLKYEPLLEELQKRGYEIESVIRESGEE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00401_hypothetical_protein
MCYFIGIRSNFLLENYRFIEDTLVLVTYAKHQLQKEHDKYYLLTLGGCSCDMVKSKDNALNQRIRSFLSKFPGNQESEVMLHWEGGEVIYEIGNNYEKLRPLMKQHIISKEDFLNLYPSLERDSLYVLT*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00402_hypothetical_protein
LAKTSDLISNFYSISSPDKKWSMIKDFTRAKYSAGLFWEVKSLVKKAKSVARNRMLDPSVLEDIPAKDPHAEYAKKDALFKQRRGAQR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00403_Hydrogenase_transcriptional_regulatory_protein_hupR1
MNKKILLVDDDEKILASYRRQLGLRLEILFTANNAEKGWETLQKHGPMAVVISDYKMPGVDGIAFLERVKEIAPDTVRIMLTGYADIDMAINAVNQGNIFRFLTKPCPIKDFIYAIAAALEQYRLICSERELLEQTLKGSIKLLIDILSISKPQEFNQLSRLRNLAKRTALHLNVEKPWEVDLALMLSPIGLITIPEYIILQKQESGEYLSPDEYKMYRSHPATAQDLLANIPRLENVAEAIACQMKNYPKQDAH
SGLAEKEIPLLGRILKIVLDFNALIKKSWSATYALEYLQKYAENYDPEVLSALIIEVQNLKEWSQEDADGRLVKIKDIEVGMVLLNDLQDDKGLVLLPQGQEITPVLQKRLLNFAEKSRIRETVRVLEPLGDKAAGNPFGEN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00404_Sporulation_kinase_E
LIFSKSSEYIKKPFFISSELSGKFLASIIDSLPDAVLVIDIDQKIIAWNRALEKMTGITAAQMLPSPTPFLKYNPEELMGKPIYNLLHSYDIMLLTTAFKKIIKNKESESLEIRIKDSAGDYHWVELVGNPRFNDNSEVDGAIFVGRVVTERKLVEEALKASEERYRELFENANDIVYIQDPGGQYLDFNKAAQAITGYSREELLNISMEHLVAPEYLDLSKKMMKQKINQGGTTCYELEIIGKNRNKIPVEVSSRLI
RYSDQSIAIQGTARDNTKRRQAEKALAAEKERLALILSSIGHGVITTDNYGIITFINTEAERFFEWKNEYARGKRLLEVVPLVEGYTHLNHSLFFASKDEPHPVDIRIINNLGQISLLSTTVTHIPGNDGNDHGMVFVFRDVTELRKAESQLALSQKLESIGQLAAGIAHEINNPMQYIGDNLSFLNEAFASTFSILDQVKALASFEDISSCILGLEKLLEKSQRELDFFRNEIPQAIQQSLEGVTGVSDIVTALR
NFAHPGSGEKQIANVNHAIMGTVSIAKNEWKHLADLELNLGNDLPAVKMVVNQINQVLLNMIVNSSHSIQNAIEKGLYPKGRIVISSQKNGSYVEIRISDNGMGIPDTIINKVFDPFFTTKEVGKGTGQGLAISHDIIVNKHNGLIELESEVGRGTTFYIRLPIKGPI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00405_TVP38/TMEM64_family_inner_membrane_protein_YdjZ
MDLHSLDSITAISSFLKSYGLLAPAVASALFIIQAVFPVFPYVILAAAGGLLFGFKLGFFLAWSGALAGACLAYWICRLAGSEWVIKTIQSRFSYDIREIDTRLAFWSILIARVLPVVPTPIINAAAALAGVPFWTFFFSSAIGKLPTALLYTGLGLCLFQVKDIRLTLLLLGLILLLLVAGRYLGKKHLLSP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00406_Colicin_V_production_protein
MHFNLLDYLFIGIILLSAWAGYRQGLVDAIGGLLGTLGGLILAVLYREELAFYLDRHYGFTQALGDLLAERMPAPVCSPEWGAVGKGLGLPEILLDPTAFLAQLLLSLLCFLLILFTSSFIIKLVFAAFNRLLSCGGLDWLNRVLGLLLVTAKNIIIMIFLTGLLYPAINLAARMGSAWAVSINNSLSMSLLAPWFLELFTYGKTLLGIAALC*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00407_hypothetical_protein
MSRERLTLRVRLVFHPTGVTIKVASHGREIGAVPLEPQDKPQVLPMRSALSGTTDAPFGRY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00408_putative_M18_family_aminopeptidase_1
LSEQKENLKKNAWLRIKPADLPAVHDFNQGYRDFLNQVKTEREAVAYIKQAAQGHGFVDLDRVASLEPGQKLFFQQKGKICALVVIGQEAMENGVNMVVSHIDSPRLDLKANPLYEADGLALFKTHYYGGIKKYQWLAIPLALHGVVIKKDGQVVSVVIGEENDDFVLSIADLLPHLAKEQMEKKMSEAIPAENLNLLVGSQPLGDTADNPIKKKVLQILQEKYAIEEEDFSSAELQAVPAFQAR
DIGFDRSMIGAYGQDDRVCAYTSLRAALELEAPKRTAICLFADKEEIGSNGNTGLQSLIIENLMAELMSKAGYNNYLTLRKSLANSCSLSADVNAAVDPNYPEVFEKMNCSFLSRGVVLTKYTGSRGKSNSNDANPEFLARIRRLFDDNEVFWQVGELGKVDIGGGGTVAHYMARYGMEVVDLGVALLGMHSPFEVSSKVDVFLAYKAYRVFMQSFCNQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00409_Selenide,_water_dikinase
LIQTIDFFTPMVDDPFIFGQIAATNALNDVYAMGGTPILALNVVCFPECADLQVLRSILDGGLSKVLEAGALLVGGHTVDDNEPKYGLAVSGLVHPQKIIANNGAQPGDLLFLTKPLGNGVIATSIKAEMASGEAYKEAIKWMSMLNREGSQAMIEVGVNAATDITGFGLMGHLYEMAWGSDVQVEVFAEQIPFMEGTLEYAGLGLIPGGAYNNRDYLKDKVEYAGDIDPLIRDLLFSPETAGGL
LIAVAEKKAGELLRVMEKRGSFCNLIGRVRSEHFSPIRVHP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00410_hypothetical_protein
MERKSFGLGDIVRMKKQHPCGSFNWEVTRMGADIKIKCQGCGRIVMLPRLQFEKRMIRVEKEAH*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00411_hypothetical_protein
VDAKNPGNQGFTAGDLVTVKSMPQDERFCIIGFKESAAGEKMAILKALFNDTYIIEKPLSLLQTLLIKGIL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00412_30S_ribosomal_protein_S6
MRTYEMMFVLRPDLEEEQVSETKERLQKIIADFGGEFINAADGWGKKRLAYAIDDYVEGIYSLWYFKGKPETVDELDRIIKISENFLRHIIIRQDEK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00413_Helix-destabilizing_protein
MLNRVILIGRLTKDPELRYTQNGTAVATFTLAVDRKFKREETDFIPIVVWAKQAENCANYLNKGSLVAIDGRIQVRTYDNQEGQRRWVTEVVAEDVRFMGKPAGSRSSTPDYADKNSSKNFDDNWSDLGREVNMDNIDLVDQHEDEDIPF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00414_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00415_hypothetical_protein
MLYGDDCCVLAGLQEKIGLMKKSTAGGVIT*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00416_MazG-like_family_protein
LKGKVKELDIAQNLKTIEWLKAELVDSVAALFKALLQKGNDAIQDAASSLVIITYLLARRVGVTFSVLDQAIKEKLRTSIKESEEIGSWSGDLSELYKYLESKKRW*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00417_putative_membrane_protein
LSAFIKLSLISSLLLCLTVLLPPLAFIAIGWGALLIRGSLTLSQRHIGLIYLLNFSLLYGLAGAGTLLFYAAFFGLPALLMSLLLNRHQGYYSIQRWGVVAAVLGVSLFLGLLYWNNGQIGMEQMESQINNYVQESLKAYEDSGFIGFYESQGLSRAELEKSFKAMTRSIVRHLPALYYVQAIMEVFFMLLLASFLSRKSPDERLKRKAYTEEMMPWPLVWVLIVGLALWLWGRDEMGSLYYLGSNIMVVM
TPIAVYYGLAVLLFEFKRILPSKRKLFATLLIILSLFFPLSAIIFLSLMGLFDSLLNFRKIALEREV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00418_hypothetical_protein
MKVILIQEVKNLGKAGEIKEVSDGYARNFLMPRGLAEEATKGKVKESEEKKLKMQRKKEKELSEAEKLKERLQGKTISIKARAGGADRLFGAVTSREISEVLQQEWGIVIDKKKIELPQPIKQLGEYKVKVKVYPSIQAEIKVIVAAE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00419_Lon_protease_2
VKQYSVTTEQSQETQLHWRIECLYKNLGLIYGTQGLILRASKLDAIDLMGSQKLEERVVALQRILQEDPTINEVDPLGNLGLALDRLGEKVAEVFARKSIEEQIQQRIQEKMDEKYSEYIRDLKLEVLKEQNSSPENAQTLKKLGRLEKMERSNLSRSALEILRPSCREDIIGQGKALSSIISKLNNPYPQHILLYGPPGVGKTSCARLALEMVKGRKGNPFKEDAPFIEVDGTTLRWDPRESTNPLLGSVH
DPIYQGAKRELAEEGIPEPKLGLVSDAHGGILFIDELGEMDPLLQNKLLKVLEDKRVFFESSYYDPHNERIPQYIKQLFEKGVPADFILIGATTKSEEINPAFRSRCMEVFFEPLRAEHIRQMVVNSAKKLNINMEDGVAGIIAEYTTEGRGANKILVDAYALAVNENGGEETPLEVRCQHIYQAIRNSRITPRILSRASDSNEVGKIFGVGVSGYQASLIELEAIAFPAEEQGKGNIRFNDTAGSMARDSLFN
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00420_Adenylosuccinate_synthetase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00422_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00423_Internalin-A_precursor
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VDEVLQLQPLIKEWSQKDNFQMVLVSSDAAEDMQAFLEENPLETVSVLMDPGGEAGRIYRVQFLPTSFLLNEEGQIEQSLVGWDSKKGPAKLEEWLNK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00453_putative_nucleotidyltransferases
MSTGLSEDILIQAVRLLPEEVYPDIYNYLNTLAEQLELQMPTIEDIKTQFRPVLEKYNISKAYLFGSYARGDHTIKSDIDIQILPLESQAYLSFDEEFKLTKELNNISKIKVSVVQDDLKERVQKRVMEERVLIYER*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00454_Glutamine--tRNA_ligase
MEDKSNIKENKEKTPAAENIAARPVNFIQNIISEDLKAGKNGGRVHTRFPPEPNGYLHIGHAKSICLNFGLAAANGGITNLRFDDTNPSKEELEYVESIQEDVRWLGFDWEDRLFYASDYFEDLYQYAIGLIKAGKAYVCDLSAQEIRDYRGTLTEAGKESPYRNRSVEENLELFARMRSGEFADGSRVLRARIDMASPNLNMRDPVLYRILRATHHRSGDNWCIYPMYDYAHPLSDAFENITHSVCTL
EFADHRPLYDWVLDALPLEAYPRKVEGRPQQIEFARLNLSYTVMSKRKLRELVEEGYIEGWDDPRMPTISGLRRRGYTAESIRDFCERIGVAKRNSMVDIALLEHCIREDLNIRAPRIMAVLRPLRVIIDNYPAEQVEWLETENNQENPAMGSRQIPFSREIYIEQEDFMEDPPKKFFRLRPGGEIRLKSAYIIKCEEVIKDERTGEIIELHCSYDPDSRSGGPNSGRKVKGTSHWVSAAHAVAAEVRLYEQL
FLHENPDEMEGDYKEQLNPDSLLRLSSCMLEPSIREAAPGSRFQFLRQGYFYIDPVDSKEGRLFINRIVSLRDSWAKAQKKM*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00455_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00456_hypothetical_protein
MDATPGEGEQAKGGERQEVARALHPSGTPGVPPWRVSLLRLPPMDGRLARYPLSREISRRCCPCVAPCRAQLMLPSVAIKDAGAEYLRKRMHNYYFLQRNQYLQEVKILYIYGLLSTSSVLY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00457_NADH_dehydrogenase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00458_HTH-type_transcriptional_repressor_KstR2
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00459_Macrolide_export_ATP-binding/permease_protein_MacB
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HYYAYSLEQEMESANKVTGIMTLIIGCIAGISLLVGGIGVMNIMLVSVTERTREIGIRMALGARRKDILVQFIIESIVLCLLGGFIGIILGYGGALLVARLAKWPPLVSGWTVLLAVGFSVAVGLFFGIYPANKASKMDPIEALRRD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00460_Macrolide_export_ATP-binding/permease_protein_MacB
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00461_Macrolide-specific_efflux_protein_MacA_precursor
VKLELERGTDSKWKTKIKNISTRKKWIIGITLVLLIALGIFLATRGEQPLLVEMSTVQLEDIERTVVSNGRLEAVRRQDFFTPVDSTLMELKVKAGDRVKKSDVLGRLDSLELARKYKNSLALLAAREAELAKAEAINDNLNLKEAEAQYQKAKNHLERIEQLYKAGAVNIEEQESARAEEAKAQALYNEARIKLEQKAASREKASLKAQVELAQQEVEQAKERLDLATFVAAFDGVVIAVNAKEGNRVLE
GTPVMELGSEDLLEVTATVNEIDAGSLEIGQEVRISCLALPGREFHGKVSRVGAAAIIQKNNSGEAVNVPVTIQLHGKTEGLKIGYTVDLTISLRQEKQVISIPVEAIMERDGKKSVYLVENEVARERKIKSKMGNELKDIVISGLKAGDKVIINPPSSIKAGQKVTAKPAGAIND*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00462_hypothetical_protein
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NQQLKGNISWTSPEGKPLKVDLQKEKDWQEESRPGEEAIQAQAQLGEGRYKMTIIHQRHEENEISVNQLP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00463_hypothetical_protein
VKKKSKFLVFILSPLPGLSHLYLGWSRRALVFFSVFLGLGVGALTMENISYRSSSMIGPLIFFVIALLWFVALAEALHLAGRNVEPGPDSDEARIFNSEEKGLLFISDRKLIALAFSAIPGAGHMYLGLIKQGAQLMAGFFFILLLSSWLNLNILGFVIPVIWFYSVFDIYHLLEDEEKVQLESSTLFDWFSNHPGWLGWGLIALGLLVIVQRIASPALAQLLSESLRSYIETSFIALILIAGGIKLLLGSKAEEPGEGAN
AMPAIRIEAKKADESAFPDKTNEEIVIENTSNVELNEETKEELS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00464_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00465_Sigma-W_factor
VVKVCPDDLRIESLLARNPQAFEELINQYKAYVFAIILRIVSDPEEAQDIAQEVFLQLYRSLPEHQPDHLKAWIGRVTTNKAIDWKRQRTRQLAVVESDVEKRAAPAEMEMSPVQILLQEERESAVKELCRGLPPPYSRVVSKYYFENKSYQEIAREEGISLKTVESRLYRARRLLRERWEEGAE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00466_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00467_Molybdenum_storage_protein_subunit_beta
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NGLKEGNLSRALNGEHIGTIIYKDI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00468_Major_cardiolipin_synthase_ClsA
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FGYWRDTHLRIRGTALDGLHLRFLLDWRYACNHDFQMREDFPQRAPQGNTGVQIVSSGPDSKWSSIKDGFLKMIGSARQNIYIQTPYFIPDESILAALKIAALSGLDVRLMIPGKADHLIVHWANLSYVGELLEAGVRCYAYSEERFLHSKVMMIDGYASTVGTSNMDIRSFHLNFEVNAFIYDERVSRNLQAAFFRDIQNSQEITMQIYRARPVYARMKEAVSRLLSPLL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00469_Succinyl-CoA:coenzyme_A_transferase
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LVDAFVDMYEAGRLSGSKKQIDPEKLVYTFAVGSQRLYDFINDNPLCASYPVNYTNNIAIASRNDNLISINNAIEVDLYGQVCSESTGTRIISGTGGQLDFVLAAYESRGGKSFICLPSTKSEGNGEIKSTIVPTLTPGAIVTDPRTVAHFIVSEYGKCELKGKTVWQRAEGLINIAHPDFRDQLIKDAEVQGIWRRTNRL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00470_Carbonic_anhydrase_2
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00471_transcriptional_regulator_BetI
MDMEERICNACLGLARMRGLHGFTVDELASQAGISKRTIYRYFRSKDEIIEAAVNRFLVEVAAAADHILAVESDPINIINYILNYLFKHGHFIISPRGLNDLRQYYPHLWQKIDRFRLERVQMVISAISQKEGTEFLPDCDLRILVTAISASISQAVLNPDFLLENGLSFEKAAKDLSRLFLSSISRGRSF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00472_Inner_membrane_transport_permease_YbhS
MSRIFAVIKKEFIQMKRDRMTLALIFMIPLIQLLLFGYAIQTDVKHISTVVFDQSLSPESRELLNAFSASGYFDINEVALSYDAVTQSIDSGQARAGIIFPPDFARQLQRGESAPVQVIVDASDNMVANQAIAIANSIGLIKSQQLLFQKMNLDAPPYDIRVRPWYNPDGITAYYMVPAILGIIVTMTMVIITAVAIVRERERGTLEQLIVTPLRPYELMLGKIIPYIALGYIQITVALLVGALFFQVPIRGSLLELYL
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00473_putative_ABC_transporter_ATP-binding_protein_YbhF
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SVYGLRLHVLVESLEAAALLEEATGTRPLPISPSLDDVFVALARKKEREENDEPDFCRN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00474_putative_ABC_transporter_ATP-binding_protein_YbhF
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LPRVKLGQKVSISVSGCEQVFSGVVKEISSRGEFTPKSIQTKKERANVVFPVKINITSNPNGILKAGMPADVIWQEMKP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00476_glucosamine-6-phosphate_deaminase-like_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00478_Putative_metallo-hydrolase_YycJ
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LSTKGLNVESSKETEALLLELGRQETEKLENLNQRVAEQQKKNRNLQSEIFAMIRELILVQSLDGKISQQVLEQVMIWEEARKKGREIARAKSERAGESQEQLRDSLRLLDQIYQQVGVVCPETPAPGEKK*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00483_hypothetical_protein
MGRDGTQGGLAEVICMIAQQTLIATLHSKAGMG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00484_Protein-L-isoaspartate_O-methyltransferase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00487_putative_domain_1
MQKQPNSRNCFLCGRQNEVGLKVDFYNDSEKQQVRANVTIPEHFNSYPGFVHGGIIAALLDETSGRATLLNGDFDNLMVTARLEVKYIQPTPTGQPLEVIGWLIRGSRRYARVAGEIRLADGTVTARCEATVIRPSGEFQQMWQDAEGEYWKVYDD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00488_Peptidyl-prolyl_cis-trans_isomerase_B
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00489_D-methionine-binding_lipoprotein_MetQ_precursor
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PEDKDKDSIVKLGKALQSPEIADFLKTNYPAVVLAF*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00491_Methionine_import_ATP-binding_protein_MetN
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00492_putative_cysteine_desulfurase
VFTINKKVFNPKSFRRDILGVEKKVPTLGGKYLPYINFDNAASTPALQPVVEEMQDFLQWYSGVHRGTGYKSLLSSQFYGDSHETIANFVGADLDSQCVIMVKNTTEAINKLSYRLSFAPGDVVISSMMEHHSNDLPWRNKARLKYARVDQQGLLDLDDLEKLLQLYYPRVRLVTVCGASNVTGHINPIHRIAEIAHAYRAEILVDGAQLLAHHPVNMIKEGDPRHIDYLAFSGHKIYAPFGSGVLIG
PRKTFLQGEPEYSGGGTVDLVSRNQVWWTGLPEREEAGSPNVIGAFTLARSLQYLQKIGIEKLALYEEELLLYARERLQKLPGIKIYGSFPRLAVISFNIKGLEHALLGSILCFEAGVGVRTGCFCAQGYVRNLLGIDAESISGIYEGKEPALLPGMLRISLAAYNNREEIDRLLQWLERIIAHKTNFKKNYLFSPSAGAYVPRQWPRQAKTRWPFILPGWS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00493_addiction_module_toxin,_Txe/YoeB_family
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00494_Antitoxin_YefM
MDSINVTSARQNLYKLINEISQSHRPVLITGKNANAVLLSAEDWSAIQETLYLTSIPGMIESIREGINTPNDECIPADKVDW*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00495_GIY-YIG_nuclease_superfamily_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00497_Taurine_import_ATP-binding_protein_TauB
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00498_Putative_aliphatic_sulfonates_transport_permease_protein_SsuC
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GALLDSIFRIIANKYFSWESKTR*
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DFPPQGQWTNFPCCVLAARTDVVNTHPEVIEGLVSVVADCIEYANANREKFAEINSAIIGVEKDVILANNIIYTSEPSQEWLDGIEIYFNAIKSMGKFTDRLKNADYETVKNELFEFSFVEKANAR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00500_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00501_Cyclic_di-GMP_phosphodiesterase_response_regulator_RpfG
MNSKKMVLIGLVLTAFFSSLAVFELIPGLIMAFLLLSVGIAVTYYFALSQMRLESLAGKTILLKAAKEIGKESKAPEISRLLGLWAQRLVKSEAALVWWQGEWVLGDEEFTVWPGLETAREWVRNNREVLVLNRNGGEIFSHPWPSNINSLLGWPLTVADEAAGMLFLLNESKRGYFVPQDSEALEVICQQAVLSLDKANNYQKTEVIYKEMLFSLVNTLDSRFPGFAGHSRRVARVAVLLGSKLGLDE
EELRILEYAALLHDAGKVFFLREGIPGKAGELEEMEEESYLPPVEEHPLLGAQILPGEGIFAKMRQGILYHHERYDGSGYPEGLSRTDIPLAARIIAVADLYDALTRLASEEERLEPEAAVNEMKKTMGMLLDPLVVIVLEEVERELDEIT*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00502_Aminopeptidase_N
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IEAQNVRDFCLAVLYDYKESIYGQNRPQIICYSPAKESELAGQILKQSAQILNYYACSWGSYPYLDFKIVFVPMRGFHGMEYSGLIFLSEEFLQPRTYKDHGEFILAHEIAHQWWYGMVGNDQLKEPWLDEGLANWSAYKYLKEYQGIEPPCGNEFQNGINLAQEMREIVSRQEYYRMAYSGGEAFWFALEKEMGEDTVNKVLRRYLADFRFKVASTEDLLLVIKKEARRDMSDYFHKWSLDKPVSD
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00503_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00504_Arginine--tRNA_ligase
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ASFGISYDVWFSEKSLHENGKIMAVFNELREKGYIYESEGAWWFKSTAFGDEKDEVVLRANGMPTYFMADIAYHQNKFERGFDWVINVWGADHHGHIARMKGAIEALGYDPARLDILLMQLVRLYRAGNIVRMSKRTGTTVSLDELIEDVGKDAARFFFVMRSPDSHLDFDLELARQKSQENPVYYVQYAHARICSIFRQARAEGITMAGIDEIDISCLKEEEELAILRKIADFPEEISIAARTLAPQRI
ARYVLDLAALFHSFYNHHRVLNDNRALQDARLLLMEIIRITIHNALNVLGVTAPEQM*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00505_DNA-directed_RNA_polymerase_subunit_delta
MIPRKKSEADWAVEILVKKQEAMFYAELIKEVARMMGKKNDPTSLTSIYTRINMDNRLVYQGQGFWYFDTNRVRQDA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00506_metal-dependent_hydrolase
MKIRWLGHASFLIETGKERIITDPFDERAGYAVFTETVDIATVSHEHWDHNAVEILAGKPQVIRGEGVFRLGGITITGFSSFHDQTQGRDRGKNTIYKISAEGMELLHLGDLGHILSPREIEAIGRVDILLLPVGGTYTIDARQALETMQQLNPRITIPMHYQTPHVKISLAPLEAFTGRLERVVKRPFLEITREELPEEPLVLVLDYL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00507_CTP_synthase
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REKLDELIIRRLGLECKQADLKEWQELASRVHHLDKEICIGLVGKYVELPDAYLSIVESLKHAGFQYNCEIKIKWIYAEKVEKEGAEELLQNVDGILIPGGFGERGIEGKIATAAYARENQVPFLGICLGMQCAVIEFARNVCQMKGANSSEFDPDSPYPVVHLMPGQENVDHKGASMRLGGYPCHLVEGTLAYEVYGVSETSERHRHRYEINNGFRQEMESKGLVISGISPDGRLVEIIELKEHPWFVA
CQFHPEFKSRPNRPHPLFMGLIRGALDYKEKRILLAGKDKTS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00508_Lipid_II:glycine_glycyltransferase
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ISAGKVWYLYGASSNLHRNVMPNYLIQWEMIQWARQQGCSIYDFRGVSGDLDEDNPLYGLYRFKKGFNGDLLEFVGEWDKVYSPLFYWLWTKVLPVYLKLSRALLRPGKGQEMSGEAI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00509_Alanine_racemase
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KIISLKTLKAGDYLGYSRSYRLKEDAQIAVIPVGYMDGLGLNVGNKAEGFIDLLKILLKNIFFYYDLGRFKLQVKIRDSLYPVRGKVFMQMAMIEIPTDLELHIGDEVEVPVRKTLVARDLVRIYTKAGEAVKIGDQDGTSYIVEGD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00510_Putative_signal_peptide_peptidase_SppA
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VQQAEKMAGIKGESKLEVINAFSWWDRFKLGMLNPNIFQQGGFAELKY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00511_Yip1_domain_protein
MTLTEMVYGILFQPVSTLQYLSREKPLSRAMLVFVSVLLFNTLVNQAISMANIEELPFSLPVNLLWLFGLMGIIFSILLLFLTAGFFSLLSEVFFGRANASGLLVCLGFASVPGILPGPLQYAAILIKLPAGVVLFPLISIVWVMILQVMALRESLELDTGKAILLYIFPLLLVILFLAIITASFISSFPFAEL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00512_Sporulation_initiation_phosphotransferase_F
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00513_Fructose-bisphosphate_aldolase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00515_Fructose-1,6-bisphosphatase_class_2
LERELALEFARVTEAAALAAARWVGKGDKEAADDAAVTAMRVMFDTVSVDGVVVIGEGEMDEAPMLYIGERVGIGVPPLVDIAVDPLEGTNIVAKGLTGAIAVLAIGPRGTLLHAPDMYMDKIAVGPECKGRVHLDASIKENLWEVARSLNKLISEVTVVVLERERHQHIIEEVRRVGARIKLITDGDVSPAVAAAYPESGVDIVLGIGGAPEGVITAAALKCLGGDFQARLYPEDEDEIARCHKMGI
NDINKIFTIDEMVQSEDVIFAATGITDSFLLKGVRYFKRRAVTQTLVMRSLSGTIRHIEANHHLDKKPLFKDQRIQLKMD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00516_hypothetical_protein
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KDVVILMDSVTRMARAHNLVVPPSGRTLSGGIDPASLDKPKRFFGAARNIEEGGSLTIIATALIETGSRMDEVIFEEFKGRGNMELVLDRKLSERRIFPAIDLKRSGTRKEELLLNNEEMELTWNLRNAFSDYNQIESMQLMIDTMKKTKSNKDLLRAAPLVFGRKEHARSAY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00517_Murein_hydrolase_activator_NlpD_precursor
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00518_molybdenum_cofactor_biosynthesis_protein_A
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EHLLKARDAIISFGQGCEGEPALNGKRLSQAIHRIRNLCSQGTINMNTNAGYCEGVKLMTDAGMDSMRVTIFSAIEENYIAYHCPQDYSLADVEYSIAYAREHGVKISLNLLTFPGFTDRMEEVEALVEFVRKNQVDMIQLRNLNIDPEFLMRIFPGKSPVLGISNFIKLLERELPGVRIGSYTHTVHRK*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00520_molybdenum_cofactor_biosynthesis_protein_MoaC/MOSC-domain-containing_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00523_Sensor_histidine_kinase_CitA
MYSVPWYAIVLIAVPQTILIIKIGFGLFNLQVNTRQCLLATLIVSVVTYFLRKLPLMFGIHTIILVILLTILVVVLQRIDFWRSLVAVLLGVMILGVIENAYLPLLLQFTSRTVMDLAEQPWFNIAAFLPEFLIGLLLYAFIRYRSFVLFDLKRAGEVQKPVNHGVFIIAVILLQSFLLVLIGAALLVNQQRFNIAVIVPWANMAILLVALLSAAIKIQLEENSRNSQRVQLLKSHLQQVELLLKVLQTQKHEYSRHIQ
AIQSLVYLKRYQEIKEYIEGIAEEYWHMEEVLYTTHPVLTGLLNSKRSFAESQGIELAVAVKCDPAGIPIPPWDLCSILGNLLDNAMEAALEDKGKPRVAIEFKYEFPHYVIYIQNNGTRISAAEKQRIFEPGYTNKDSPARGYGLYLVSRLLERYQGTIEVTSKGQTSIIVRLADKGSNKAAGKSYSSLERWMTGG*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00526_putative_metal-dependent_enzyme
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00527_Peptide_chain_release_factor_1
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VTCQDEKSQHKNKAKALRVLRARLKELLEEEKNAEMAGNRKSQVGSGDRSERIRTYNFPQGRVSDHRINLTLHRLESVLEGRLEEIINALIAHYQAERLKQVD*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00529_t(6)A37_threonylcarbamoyladenosine_biosynthesis_protein_RimN
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EKLKDRYPQYQSYDLDLNTATNRLYSLLREAEEREIELLLFTPLPKKPGGIAGVMLDRIYQAAGNSL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00530_putative_manganese_efflux_pump_MntP
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00531_Low_molecular_weight_protein-tyrosine-phosphatase_YwlE
MKRILFACTGNTCRSPMAQALFSKILKEKQLQYDFEVLSAGIFAYPDCPASPEALEVLRQEEIDISQHLSLPLTDELLEDAHLILSMTISQRNYLQETFPHKRESIFSLAEFAGMGEIDIMDPIGRGREAYLDTLQQLKTILPQVLKVILQRKNAGGI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00532_Serine_hydroxymethyltransferase
MKLIIGCDHAGLELKNEIIEALREEEYKIMDCGTFSKESMDYPDIAEEVARLVLQEKTRGFLICGTGIGVAIAANKIPGIRAAVCHNIYSARLAREHNDANILTLGARVTGGGLAIEIVKSFIKAEFQAGRHLRRVEKISRLEKKCLREESSRMDYIQNYVKPVDPEVAEAIEKEEARQNNKLELIASENFVSRAVMAAQGSVMTNKYAEGLPGARYYGGCEYVDIAEELARDRVKKIFGAEHANVQPHSGAQ
ANTAVYFAALQPGQTIMGMNLNHGGHLTHGSKVNISGKYFNIVDYGVSRDTERIDYEEIREIALKARPQMIVAGASAYPRILDFKKFRDIADEAGALLFVDMAHIAGLVAAGLHPSPVPYADFVSSTTHKTLRGPRGGFILCRQEWANKIDKAVFPGIQGGPLMHVIAAKAVCFKEALTPEFKAYQQGIVNNAAILAKALMEQGLRVVSGGTDNHLMLVDVRPKGLTGRDAEAILESINITVNKNAI
PFDPEKPTVTSGIRVGTPAVTSRGLNGDDMRELARAITLVLDKHDSEEVKEEARGIVKALCDKYPLYA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00533_deoxycytidylate_deaminase
MLGERPNWDEYFLQLADLVATRSTCLRRQVGAVLVKNERIISTGYNGAPRGLEHCLDTGCLREEQGIPSGHRYELCRGVHAEQNALINAAYYGVSTSEAVLYCTNQPCIICARMIINAGIIRIVHRGNFDDDLAIKFLREAGIELVFIPRQGEEANHSG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00534_hypothetical_protein
METKTLSLPRLNQLNPTLESTALKLMEEAGELAQVIGKYRGMSGEKVEVNGDLVVKQIARELLDVAQTAVTMMFVMEEQFDLNIEDLLKDHWGKLERKGYLSR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00535_Putative_F0F1-ATPase_subunit_(ATPase_gene1)
MAEKGSKNWVKGLSDAINLATTVAAAVALGYFAGKWLDGKFDTEPWLTVAGFMLGVATGIKAMWEKSFPIKKSIQDIKEKTSKRENE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00536_F-ATPase_subunit_6
MIFGMWDSTLFHILGPIPVDHLIVTEWVIIAFIGIIAMTATKNMQMVPRGLQNAFEAIVLWTYDFFTQLMDKESVAKKWAPLLTSFFLFILLSNYSGLIPGAARIEGFQPPTSNWNVTMTLALITFFSVHIAGFSEHGGHYLHHFVSPSWAMLPLNLVEEVAHPLSLTVRLFGNIFGEEMVIAYLLFMAPFIVPSAIMGLSLLLGAIQAIVFTILSASYIAAAAGEGH*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00537_Lipid-binding_protein
MGVALGAGLAVSIAGIGGGIGMGIAGGKAFEAIARQPEVGGDVRTLLFITLAVIETLTIYGLLIAFMLVGKA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00538_F-type_ATPase_subunit_b
VRRNRRFYLSVLLVTMVMILGFATFCMASGGGNVPVPQPDGKTPAFGNLYAIGWSAVNFLVLLALMYKFAYGPINNMLEQRTNAIEGSLKHAEEVKLEVEQMRKETASNLAESRKEAQEIVARATKAAEESKNEIIAKAKEESTLIKNKAAAEIQAATEQAKLELKDAAVSLAILAAEKVLSRAINDDDHKNLVKQFVNEAGDLLC*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00539_F-type_ATPase_subunit_delta
MLNKSVARRYAEAFFSIARETGKVDELQQELEKLVSIIESTENLPEYFAHLLIPAKAKKEVANKIFGGQVSQLTLNFLNMVIDKRRETYIGLISEEYRDMADELRNITKAELTAAVPVSEADMKNLEQNISAKTGKTVQLSLKVDPGLIGGLKIRIGDQIVDATVAKKLEMLKEQLKQAKIS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00540_ATP_synthase_subunit_alpha
MSIRPEEISAILKEQIERYQSEVEVSNVGSVIYVGDGIARVYGLQGAMAGELLEFTGGTFGMVLNLEEDNVGAVLLGEYNHIKEGDVVKATGRIMEVPAGPAMLGRVVNALGQPIDGKGPINTTAFRPLEKVAHGVVTRQPVTTPMQTGLKAIDSMVPIGRGQRELIIGDRQIGKTAIALDSIINQREKKDLICIYVAIGQKQASIAGIAAKFEEMGAMDYTIIVAATASEPAPLLYMAPYAGVAMAEEF
MEAEGKDVLIIYDDLSKHAVAYREMSLLLRRPPGREAYPGDVFYLHSRLLERACRLNPDHGGGSITALPIIETQAGDVSAYIPTNVISITDGQIYLEADMFNAGQRPAVNAGLSVSRVGGSAQTKAMKSVAGQLRLDLAQYRELAAFAQFGSDLDKATLARLTRGERVTEILKQGQYQPMPVQEQVVSIYSGVNGYLDDIPRDKVGEFEVDFLKFMRSANADVLNAIKDTGKIDDATEQKLIKAINEF
KSTFAV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00541_F-ATPase_gamma_subunit
MAGAGVREFKRRIRSVQNTQQITKAMKMVAAAKLRRAQEAESSRPYNETLKGTLARLAAVSFDVRHPLLVKREEVRKVGYIVVTADRGLCGGYNTNIIRAANHAIAEDERKVETGIVAVGRKSRDFYRKRGGVDAEFVNLGDNISYADAREIGQYVTNAYENEEVDEVYLVYAKFINVLRQVPTVTKLLPIEPPTQEEESSDIKETRQVDYIYEPSAEDILLALLPRYVGSQIYNAMLEGKASEQGAR
MTAMGNATENAKEIISNLTLEMNKVRQAAITDEILDIVGGAEALNKGGK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00542_ATP_synthase_subunit_beta
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DFSGLDVLIFIDNIFRFAQAGNEVSALLGRMPSAVGYQPTLATDMGYLQERITSTRKGSITSAQAVYVPADDLTDPAPATTFAHLDATTVLSRAISELGIYPAVDPLDSTSRILDPQVVGDKHYDTARGVQKILQRYKELQDIIAILGMDELSDEDKLIVARARKIQRFLSQPFHVAEQFTGSPGIYVPTSETVESFSQVLAGKHDNLSEDSFYMVGNIDTAVAKAKRLEA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00543_F-ATPase_epsilon_subunit
MAESTFMLEVVTPERILYRDEIQFMVAPGIEGELGIMKNHAPLVAALNIGVLRYQTSTGVDKRMAISGGFMEVIDNGTRVLAETAEHGSEIDVLRAKAAKERAEKRLEVRSEEINHARAKMALQRAIARIRASEKPL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00544_hypothetical_protein
MEKIIASSFLPVTSFAFNYEFNMNSMVRYLIIITLCYYFLKGLIYLLLWQTTHKIEERAREQKRKEKEKRESMRRIWEDEEIERDDDSNWW*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00545_hypothetical_protein
MRTMFLILIGVVFVITMVFAVLIWRQTIKLEKSALAAKQRKEAYLQQLEIERQAEIERQAEIERQAEIERQEALARAREDEKQKTEMNNDNDGSKPENQGEASPISSN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00546_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00547_UDP-N-acetylglucosamine_1-carboxyvinyltransferase_1
LAITVENSENISGEVEVSSSKNAILPILAASLLSDDKVTVKNVPEINDVSIIKTLINSLGVEVEESAKSICSFGMPQNNHPPYELVRQIRASFLVMGPLLARKGKVRISFPGGCAIGNRPIDLHLKGFQALGARINLSCGDVIATAKKLKGNHIYLDFPSVGATENILMAASMAEGRTYIENAALEPEVVDLANFINSMGGKISGAGSNVIKVDGVKKMTGANYTPIPDRIEAGTYMVAAAATAGNVLVKNVIPE
HLKAIIAKLIESGAEVEEDQAQVRVKRNKKIKPVYIKTLPYPGFPTDMQAQFMAYLSRAEGSSVVTESVFENRFMHVQELLRMGAKIKTEGRTAIIKGTQEISGASVKATDLRAGAALIIAGLTAEGSTIISESEHIDRGYEKIVEKLSGLGARIYRKP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00548_hypothetical_protein
MAGFLLLLFVTCMLIRGCKPNEQFTEPSINLYRTEEKRSYKLTLEEYIQGVVAAEMPASFELEALKAQAVAARTYTLRKLIDGRKYALNADLSDNIYECQAYISWVEFGDRHPRDKEQWQKKIMQACNETRGEIMLYQGEPIDALYHSTCGGITESALESWGKDIPYLRSTNCNYCRQSKYYESIQVFSSGELHRLTGVSNTEAIKILTKTPAGRSKKLKLDNRLISAEEFRRILQLPSTWWSLKKHKNNL
LIISKGYGHGLGMCQYGANGMAAQGKNYHDILGKYYKDIDFYRMNY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00549_14_kDa_transcription_factor
MQNYIRKRAVKIANHILQTSNTVRQTAEVFGISKSTVHKDVSERLPRINRDLAEMVRCILDKNKAERHIRGGEATRQKYASME*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00550_Rod_shape-determining_protein_MreB
MWFIEDIGIDLGTASVLVFKKGRGVVLNEPSVVAIDNSSNKVIAVGEEARQMLGRTPGHIVAIRPLKEGVIADFDTTEKMLSYFIRRVIGRKILFKPRVVACIPTGATDVEERAVRQATLSSGARQAFIIEEPVAAALGAGIDISEATGNMVVDIGGGTSDIAVLSLGGIVCNSSLRVGGDKFDEAIIRYIRKEYNLMIGDRTAEEVKIRVGTAFVNEGNRNRLMEVRGRDLVSGLPKTVKFSSEDCWLALQE
PISTVIDGVKKVLEVTPPELAADIVDNGIVMTGGGSLLDGLDNLLSKETKLPVHIADDAISCVAMGTGRVLNEISVLAQSKGRGGRRVL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00551_Distal_rod_protein
MLQMARQDVVANNLANVNTSGFKKNTAVAKAFPDMLISRLGECKEDLQKQLKVQPPVVIGRLGTGASISGIYTDFDNNNLKKTDSPCDLAITGAGYFVVQTPEGQRFTRCGEFKINSEGILTTNSGYPVLDSNDSPITIEGEFLIDEQGNISIDGENIARLKIVNFNDLQILERLGHNLLNSPEEPMVVERPEILQGYIEQSNVNAVKEMVTLISVVRAYESLQKMVQAEDETIGQAIEKVGSIN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00552_Putative_N-acetylmannosaminyltransferase
MKEKTKSRIDILGCQIDKVNMDQALAFIEKRINENIPSHIITLNAEIVYQAHKDQQLREVINSASLNTPDGIGIVWAARQLGVTLKERVTGIDLLDRICSIAPARGWSIFFLGAAPGVAEQAASRLLAKYPGLAIVGTENGYFKEEEKAVIAKIKALSPHILFLGLGAPKQEYFIRRNLKLLGAPVCIGVGGSFDVVAGIKKRAPILFIKLNLEWLYRLLAEPSRFKRQLALPRFAWLVLKQKWRGY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00553_Cell_division_protein_FtsA
VDGKKIFALDIGTRKIMGLVMREKSGSYEVLSSAIMEHKTRAMMDGQIHDVEEVARGIQSIKEQIEAELQIKLESAAVAAAGRALKTSLGQVVKRRPVMSEISPEEVQALEIEAVHRAQYLLGQEEGRQNVQGDYFCVGYSIISYCLEEQEIGNLVGQVGSEYGVSVIATFLPRVVVDSLFSALKKAGLEVYSLTLEPIAALSLAIPPSMRLLNLALVDIGAGTSDIAIVKDGSIYAYAMVPQGGDKLTESLAA
AYLLDFNHAEKVKRLLSQQSDIEITDVLGNCSKVPSSEVLKELQAVMNQLLENISRNILELNQKAPDAVICIGGGSLTPFLASGLAEHLHLPQNRVGIKSSNSLEVITLDKEHLQGPQGITPLGIAYYSFSRVPVPFIKVLVNGREVPVWNLGKLDVSAALLSSGISLGNIYGKPGLGKTIEVNGEVKVFKGEMGTPPLIKLNDSPAFLESTIEEGARIEFIPGKDGKEARVMIQDLLSLSEGEVFVNGEPLHL
KPLVLINGQEVRADEEIPDRARVLFKPLNRLANILTLAGVGEHWLQERTYHYYLNDEERSLQWVPIKVLVNGEPGQVNQKVPFGSQVSFSLSHLRPQIKDACSGLENLSLQVKVNGQMLSLEGKGALIKLQDRVVNMEEELEDGVHLIIDKEKSSAILSDVFRFFEIETSMTGALKMKVDGEEAGFTTPIFNGSEVEIVWEG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00554_Transcriptional_regulator_CtsR
MKKSLADRIEEYIKVLIARSGAQQIEIQRAELAETFSCVPSQVTYVVATRFTEEAGYLSESRRGGKGFIRISCCELDKEAARESKQELFIFIDRLLEVEIISQKEGEMLKHVISKSSQEVAPEQKSQFFDAFKFALADFLKK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00555_hypothetical_protein
MYCEECKLRPATVHLAQMFNGQKIETHLCEQCASQKGAIIFGADHQLSIANLLGSFLGGNYGIQEARSPVQNSSCPNCGIKFFDIRQTGKLGCAQCYMAFEQELEPSLRRIHGNRQHVGKIPLRGGEKVLWRRQIEGLKQRLQEAVAREEYEEAAEIRDQIKNLEKRTG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00556_Putative_ATP:guanido_phosphotransferase
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NQITLGQSEEDINASLTTISQQVIEQERMLRESLREQMKYQLEDRIGRAYGILTHARLISSNEALTLLSDVRLGIDMGMIPRISANALNELVVDIRPAHLQKKAGSDMDAVSRDAKRAEVIREKLQTGEEES*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00557_Negative_regulator_of_genetic_competence_ClpC/MecB
MFRRFTQRARNAVIHAQEEARQLNHPAIGTEHILLGLLREGEGVGARALLNSGIDLEKVREEINRVIGANGEAVEKPAGDLPVTPRAKKVFNLAFDEARLQGVNYVGTEHILLAVLREEEGVAGQVLHSMGVKLDQIREQVMLLLGGDVSSTYHNQNPYQDAVSQPNPQARKRARSKTPTLDNFSRDLTQDASEGRLDPVIGRNNEIERVIQILSRRTKNNPVLIGDPGVGKTAIVEGLAQRIIDN
QIPEILSNKRVVALDLSAMVAGTKYRGEFEERLTRIVNEIKSSGDVIVFIDELHTIVGAGAAEGAIDAANILKPSLARGEFQCVGATTLNEYRKHVEKDAALERRFQPILVEEPSIEESIEILKGLRDRYEAHHGVKIGDEAIEAAAKLSARYISDRFLPDKAIDLIDEASSRVRLANYIIPEDLKKKESQLEDLIKEKEEAINGQEYEKAARLRDEEQKLRDEIENERKEWSSQRSLNAGSVGEDEIAAVVSSWTGIP
VNKLAAEESERLVQMEDVLHQRVIGQEEAVKAVSRAVRRARAGLKNPKRPIGSFVFLGPTGVGKTELARSLAEAMFGSEDAIIRLDMSEYMEKHAVSRMIGSPPGYVGYEEGGQLTEKVRRKPYSVILLDEIEKAHPDVFNILLQVMEDGRLTDGQGRTVDFRNTVLIMTSNVGAESIKNSKKVGFTRAIDEAHDYSQMKERVMEQLKHTFKPEFMNRIDEIIVFQNLNEQELKEIVDLLLLDLKERV
KENGYDMEISPAARELILKEGYDPAFGARPLKRAIQKLVEDSISEEILKKNLLPGDRILVDAEEGHIIAQKASKK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00558_Lon_protease_2
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EIALLEMSGQGLVEVPDPSYVFLSPGQDISSGTAIVASMEGSRPLLIEIQALVSSLGAGYPRRMVSGIDQNRLSLITAVLEKRRGYKLSACDVYLKVSGGVFLKDPSVDLGIAAAVLSSYLEKPLAMDTVFIGEISLSGQIRPVSFLDLRLREIDRMGYKRVIVPTSPGRSALYAGNLEVLEVKSLDHFIDIVLEG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00559_DNA_integrity_scanning_protein_DisA
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NMRRAFEEDISDSVFIARILSLGTSSSHLEQQVSSRGYRMLHKLPRIPLSIIDNLVERFGLLSNVLRASIEELDDVEGIGEVRARSIKNGLKRMQEQLLLEYML*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00560_hypothetical_protein
MKDLICDEFQNVVADLLIRHRSILDILSKLSESTCRVNRAVTKSVTDCGCLSIQAEKLQIPDHINNFEELRNYLDNHLHGQLCSNCEEIVLNEMGKMLFYTAALCNTLDISLYDVFIKEYKKASTLGIFNMT*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00561_H(2)O-forming_NADH_oxidase
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YASAYGYTRMLADSIIEGLNESGDFNLKEFDLVEASTEEILLELENARGFLIGSPTINKDCVPPVWNLLSSMSPIIHEAMVAAAFGAYGWSGEAVPNMQKRLRMLRMNVLPGLRIRFRPSREELEQAVAFGSNFGRAVLAGNQDLLEFQFINDSEKREEVVGNYIKEYANEDIIVYWDPALCQHDTHCFTRLPQVFNPEARPWVRIDGAPAEAIIRTINRCPSGALRYSLPVGSAVNPELAKGAGLLPGRI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00562_putative_PIN_and_TRAM-domain_containing_protein_precursor
VLNKLCISKSLLVLGLFFGIGCANFAGRFFQPGRSWQICLGIGAFLLFYLLSSKMLGYFSRLYSRVEDLMDAASIDILLGGTGGLLLGITIGVLCSYPLSRIGGVGNFLSLLVFILSSFLGLKMGIRRGKELLVFLPQSGKAGDESLSAFNLKVLDTSAIIDGRIYDVCLSNFLDGSLLVPNFVIEELQHIADSSDNIRRNKGRRGLELLGKMQKHPRINIDIIEDDIMEEKEVDAKLLRLCKQLGASIITNDYNLNK
VAELQGIKVLNINELTNAVKIMVYPGETMHTCIVREGKEVGQGIGYLEDGTMVVVEQAHNEIGNDIEVVVTSVFQTAAGRMIFTRKVKEEKEFVVDSFKEVQEVNLYG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00563_2-C-methyl-D-erythritol_4-phosphate_cytidylyltransferase
MVNNLRVVIAAAGSGSRMGGKINKQYILLKSRPLLAYSLDVFEKMELVDEIVIVAQAREIEYCEREVVKRFSYQKVSRVVAGGLERQDSIWAGLEELNSNTDFVAVHDGARPFVTSELIEEVLKEAVRWGAAIPGVAVRDTLKQVDRDNFVRQTLDRSSVFAIQTPQIFRYCELHKAYEYAREQRVRATDDASLFEKYIGRVKVVPGDYRNLKITTPEDLAIARTILDSLGKE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00564_2-C-methyl-D-erythritol_2,4-cyclodiphosphate_synthase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00565_putative_secreted_protein
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NEQLSGLERSWNEVKSNSRESNGLLNQLLDALRDLITGLKNALA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00566_Glutamate--tRNA_ligase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00568_Serine_acetyltransferase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00569_Cysteine--tRNA_ligase
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FSRYWIHNGFITVNQEKMSKSLGNFFILRDILKKYPADVVRFYLLSTHYRSPLDFDDGKLEEARRALGRLKTTENLAREFIGDGELGGEQTFEEGPALSFLQSVEELQNRYIEAMDDDFNTARALGHLFEISHQINSYLAAAANDTTSRSALQQALKVFQELADVLGIFMDKEQNQNQMVEKLLKIMGDLRQLARQEKDFALADQIRDFMSDNGIRVEDTAQGSRFLWEQLPAAENLVNKLLKFRT
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00570_Mini-ribonuclease_3
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00571_Thymidylate_synthase_1
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00572_Dihydrofolate_reductase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00573_hypothetical_protein
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LIDDYDELKDILVSISQSSRGKTVYITGSHKNGNEVARELGMKLAEEKDIILISGQSAGIGADAVSAFTEQCIVKQLDVSDRMRIFPNPYAANPKFSNDLSLLPELKKYRAKLFNSTQIVVVFSGRDGTEAEVEVAINRNCKIIPAIVIPEDRDNDVIKQIINNGSIMEMIKEVDKEYHDKLLDTVVSTEDIFRCLMRLVK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00574_Phosphomethylpyrimidine_synthase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00575_Putative_TrmH_family_tRNA/rRNA_methyltransferase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00576_Stage_0_sporulation_protein_H
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00579_Elongation_factor_Tu-B
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00580_50S_ribosomal_protein_L33_2
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00581_Preprotein_translocase_subunit_SecE
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00582_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00583_50S_ribosomal_protein_L11
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00584_50S_ribosomal_protein_L1
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00587_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00588_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00589_DNA-directed_RNA_polymerase_subunit_beta
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KVEARYFEEILEIPKNRVDYMDVSPKQVFSVATALIPFLENDDANRALMGANMQRQAVPLVKTEAPIVGTGLEHKAARDSGAVVIAKKAGTVKKASASRITIENDDGTIDNYELLKFMRSNQGTCYNQRPIVKVGERVEANEVIADGPSTEHGELALGRNVMVAFMPWEGYNYEDAILISEKLVKDDVFTSIHIEEYECEARDTKLGSEEITRDIPNVSEDMLKNLDDQGVIRVGAEVRPDDILVGKV
TPKGETELTPEERLLRAIFGEKAREVRDSSLRVPHGEAGKVVAVKRFSREKGDELPPGVNQLVRVYIAQKRKISEGDKMAGRHGNKGVISRILPEEDMPFLEDGTPVEIVLNPLGVPSRMNIGQILECHMGWAARALGLNIATPVFDGANEEDIFTKLREAGLLESGKTILFDGRTGEKFEHEITVGYVYMLKLAHLVDDKIHARSIGPYSLVTQQPLGGKAQFGGQRFGEMEVWALEAYGASYTLQ
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00590_DNA-directed_RNA_polymerase_subunit_beta'
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SRLKVEEGTEVEIGDALTEGPLNPHDILKTKGLQEVQRYLLQEVQKVYRSQGVDISDKHIEIMIRQMLKKVKIEDPGDTSLLPGAFVDISSFEDENNREIRAGGLPATCSPMLLGITKASLNTDSFLSAASFQETTKVLTEAAIKGKIDHLIGLKENVIIGKLIPAGTGYSAYRETSISEVPESENMVSD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00591_Ribosome-associated_protein_L7Ae-like_protein
LPLEEIRDYPRVIGSKQVKKAINRDEARKVFIAADAEPHIVEAIKKLCQAKEVEVEMAETMEKLGKYCGIDVGSATVALLKGPIGG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00592_30S_ribosomal_protein_S12
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00593_30S_ribosomal_protein_S7
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00594_Vegetative_protein_19
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IVPVLCGSSFKNKGVQMLLDAVVDYLPSPLDIPAIEAMDIASGENVRIKPEVDAPLCALAFKLASDPYVGKLTYFRIYSGRIKAGSTLFNSRQDRKERFARLLKMHANHREEIEEACAGDIVAGVGLKNTATGDTLCSENHLVLLETIDFPQPVIDVAIEAKTRADQERIEESLRRLAEEDPTFQTRQDKESGQMIISGMGELHLEIIIDRLLKEFKVNANIGKPQVAYKETVKKKTAAEVKFDRQAGGRG
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00595_Elongation_factor_Tu-B
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SALKALECGCGSRECEWCKHIWELMDAVDSYIPLPERAVDKPFLMPIEDVFTITGRGTVTTGRVERGQVKVGDEVEIVGMREATRKTVCTGVEMFRKLLDYAEAGDNIGTLLRGVDRKEVERGMVLAKPGSIKPLTAFNAEVYVLTKEEGGRHTPFFGGYRPQFYFRTTDVTGIIQLPEGVEMVMPGDNVQMAIELITPIAVEEGLRFAIREGGRTVGAGVVTSLNE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00596_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00599_50S_ribosomal_protein_L23
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00602_50S_ribosomal_protein_L22
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00605_50S_ribosomal_protein_L29
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00606_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00607_50S_ribosomal_protein_L14
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00608_50S_ribosomal_protein_L24
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00609_50S_ribosomal_protein_L5
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00612_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00614_30S_ribosomal_protein_S5
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00615_50S_ribosomal_protein_L30
LAKHLKLTWTKSFIGCPETQRATIKSLGFKKLQQSLIKEDCPQIRGQINKVQHLLTVEEID*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00617_preprotein_translocase_subunit_SecY
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00618_Adenylate_kinase
MNIILMGPPGAGKGTQAELIKARFPIPHISTGDIFRDAVNQGSELGQEAQKYMSSGQLVPDEITTAIVKERITQADCEQGFLLDGFPRTTAQAQALDQSLTELGKKIDLAVNIDVPTELLIERLSGRISCQECKRVYNLNFNPPREQGKCDSCGSELVQRNDDRGETVAKRLEVYSQQTRPLLQYYEAQGVLFNIEGSRGSNQVFADIQEKLESL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00619_Methionine_aminopeptidase_1
MICLKTRDEIAKMRKAGKLVARVLKMLENKVQPGITTGALNALAEEECRKNSAIPVFKNYPHSRGGRAFPAVICTSLNEEVVHGIPGSRLLKEGDIISIDFAVILDGFAGDAAITVPVGQVDPRVRKLISTTEESLMKGIEQARAGRRLGAVSRAIQEHAEKNCFSVVRDFVGHGIGRDMHEQPPVPNYGKRDRGPVLKEGMTIAIEPMLNMGSCQVYTRSDEWTVVTRDGGWSAHFEHSIAITAGEP
EILTLR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00620_hypothetical_protein
VVYSKSGRDKGRMFVVVKLVNERFVLVADGEQRKIENPKLKNIKHLQWTRIKAEEVESYLARGEVPENHIIRKNLKRIQDRGEGGLVDG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00621_Translation_initiation_factor_IF-1
MAKEDVIEVEGTVVEPLPNTMFKVELDNGHKVLAHISGKMRMNFIRILPGDRVMVELSPYDLKRGRIIYRFK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00622_hypothetical_protein
LARIAGVDLPRDKRIEVSLTYIFGIGRSSSRKILAEAGINPDTRVKDLTEEEVSRLREIIEKEYHVEGDLRRQVNMDIKRLMDLGCYRGIRHRRGLPVRGQNTKTNARTRKGPKRTAGGKKK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00623_30S_ribosomal_protein_S11
VARRTTTRVKRREKKNIEHGIAHIKSTFNNTIISITDRHGNAISWSSAGTIGFKGSRKSTPFAAQQAAENAAKAAMEHGLKEVECYVKGPGAGREAAIRSLQAAGLEVSVIKDVTPIPHNGCRPPKRRRV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00624_30S_ribosomal_protein_S4
VGRYTDSVCRQCRREGEKLFLKGDRCYSEKCSVSRRAYPPGAHGQGRRQKPSEYGIQLREKQKTRRIYGIQEKQFRNYFRKADRKQGITGDNLLVLLERRLDNVVYRLGFASSRKEARQLVNHGHFFINGHKANIPSMLVRVGDIIEVRESSRESNKFQEMKEQAAYKTPPEWLSVDAEKMTGTVLAYPRREQIDTLVNEQLIVELYSR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00625_DNA-directed_RNA_polymerase_subunit_alpha
MLEMEKPRIECVEKNSSSNYGRFVIEPLERGYGTTLGNSLRRVLLSSLPGAAVTSIKIDGVLHEFSTIPGVLEDTTEIILNIKKLVLSYTGSERKIIRLEQQGPKEVKASDITPDAEVEILNPDLHLASLDEDGKVEIEMTVERGRGYVSSDQQPQKNDDIVGLIPIDSIFTPVSRVNYTVENARVGRKTDYDRLNLEVWTNGSISPEEAISLSAQILIEYLKLFTEIDDTYAEVEILVEKEEEKKDKILEMSIEELELS
VRASNGLKRASINTVGDLIAKNREEMSKIRNLGQKSLEEIERKLKELNLSFRKSED*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00626_hypothetical_protein
VSYRRLGLRSDHRRSVLRNSVTSLLKEGKISTTETRAKEIKRLTEKMITLGKRGDLHARRQAAAYIMSDEVIQKLFSDIAARYEERNGGYTRLIKTGYRKGDGAPMVLIELVE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00627_Energy-coupling_factor_transporter_ATP-binding_protein_EcfA1
MISLRDLTYFYPGEELPALKNISLDIRENEFLVILGRNGSGKSTLARLLNGLLLPSQGKVEVDGWNTADANQLQLIRQKVGLLFSNPENQLISNQVEEDVAFGPENLGLNPAEIRRRVNDSLRLVSMESYKDSAPAFLSGGQKQKIAIAGVMAMKPRYLVLDEALSMIDPRGKREIMESIRSLHKNEGVAVIMITHDLEEAREADRVVVLEEGKVKTISTPEELFPGHASLLALGLAPLEISHIIAEINRQGIL
LRTDILDMDKLVEEICHFI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00628_Energy-coupling_factor_transporter_ATP-binding_protein_EcfA2
MSLYLENISFTYQSGTPFEKTALSGVSLSINDGDFVGITGGSGSGKSTLLQVLSGLLFPFAGKLCLDTEAINPGQKKSLNRLRRIVGLVFQFPEEQIFELQVYDEIAFGPRNLGFSRSEVDERVREAMNHMGLGFEKYSLRHCHSLSSGEKRRLAIAAILAMQPQILLLDEPAAGLDYEGWQALLQRLNYLNREKGISIVMVSHHYQQLLASCPRIILLDKGRLILDAASSSWLEYLDFLMQQGWELTASQ
ELVYRLMQKGWEFASSPRSPEETAWAVVDFIRRSRK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00629_Energy-coupling_factor_transporter_transmembrane_protein_EcfT
MNTSLILGQYIPEKSLIHELDPRSKIIGTALLSLAVFLSAFPEEQLFILFLVMIIILTSKISMRIHYLALKPFLFILALALLIQMLMTPGQELIEFYFIKITVEGLQAAGSLGLRLLTLLILANLLSLTTTPMAFTAALERMFRPLGKWGLPVHELVMVMNISLRFIPLLLEEAERIRKAQLGRGADFRQGKLLGRIRRLGAVIIPVFRLSIYRAEMIATAMESRGYCGAEGRTQLNELRMKAFDYVYIILSLGMCLLVT
MTWGRGC*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00630_tRNA_pseudouridine_synthase_A
MTRIKLLLEYDGRNYHGFQLQKNANTVQAELEKAIYRLSGEQATLVCAGRTDAGVHAWGQVVAFDSCSTIPGDRWAYALNSQLPEDIQVLESQETRAEFNPRFDALKKCYGYLIYRQKKKATFYRHYALCSTEPLKLEAMQEAAGILKGRQNFRSFCASGSSARTFEREIFRCCLSEKGPYLLLRIEADGFLYNMVRIITGTLLEVGRGKYPPQHLREIIASQDRTRAGPTAPPQGLYLLQVFYP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00631_hypothetical_protein
MPKRIICLLLITIVLTFAHSTARDGLSISPVYYPVNQGSNEVQQAFAAMVKDFAIYSSLLEDVDSSSGYLISQHANDSDEAINFLSPGFEPQLASDIVEAYTQWIPGNEKLAIVPCDGIPVLTQADYNECSFYQPNHSSIIFRRSYSGCYSEQDSFLFTVHLSYADKSWKIEKLELLESPD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00632_DegV_domain-containing_protein
LQEKIALLCDSMCDLPRSFIEKFNIKVVSARVIYPHQEYADRVDIQPEEVYARMPQEIPTTAMPPLQEIQEIFDKIRSEGFTHVLAVHISSGLSGTFQAVKLIAKDIQDMKVEVIDTKTLSMGTGWLVLDAARNIANGWSFDKILENQKKLQSKMHLYYVIETLEYLRRGGRIGLVASMLGEFLHLKPIISVNLEGKYFTFCKAKGRKKSIDKLIELVEQSMKDKPFNLAILHGGAKAECEAILERMRNLPNI
REVITSDISPALGVHTGPGLLGVCFHEV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00633_putative_DNA-binding_protein
MLEKTEHMIMLKDFYGPLLTLTQQDLMSLYYEDDWSLSEIAENRGTSRQAVYDVLKRAETALQEYEERLGLVDKFVLTRRGLEEAYALLKKTGCLGQKEIEKAIEILHEIMESV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00634_hypothetical_protein
VAFEGLSDRLQDIFKKLRGKGKIGEEDVKTAMREVRLALLEADVNFKVVKDFVERVRQRAVGQEVLQSLTPGQQIIKVVHDEMTALMGGSESKLNLAAKPPSIYMLVGLQGAGKTTTVAKLGRNLLKQGRRPVLVAGDIYRPAAIKQLQVLGEQVGIPVFSMGQSNPVDIARASLEYARSQNRDIVILDTAGRLHINEELMDELKQIKSAINPHEILLVVDAMTGQDAVNVAESFNRDLGLTGVIL
TKLDGDTRGGAALSVKAVTGCPIKYVGMGEKLDALETFFPDRMASRILGMGDILSLVEKAQANIDQEKAREMERKIRKQEFTLEDFLEQMQQVRSMGPLDELLGMIPGIGKQMKGFKGEFDEREILRIEAIIKSMTLQERRDTSIINGSRKKRIARGSGTKVQEVNRLLKQFEESRKLMKQFADLGGKKGKRGGMPPIRFPF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00635_hypothetical_protein
VATRIRLRRMGAKKSPFYRLVVADSRYPRDGRFIEELGYYNPSTTPATVNIDEEKALKWLASGAKPSDTAKSLLQKQGIMARFAEIRK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00636_putative_RNA-binding_protein_(contains_KH_domain)
VKELVEYIAKSLVDNPDEVEVRESEGERSTVLELKVAADDMGKVIGKQGKIAKAIRTLTKATAAKEGKRVAVEIVKEG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00637_hypothetical_protein
LNSDKLVAIGKIAGTYGYAGWLKVIPLTDFPERFYKLDKVILNQGGKLGTFLVDGLKAHNNFYLFKFSGIDTVEVAQGFQNGILQIDESELYPLPEGYFYHFQLQGLSVYDEEKGLLGELTDIIETGANDVYVVDSPQYGEILIPAIKDVILAVKLEEKRMEIKLLPGLIED*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00638_tRNA_(guanine-N(1)-)-methyltransferase
MKIDILTLFPEMFVSPFNESIIKRAREQGIITINITNIRDFAQDRQQQVDDYPYGGGAGMVLKANVLGTAIEEVKGPDTWVLYMSPQGKPLNQDRVWELARRKELLIVCGHYEGIDERVMAMVDEEISIGDYILTGGELPAMVLVDAIARLIPGVLGDENSAMEESFSCSLLEYPQYTRPASYGEQEVPEVLLSGHHENIRRWRKKQSLLRTLLKRPDLLLKKCFDEEEKSLLEEILFHRENKR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00639_SpoU_rRNA_Methylase_family_protein
LRKAKVYIALLHYPMYNKRMEIITTSITNLDLHDISRVARTYDVDAFFLVHPSPNQQELIRDIISYWQDGYGGQYNPDRKDAFNIIKSAETLEEVQEYLESMNGEKVFTVATDARLYANTISYSQLKNMVFNEEKSFLLLFGTGWGIQKEIMESCDYILQPIEAKRNYNHLSVRSAVSIILDRLLGEYWFNL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00640_50S_ribosomal_protein_L19
MQNIIKSIEEEYYKKDLPRFGPGDTVKVHVKVVEGTRERLQVFEGTVIKIRGTGLSQTFTVRRTTSGVGVERTFPLHSPKIARIEVTRRGKVRRGRLYYLRQLTGKKARVKEKGRY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00641_Ribosome_biogenesis_GTPase_A
LTINWFPGHMVKARREIEKNIKLVDIALILLDARAPFSCRNSDLEKIARNKKVVMVLNKADLASPEAIRHYMQALEQEGFLVVAMDSLSGKGRQAVLRMAKSAFQEKAEELQRKGRRPRAIRAMIMGVPNIGKSTFLNSLVGQKIAQTGAKPGVTRGKQWVRLREDIELLDTPGLMWPRVESEEQGLKLALLDIVGENAYSEYEVGLYLLSILKDKHPQILLEKLGLDAGNQLEEEMLAKIAGKRGYL
LKGGVPDLDKTCQVLLQEFRRGKLGNISLD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00642_Capsule_biosynthesis_protein_CapA
VLRRFAIVFIFISLGSLASYYIYQATIGQQEPAEQCTASPVSKIKNTPTPKKATITLTAAGDCLMHNTQIWSGLQADGSYCFDSFFPEVRELIMEGDYSSINFEAAMAGPDSAYTGYPLFNSPDAMAQTLKEAGFDLVATANNHCLDRGVKGAIRTLKVLEQAGLDTLGTYKSEEDSHTYLIKDIKGVKVAYLAYTYGTNGIPLPDEYSFLINFLDEKEILADIKAVRPQVDVLVLVLHWGLEYNPRPSD
MQKRQAYSFLEAGADVILGSHPHVIQTMEKIRIAEKDKFVIYSIGNFISHQIGQERNSGIVLKMKFTKDFSSGNTLLDEVSYTPTFSHSYQEAGKMKFRVVPVEKTIEKIEKGEERILSKNHLPLLQAVLASTRSQLGEGFSRK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00643_hypothetical_protein
MQDLYWECKVCEACGVCGKSEEECRLYDEYYGFGKSPGAGKAERGSLAVLERDARKLNQANQGVINRLNGRIVKVIEGESTALLTIAMGEHYISSMMPLSRFRESGKKIGDLLAVAFKSIDVKVMN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00644_Nitrogen_assimilation_regulatory_protein
MNLGEIMSPNPVLLRPEQSIRETVTLFLERNIDGAPVVDENNQIIGLFTKTHVYRAIKESMDMLQPIENIMKRDIIGHPDEEIEDVLYPGLGRLPIADETGIVGMITRTDLARVFLESYRNISSELDAIINSTHNMIVSVDKQSRIRVFNRAAEKLLKQKAENVKGKLIDDVYPTSRLTNIIKSGQVETLQKIMLNNHYFISNRSPIIKDGEIGAVGVLQDISELEELSRELKYVKELNEELDAIIESSYDGLYITD
GNGMTLRLNQAFEMITGVNGREFLGRYVDDIAQEGIVSESVSSLALARKETVTIIQETRSGKTTLATGSPVFDKNGNIFRVVCNVRDITELNMLKQKLEKVQGLSQHYESQLKTLRIYSGTDKIISKSSEMRKLLETVVRLAEVDSTILINGESGTGKELIAETIHNHSARAKKPFIKVNCGAIPENLMESELFGYDYGAFTGAKKEGKAGYFELAHEGTLFLDEIGDLPFNLQVKLLRVLQSKEINRVGGR
QALKVDTRILAATNRNLLEMVQKKQFREDLFYRLHVIPVIIPPLRDRKEDIPSLIVHFIALFNRKYRLNKRICPDVVDILMAYDWPGNVRELENLIERLVVISSSDIISRDELPIHLGSAVLDSPQVSVSAIVPLKEAVESVEKQLLERAFAQYRTTRQIAKKLEVNASTVVRKAAKYGISSSSNSNKRT*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00645_Mu-like_prophage_protein_Com
VNDFRCNKCHKLLGKYRDCLELEIKCPRCGSRNSLAQKLKNENENEREKELCLASIEKRRG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00646_Acetyl-CoA_acetyltransferase
MSDYVQKLEMKRADYPKKIAVSGFGERKPDYSGMGRNVGNVYKNFREVVCVEACRTPYGVMGGKLKEYDAPQLGALAIKEVLRRTNGKVKPEDVDYVYMGQVVPAGNGQIPGRQATILAGLPESVPAISVNKVCSSGIKTIDLGVQAIMLGKADIVIAGGQESMSNCPYSLPEMRYGRRMGLLNANCVDLMVYDGLWDAFYNRHMAIHGSETSDEFGFTREDNDEWGYNSQMKAVAAMEA
GRLDDEIFPVETNRGKDVLSKDEGPRPQTKMEALAKLPPVFNHKSTVTGKPGSVTAGNAPGVNDGGDVCLLMSRQKADELGLKPLFSIVDYAEVSQQTKDIATVPGLSIKKVLEQNGMTYKDVDLIEINEAFAAVVLVSARTILGMSKEEMFEKVNVNGSAIAFGHPIGATGARIVMTLAYELRRRGGGIGVCGICSGHAQGDAMLIKVEA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00647_putative_3-hydroxybutyryl-CoA_dehydrogenase
MAIKKIMVIGAGQMGGGIAQVSAQAGYDTVQYDINMDLVNKGLAIVEKNLTRDVSKGKKSKEDKAAILGRIKPSIKLEDAADCDLVIEAIVENFDIKKQVFSQLDQIAPAHAILASNTSSLPITQIAATTKRPEKVIGMHFMNPVPVMKLVEIIRGLATTDEVYKIIEEASIKMGKTPVWCKDVPGFISNRVLQVMINEALWELYEGVAPAENIDNIMKLGMNHPMGPCELADLIGLDTILSILNVMYTG
YGDPKYRPSPLLKQYVQAGWLGRKTGKGIYDYRK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00648_putative_enoyl-CoA_hydratase_echA8
MEFENLILKKEERIAHLVINRPKALNALNQDTLIEIKTAVEDVRDDQDIDVLIISGAGGKAFVAGADITEMMEISALEGREFGLLGQGVMRLIEAMEKPVIAAIDGFCLGGGCELAMACDFRICSEKSKFGQPEVGLGVTPGFGGTQRLPRIVGTGIAKQLLYTGDIINADEAMRVGLVNYIVPSEQLMGNVEKLAQKIALRGQKSVRFCKIAVNEGMQTDIDRAMTVEADLFGLCFATEDQKEGMR
AFVEKRKANFIGK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00649_Acyl-CoA_dehydrogenase
MDFSLSDESLMMRDMFRKFSKNEVEPLAAETDRTHEFPMGTFKKMADLGLTGLPIPEEWGGAGASYLDFAMFVEELAKCCASTAVIMSVHTGLGCMSTYLYGSQRVKEKYLRALATGEIVGAYALTEPNAGSDAASLKCKAEDKGDYFLVNGSKIFITNGIVATTYCTFVKSDPTQGSGRGITCLVIEKDTPGFTMSKPVAKMGMNGSPTVELYFEDVKVPKENVLGEINDGFKVAMGLLAGG
RVTIAAQGLGIGEGALDYTVQYIKERQQFGKPLAANQGVQFMVADMAAALDAAQLLVYRAAWLKDNGLPHNKEASMAKKFATDTGMEVCTNCVQLMGGYGYCNEFPVERMMRDVKITQIYEGSNQIQRMIIGRETIGRF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00650_Glutaconate_CoA-transferase_subunit_A
MGKAERITLKEAGALIQDGDMLSFSGFTIWRRPMALVYELVRQGKKNLHLFEVNGGTHTEVLAGAGAVKIWESCWVGHELYGKLGEGVARGQCEKSMIVEDYSHGQVVARLLAGAYGLPFFPTALSMGTDILNPQYDMLKRAGLRDGSNPKIPRQKYTVSQDPFYDMGEILLMPAANPNWALVYASQVGDEGTMRVNAQTYTDAEVIKAADKVIVVAEEIVPDSYLRSEPEKNIATGYSIDYV
VELPWSAHPTGSQGYYDVDADFIRNFYSASKSKAGYDKWAEEWIFGVDSHEQYLEKLGISNLEKLRANKVLGYSTRVKRGSR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00651_Glutaconate_CoA-transferase_subunit_B
MTAKNNKLAKAGEYKPIDLLAVAAAREVVDGDIVFAGTGLPMLAIMLAQKVSAPNAVCIYEAGSIDGRPIDLPTSVGDARCAHQASMAAGLTEAFYGQLHCGYVDLAFLGGAEIDKYGNVNTTVVGDYLSPEKRFTGSGGNPDINALARRTVFIMVQEKRRFREHVDYITSPGWRLPKWPGGEFVHKREVYGKFFRGGVEAVITNMGVFRFDEEGIMYLDTVHPGFTPQQVKDNCSFDLNISR
VSGETKPPTYYELELLYKEVDPEGIFLP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00652_metallo-beta-lactamase/flavodoxin_domain-containing_protein
VQLSENVLLLGNRHFNYFLVGKKEAAIIECGVSGGVYSFQKQWEKLHQKPEVKYLVAMHAHFDHVCGIPALQKMFPAAVLLASSPAEAVLKKAKIMENFFAQDEKMLDLLADEGIIPRGLQSPNVTEIALDKLIAEGDEIKLGGDLNIKVLDAPGHSPCSLACYLPAEQVMFISDACGFQISDEDIFPVFFQAYDIYLETIKRLMSYPSKLLAIPHERIWTGRNIDAFYRRALSSAEQAFNIIRDLLDQGWE
DEKIEKELFARYYKGSLKIYTPENIQQCVQILLRRVKEKL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00653_NADH_oxidase
MKTFPELFSPAYIGKLLVKNRIVMAPMLVSYASSDGEVSERLLDYYEARARGGAGLIVVEAACVDAPTGRESFRQINIDSLRYVAGLQQLAQHIKAYGCRTFIQLFHAGRQTSSLFTGVQPVAPSPLACPMVKEIPRELTGEEIKEIENKFSQAAAYAFMAGFDGVELHAAHGYLINQFLSPHSNLRQDEYGGSLENRMRFLLNIIKKIKTSSPGLIISVRINMDDFVPGGLELKESVEICQHLEQAGVELIN
CSSGTYESGLKSIEPASYKEGWRVYLAGELKKWIHIPVIAGGMLNNPAFANQLIAGGQADFIFLGRSLLADSEWPHKVRESGTEDIRPCIRCNNCIDNNFRGMMVDCSVNPLTGRERHFSQEGKKLLHKANVMVVGGGPAGMQAALSLKSRGLNVTLYEKEKSLGGLLNLACLPPHKHRVAYLRDYLIRQVEKSGVEAFLNCSFNLESLPDLNPDYLLIATGSKPLLPQIPGWDQSYCLGIREVLERK
PEIKGKRVVIIGGGSNGCEVADFLLAGNNQITIVEQNKYLAADMEKKNRRDLMNRLEEGKVNKKTSSQVMEIKDQQLQLKSQQGAYECLEADYIVLATGFTPNNALYIEAQNRHKNVYLIGDAFQVKGFKNAFLQGEAVAHMIATGLKK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00654_Ribonuclease_HII
VRSEQPLYNKRLFSDIIDKSTHFKEGLGLDKQKYLLDEVKRIEDLKRYEYEAYNNGFRYIAGIDEAGRGPIAGPVMAAAVILSRDFFCPGINDSKKLTALKRSKLAAEIKKQAITWSVAAVFPSYLDKVNILNATREAMLLAVKNLSPRPEFLLIDAVQLPDIDIKQYPLIKGDSLSVSIAAASILAKVERDRVMEAFDSLYPGYGFSKHKGYATREHLQSLLRLGTCALHRVSFEPVKSMVLGARYGEQPALF
E*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00655_hypothetical_protein
MENSQLYLNKIMLNITTSKDQNLNFVKGEVLRGMVQDIKADGLVSLFIKGQMIDAVSEVLVQPGQQLQLMVEDFRDGRAYLKVLTPQLMERIENSNISLNLTEIGVPAKEENIMMARKLLHYKLPVTSNNLNLMSKAMVILGGANEKNAEIVAFSMARKLPLDAPTLKSLAQFLMPANDVSKLAGNLDKGLLQLEQTVARMVETSGSSHIASSRPVGEMGTEATRQPGISGDKLIAEKVFSATAV
ANKGSESMQVSSKGPEIQGFTGTKSGEVLLPGEGRPALGQASSAPEAKIANVIEQNYGKIKLEALLSGNSKNISELPVEPADARRNITLTGEKAAAVSSRVTTSSSPTQASPQSENVTSTSPAVNPAKAGGETSAVEKTLLGQITATINSKESTLASETGKNLGGSPAMDQGKSVSSPVLVNEKATLEGGKSPGVQTLESTINKKEPASGIIKNVYTPTATSATSGRERQPLVTNLPVTDGKTVNVPELLPG
NISDKALSSGGMPMDSYKQISGQGAIAQVSPPIIAEGVTEVFKEAFALLTNPNNDWTAPEQRELLRHLPLLRTLLETLHLNLEGDSREIGNRLQNAFSQERDIIRGLNLLQDIIKNDSITSKNPLMADLFNRIEGMERELSAQRMLNFASRGAVDSSSNYFYFAFPVQCGEKYRLGQLRINRELGKRGLNKQDNIRFIVSLDTVQMGVVLFHVNWKRLGELEVQGVVERQEIREYLNRNLGELFQGLES
LGYRIKNLGIKVVEQEEEMRLRLALEETPLNFRPFGIDVRV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00656_Flagellar_biosynthetic_protein_FlhB
VKEKDMEKAVALRYDMEKDEVPVVVAKGQGFIAEKIKKVARESGVPIKEDRELADYLMALDLYEEIPPELYAVVAEILAFIYRMDKRFI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00657_hypothetical_protein
MNRELGLWGEELAAQYLRKKGYKILERNFFTRYGELDLVCEKDDNIVFVEVKTRRSTRFGSPEEAVTPRKIGNLKKAAILYLKSSPRFFPEISFDVVSILVEDGKSRINHIINAF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00658_hypothetical_protein
MLIYGKDIREQIKERVRQTAIEVKMGLAIIRVGDDPSSLAYVRGIRKFAEETGVKAEIVNLPDSVGERELLNTIGDLNNNSVITGIMLQTPLPAGLNASRLINAIDFDKDVEGIHNYNLGKLISKEEGVRPCTPKAVISMLKAHDIPIEGQKVTIIGRSMTVGSPLALMMTAENATVTVCHTRTRKLKEEALRADILVAAVGKREFVTADMVHKDMVVIDVGINFDENGKMLGDVHEEAWNHCRVASA
VPGGIGVITVAELFDNLRILSQKA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00659_putative_ABC_transporter_permease_protein
LLLIISPLLCIFASLFIGRYPLSIDEVIRILWCKTAQLPCEVLDIKQTIVWDIRLPRAILGALVGGCLAISGAAFQGLFRNPLVSSGILGVSSGAGFGAALAIVMFSSVSSATYIFAFAFGTLAVFLSYIIGRVYDTTPTIMLVLGGVIVSSVFSALISLLKYVADPYQQLPAIVFWLMGSLATARYSDIVAAGLPMLVGIAGLLAIRWRINVLSMGDKEAHTLGVNLAVDKGLVIISATLATAAAVSVSGIIGWVGLVIP
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00660_putative_ABC_transporter_ATP-binding_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00671_Heat_shock_protein_70
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00673_Serine_chemoreceptor_protein
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MLEERLISSHLLDEDDNNENSIRPGRLSEYIGQEKVKENVEVFITAARERKESLDHVLLSGPPGLGKTTLASIIANEIGKPIRKTSGPAIERPGDLAAILTNLEPGEVLFIDEIHRLNRNVEEIMYPAMEDFVIDIIIGKGPAARTLRLDLPPFTLIGATTRPGLLSSPLRDRFGINCRLDFYTPLELGEIILRAARILEISLDKEGAAEIAGRSRGTPRVANRLLRRVRDYALVKGNGNIDFSLAKWALEMLEIDECG
LDVMDRMILEAIIIKFSGGPVGLDTLAASVSEESDTISDVYEPYLLKLGFIQKTPRGRMATEHAYHHLGYPLKGNLQGKGLFSDE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00700_hypothetical_protein
MSKVLLHICCGPCASYPVPRLREEGFELMGYFYNPNIHPFTEYQKRKEALEDYARQVELKVIFEPDYKPVDYFQNITYRESRRCLLCYQMRLEQAAQIARKGKFDYFTTTLLVSKYQKHELIREIGEAIGEKYELPFLYRDFREGFRQTGIIAREMGLYRQQYCGCLYSEMERYQSSRKKA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00701_S-adenosylmethionine:tRNA_ribosyltransferase-isomerase
MLHDKNDDIYRLSTYHYDLPPELIAQYPAEYRDSSRLLVLDRKSGDLKDRVFKDIGQYLKKGDALVLNETRVIPARFFAYKESGARVEILLLKKLGDDWEALVKPARRLKVGSRVFLSPDQPLLIEIVEELEFAGGRRVRFLNGINEDTLLQEQGHIPLPPYINRPDEELDRERYQTVYASKSGSVAAPTAGLHFTPDLLKDIALQGINIVRIVLHVGMGTFRPVKNKDIRQHTMHLEYFEVAEEAAALL
NLTRESGGQIVAVGTTVVRTLESVYNEDCGFVAGKGETNKYIFPGYQFRAIDKLLTNFHLPASSLLMLVAAFAGTESTLAAYRHAVENRYRFFSYGDAMLVI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00702_Queuine_tRNA-ribosyltransferase
MFKFELLQEDKTSAARLGRLSTAHTTVDTPIFMPVGTQATVKTLTPEDLYEIGAGIILANAYHLYLRPGCELIQQAGGLHRFMNWKKGILTDSGGFQVFSLSKLRDINDDGVWFHSHIDGSRHFLTPEKVMEIEAKLGADIAMCFDECAPYPCSYEEAEKAVKRTSLWAGRCKKAHNNDKQVLFGIIQGSVYPELRERSVGELVALDFPGYAIGGLSVGEPKEMLYATLEVTTRILPREKPRYLMGV
GAPEDLLEGVRLGVDMFDCVLPTRLARHGTAYTAGGKITVRNALYAADFSPLDAGCSCYVCQNYSRAYIRHLIKAEEILAQRLISYHNLFFLFQLMAGIRAALAKGEFPSFYREFFHNYISV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00703_preprotein_translocase_subunit_YajC
LAAQGSSEWMTIAIYFGLFLAIFYFFLILPRKKQEKKHKIMVEELKKGDRVVTIGGIRGEIGRVKEDTIMLKVADNMEIEMVKKAVAYKVEE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00704_hypothetical_protein
MVTLKDVRSSPIINTFIQKGNEHLGVMGYTDHGQLHLSLVSALSKDIMIKLGYDERLAELAGIAGYMHDIGNVINRIGHSQSGALMAMEILRRMGMVPEEAAIITAAIGNHDEGSGHPVNEVAAALILADKSHVHRNRVRNPDVATFDIHDRVNYAVERSTLNIDENEKVITMELVIDTSICPVMEYFEIFMSRMLLCRRAAGFLGCEFELVINGVQLL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00705_preprotein_translocase_subunit_SecD
LQKNFSVAVILAIIVALGALTYFAYHPILKNLNLGLDLRGGLHVVLEAQEKEGQKISADTINKAVGILRNRVDKLGVSEPLIYPQGERRVVVELAGIDDPEEAVNIIKNTAQLEFWDESGKVLVTGKHLKEAQARASGEGQGFEVAIDFDREGAKLFADATTANVNKPLMIVIDGKVISAPTVSGPITDGSARITGNFTAKEAENLAVLLRSGALPVSFKILEKRTVGPTLGSDSLSKSVKAGIAGLIAILIFM
LGYYRLPGFIADISIVLYSILVLGTMTLFGAVLTLPGIAAFVLSIGMAVDANIIIYERIKEELRWGKTLKAAIEAGFNRAFWTIFDANLTTLIAAFVLLYFGSGPIKGFAVTLSIGIIASMLVVLTFTRYLLVLSADLSKNHKLYGV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00706_preprotein_translocase_subunit_SecF
VQFIQNRKYSFIFSTILIILGLISIFVQGFKLGIDFEGGSLLRFKMDAAVSSAEVRSTIEEFKFIDQASIQKSGNEFLIRTRELNQEQTEQINKAFAAKFKNVEYLSAESVGATMGSELTRNAVLSVLIAMLLMLVYISFRFEWTFGVAAVVALFHNVLIVLGIFSIFQWELDGAFIAAILTIVGYSINDTIVIFDRIRENLRLKTRDDLTTLLNKSIMQTMNRSVNTVLTVLFPLVTLYLFGGSTIKIFVLTMLIGFVVG
AYSSIFIASPLYYDIKQRA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00707_putative_integral_membrane_protein
MRAYLFIALFIALITGVFIFQNTAVVKVHFLNWVSPEISLALVILLTLCSGALLTFLLDSVRYFQIASKIRELTVSNKKLQMEIDRLKLQQKDEEGKKEM*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00708_Diaminopimelate_decarboxylase
LTGTMKINSQGHLEIGGMDTVDLAREFGTPLWIIDEEGFRRNCRNIKDAFSLYGDSQVLYASKTLATMAIYRIVEQEGLGLDVVSGGELYTALKAGFPMEKVYFHGNNKSREELRMAIRVGVARIVVDNFYELELLNQLCTEENCQQEILLRVTPGVEAHTHEYIQTGQIDSKFGFTLTDGQALEGVKKALSMPGIKLVGLHCHIGSQIFAMQSFRYTSSAMMDFWAEIKRRSGCQLEELNLGGGL
GIYYVAGDEPRKAEEWAKAVMPVVQEKARQHGLKVPRIIVEPGRAIAGPAGLTLYTLGSCKEVKGIRKYVAVDGGMTDNPRPALYAAKYQALLANKAEEKPVETVSIAGKCCESGDMLIWDIKLPRVEAGDILAVLATGAYNYSMSSNYNRLPRPAMVLVKQGQAELIIKREDYEDLLRNDLIPERLKGACQGDVSFVL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00709_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00710_hypothetical_protein
MRSEAEKLLFLIRNFPIIMGKHFFRQGVTGKVYEKIEKYSVEAVFNTGFEVKGQWKDDLHNIHCRLVFDFDSFKIIEAEAWAESTPFPICPQGLKSIDRIVGSTVGPGFNRIVTENIMEKEGCVHLGELVMNSVKALVQAASRDKPEWVETADYTQRWNDWIRMYQDQCIFFSQPGVFENSQEEIQTAFRSKK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00711_Multifunctional_CCA_protein
VEIITSHNALDFDGLAAMVAAGKLYPGAVKVFSGTLSKNIRQFMALYKDLFSIKYPKEIDLKQVKRMIVVDTASANRLGHLKELASQEGIDFYVYDHHPPSLDDLPASISEVEQVGAVTTLLVEKIAERSIKLSAFDATILALGIYEDTGSLLFNSTTPRDISAAAYLLSRGANLSVVANFMDQPFSGEQRELLHVLLNSSQHHLIKNIDVVIALWDSNEFIPGLDTVTYRLLEIENCDVAFAVALMQGKVN
VVGRSRSNNVKVNEVLRKLGGRGHDRAASAIVKGKSPDEVREIIMAELEKAVQPGLLARDIMSTPVKTIPQNISMEEAGRIMLRYGHTGMPVVEGEKMIGVISRRDVDKAKIHDLGHAPIKGFMSSGVLSVAPDTPVGEIQRMMVEYDVGRLPVTDNNRLMGIVSRTDILRTLHGDDYPEDHEVLYSFTGEENQNCLAIMQERMPSRLIATLRLAGEMAESIGSRVYCVGGFVRDFFLRVPNFDVD
LVVEGDGEELARKMARHLGGKARIHERFRTAALILPDGTKIDIATARTEYYEFPAALPKVEKASIREDMYRRDFTINTLVIALNPDSFGDLIDYFGGRKDLEKGLIRILYNLSFVEDPTRIIRAIRFEQRYKFTIEDDTLRFAKDAIERRLLGKLSYKRIIQELILLLSEIDPLPALDRIMEIGVWEYMIPEIDLNKVSRTMIKRTPIIITWWEERYYGKNIKGWLVYLMLLLAGLNEERVIQIIKRYHLDNYARKAIQE
SRQVPQIVEYLRENREILPGDMNQRLDGWSHESMVLLLLSIKDELLWEKLVNYLDLKEQVKVEINGFDLKKMGLKEGPEFRLIFDELYQKKLNGEIKNREEELQMAEKWIMEGKFNNDPVAE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00712_Zn-dependent_proteases
MIQSLSEMLIALPAIMIALTFHEYAHGKVADLLGDSTPYYQGRLTLNPLPHIDWIGFFMLFLFHFGWAKPVQVNPYNFKNVSPKQGMMLVSLAGPGMNILLAFLGMLAYKYLLPFQEQEWAIMTINLIHPLIYINLILAAFNLIPLPPLDGSKIVAGLLPDSGAEIVYSLEPYGPLILLLLIITGAAAYIFLPLASFLNTLLYAIVF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00713_Segregation_and_condensation_protein_A
MNYVVDLESFHGPLDLLLYLLEEQQLEIYDIPIATITDQYMEYLRQTGEFNLEQMGDFLIMATYLLNLKSRMLLPSRVELSEEEDSDPRAELVQRLLDYKKYKKLAECLLSYQNGDFPRVFFRDSEDEISGIEELVGDAAQLWRSFQVLLRDLPEQEEKFRLPQGDVNISEKMEEIVERLEQGKAGLVLQDLFQGVISLREALAFFLALLELIRLQRVEAIQEQSFGEIKIRLQVAV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00714_Segregation_and_condensation_protein_B
MLMRDQIKAAVEAVLFVRAGRVGMDELVEILDIPLLELKEILLEMILEYNNNIRSGLQIVELNGGYLLCTRPAYSDILARMEKPQKKRLSAAALDTLAIVAYRQPVTRLEIEQIRGVKSDRIVNTLLEKGLIQEAGHKAVLGKPILYATTEEFLKVFGLTSLKELPDLEEL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00715_hypothetical_protein
VAERSIEEEIKIKAQQGRKLARYMSSTQDLVENQIRKAQERGEFNNLEGSGKPISLEENPFEPPELRMTFKILKDNDFAPYWIELGKEIDHEIDKFRKEVEFFKRYTAIFYSQGHSSPAEKRFDSKKALFYAESRFTLQRIDKKISDYNLHCPFFRMGRPNMKIDDEIYKVISSVEKLIEELKQNPNKQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00716_hypothetical_protein
MLALYICLFLFALGLALILFIYLKVEIIIELLPAENKSNDKSKKLLIQLKPLFRPFRPSLHYRFDSQLKPSVEDICKKAALFISDLQQYDESGYFSRIGIFDVVLAGHKKLQIEKLEWKTIIGLENAMDTAICTGGLWAIKGSFIGFISARSRLEEMKIEVQPDFSEIKLASHLDCIVKMRTVHIMIIVVRLLLHSFIKNDRAKRKRASFKGRRVLAFLKSMMGV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00717_putative_spore_protein_YtfJ
MELQDKKQNHPIESLMQTAMQSIKDMVDVNTVVGDPVETNDGTVIIPISQVACGFAAGGGEYELTATSKNTELPFAGGSGAGVSVRPMGFLVVRMNDVRLLSVTGNHLAERVIDLAPQIIDKMEGLFKKKNKFSEI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00718_Spore_maturation_protein_A
MVDLLNIVWFLLLASGIIVAALNGNIEVVSEAAISAAQGAVKICIDLVGIMALWLGIMKIAEKGGLIQALARLMKPLMLRLFPGIPPEHPALGAIILNLSANILGLGNAATPFGMRAMQEMQKLNTDSSEASTAMCTFLALNTSCITLIPATIIGVRVSLGSTNPTEIVGACIFATSIAMLMAVSLDYWFRTRSPWGGKG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00719_Spore_maturation_protein_B
VLLSILTLISQWAIPFLLLAVPLYGMLKKVPVYESFVEGAEQGFYTAVKIIPFLVGMMVAISVFRASGAMDYLSRAVAPLTALIGAPSEILPLAVMRPLSGSAVLGMSTELMKIYGPDSHIGRLASVMQGTTDTTFFVLTVYFGSVGIKKYRYALLTGLTADISGFLASVYICNLLFR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00720_Formate--tetrahydrofolate_ligase
MKTDVEIAQSAKMQPITEIAARIGIEPNELELYGPYKAKISLDIMKRIEDKPQGKLVLVTAISPTPAGEGKTTTTIGLGQALNKIGKKAIVALREPSLGPVFGIKGGATGGGYAQVVPMEDINLHFTGDIHAVTTAHNLLAALMDNHLHQGNELDIDSRQIVWRRVMDLNERVLRNVVLGLGGRINGVPRESGFDISVASEVMAALCLATDLMDLKERFAKIVVAYSQQGQAITAGDLKAAGSMALL
MKDAIKPNLVQTLENTPAFIHGGPFANIAHGANSIVATRLGVKLADYMVTEAGFGADLGAEKFFNIVCRYGQLVPDAVVLVASIRALKHHGGVKKDKLGEENLEALAQGMENLKKHLENIQKFGVPAVVALNEFPSDTSKEIDYVFSQCAAMQTAVSISRVWAQGGEGGIDLAEKLVLATEQGSQFKFLYDLNQPLKNKIDTICREIYGAGSVKYSAEANRMLQKYEESGFGDLPVCIAKTQYSLS
DNAQLLGRPTGFEVNIRQVKLSAGAGFVVALAGDIMTMPGLGKVPAAENIDIKPDGEIVGLF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00721_GTP_cyclohydrolase_1
MQKKVIDEAKIEEAVHMILEAIGEDPEREGLQNTPKRVARMYSEIFAGMNSNPREFLKVSFTEFHDELVLVKDIPLYSMCEHHLLPFYGKAHVAYIPRGGKVVGISKLTRVAEAYALRPQLQERLTSQIADCINESLKPFGVAVVIEAEHMCMTMRGVRKPGASTVTSAVRGIFETRPETRAEVFSLINQKS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00722_hypothetical_protein
VAKNKKESRKDESIYPDGIERFQAQKDEMIGAPVRKKKKQEKQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00723_Ribosomal_large_subunit_pseudouridine_synthase_B
LRLAKYLAESGISSRRQAEKLITQGKVKVNGKTISEPAFTVKPGDRVEFAGKIIEQTDKIYLLLHKPAGYISSLADPQGRPRVIDLLSAVNTRVFPVGRLDYDTEGLLLLSNDGEFSNLMTHPRYLIPKKYEAWVQGLVKPDTIRQLEQGVALEDGITAPSRVRLLSSKKGQSLLELEIHEGKKRQIKRMCLAVGHRVIKLKRTALAFLTLEGVPQGHFRFLTASEVERLIMLARQSGK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00724_Nicotinate-nucleotide--dimethylbenzimidazole_phosphoribosyltransferase
MNSLHLGKFAVLNNKIEQSLPQGINDYAVLIFAGDNGVSLENFSSYPPLTSRDIVISHLKGESPTAALLNRLRKQEIMVDVGLCHKVNDDKILQRNIARGSNNFLYNDALEKAQVEKGIEVGLSAWEDVAAEKFDIIGVGEIGIGNTLCAAGLAAIITGLELEYLVGSGSASDKVINKKIDILSKAINLRSLDPNDVIDLLARFGGLELAALTGFILAAVKNKKIIMLDGYVTAVAALLASRIDSGVPSFLIAPST
TGEPGHGPVLEQLGLKPVFDFAVNYGEGLVAAIALFLAEVLFQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00725_hypothetical_protein
LTKLQMRVRFDFMGKSKSGRLLWGSKNPEQLAEELRQHKASLIRNIPVQGIHIDDIDMSQDVYSIYDEITGKQICFAPVFITFTASSMEDAIRFTMKEEFRTVELIEPEEITLSRSEIEKLLLRISEELIDYRDYIEKRLDNWK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00726_phosphodiesterase
LNKITLDSIVEAVNELPALPHIVVKIMQLSEDPDSTVQDISNVLNQDQAMTARVLRLANSAFFGFPRRISTVTDAIVFLGFKTIRSIVLAVSVSNILDREIEGYALEHGELWRHSQCSAIAARMIARKCKFGSLDLAYTAALLHDIGKVILNDHMKEAYHEVVARVDENNISFMEAENEVFGFNHAQVGARVAEKWNLPPELVESIALHHSPQDALLNQRLTSIVHLADAICVSMGIGIGIDGMLYPLSDEA
LKLLDFDEIEVEKTISELVDVFADQQSF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00727_hypothetical_protein
LGKIAVFAGGLGSGKSELAINFALEEAKRAAGVVLADLDMVNPFFASREVGQVLERAGVKLFGPGGDLSFGDVPSIPAEIIALIQQENYLFIDLGGDEVGSLVMGYLSRFIKRWEEMEVFLVLNPYRPFSSELAGVSKVKQLIELAARVRITGIISNPNLVEETNLKTIIEGHRQVQEFADFLQLPVKFLCVEERFWDQLLPRYGSILKKLTLHLRPTWLQDT*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00728_2-oxoglutarate-acceptor_oxidoreductase_subunit_OorD
MARGRVIFLAERCKACGLCVEFCPKNILVFDDHTINVLGFHPVMLLQPDECTGCGICGLMCPDLVIQVERE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00729_2-oxoglutarate_oxidoreductase_subunit_KorA
MKKVLMKGNEALAEGALIAGCRGFFGYPITPSSEIAEYMARKLPKIGGAFIQAESELAAINMIYGGSSTGTRVMTASSGPGISLKQEGISFISEAELPCLIVNVSRGGPGLGGIQPSQADYFQATRGGGHGDYRIIVLAPSSSQEMMDLAILAFELADKYRTPVMIMAEGTLGNLMEPVIVREAVTEFLDKPWATTGCVGRKPNVINTLHLSQEELEGRNRHLTEKYKMISKNEKRAESFLLDDAEIVVVAF
GLLARIIKKSVMEARKKGVKAGLIRPVTLWPFPDEHIQAVSRTARTILSVEINMGQMVEDIRLAAGGKIPVEFYGRIGFTPNPEEITRQLLFIAEREGLL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00730_2-oxoglutarate_oxidoreductase_subunit_KorB
VKTVFKKPESLTDAKFHYCPGCSHGIIHRLIAECLDELKIREQTIGICPVGCSVLAYEYFNCDMLEAAHGRAPAIATAMKRLLPDRYLFTYQGDGDLASIGMGEIVHASLRGEKITVIFVNNTLYGMTGGQMAPTTLLGQVTTTSPYGRSKDWEGYPAKMAELLAQNEGSAYICRTAVNDPPNVVKTKRAIKKALQTQARGLGFSMVEVLSTCPTNWGLSPVEAMKWVEENMIPYYPLGEFKVKEE
*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00731_Pyruvate_synthase_subunit_PorC
MESEKQILFAGFGGQGVLSMSKFLAYAAMGAGKNVTWVPSYGAEMRGGTANCLVTIANEEISSPLTENPLMAVIMNKPSLERFENKVQPDGTLFVNSSMVDRKCRRDDLTVLEVPVNQLAEELDNLRGANMILLGAYLEKTRVVEVEDALEHFEQIFSGKRKEIIQKNRQAFLAGVEYARNNW*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00732_hypothetical_protein
LKRFVEKVEKFLIRAIILTVLIIVVVQGAMTKDTWRFYLSLGERLEGQTIEFPVNNLPADSRKNSLNLNGQALQSPHAEITLQVEKFSSLPHAIIMVNGEERAKFVNGEVALQLNAGDVVEIDASYYNFPLSFLVKDCSPNLAYPEKGKTFTSNQSIAMIGKIIVK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00733_HutP
VEIGSKIVSTAAIKMALSASRQEETRLKKELLENWEVKAVAVDYGGEFISSVGKIVERAVVAAKREGVIKDAHADEGAVAGAAREAIAQIMPKALGLNVGGKIGVARHKDHVSVAIFLGIGLLHLDEVAIGLGHRAVS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00734_Chorismate_mutase_AroH
MQLRGIRGATTVNEDRPEEILRATRELLQQMQKENAFTVEEVASALFTVTADIRSAFPAAAARAIGWDKVPLLCFQEIEVPDSLPRCIRVLLHVNTVKSQQEIKHIYLKAARSLRRDLNR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00735_(R)-stereoselective_amidase
MDKTLSLSICQMKTGKDKDANLKKAEKMIAAAALEGAEMVILPEVFNSPYQAELFPRYAESFPGPSTDFLAAAAHKHGLCVVGGTIIERDSQGKIYNSSFVFDERGELIGRHRKAHLFDINIPGRISFHESDTLAAGENITIVRYRSHLFALMICYDCRFPELARAAALEGAELLVIPAAFNTTTGPAHWQLLMRCRAVDNQLFVAAASPARNPSASYQAWGHSLVVDPWGDILQEAGSGEEIIHARLDF
SRLEQVRQELPLLRQRRKDLYRLDYKAPGNGIV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00736_hypothetical_protein
VKTDTVIRNEGMKVLIKHLGKVDAERFISLILREPFDYTKWQKDLWKDKTVKEISEAAMEYRRTDSI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00737_putative_ABC_transporter_permease_YknZ
MSLSESIRVALDSIRANLLRSILTTLGIMIGITAVIAVVAVGQGGQQSIMKEMEKFGSNLFQIRLDWRRDELPSGTEFTMQDIEIIKANVPELEYLLPCADTYSQVKAGNKAKSAQISGTEAGYACLHPLEISTGRFFSDSDCQSGRRVAVIDEELARELFPRSSALGKKILVGNQALLVCGLFKAESSPFAMGIKFVYIPTRVWLDIYPDGGISYIEGGTRNPAEVKTAMQSSIKILERRHRSENLYQGVDMEQ
QIQAVNKVTGVMTLVIGIIAGFSLLVGGIGVMNIMLVSVTERTREIGLRMALGARRRDILLQFLIEAIVLCLLGGITGMALGVGGAFLISALAQWPPLVSWATVLLAFAFSAAIGIIFGLLPANQAANLDPIEALRRD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00738_Macrolide_export_ATP-binding/permease_protein_MacB
MIKMERINKIYRPQSNPVHALQEVSLHIEGGDFVAVMGPSGSGKSTLMNVLGCLDTPSSGTYWLGGIEVSSMNSDQLASIRNRKIGFVFQNYNLLPRMTALRNVELPMLYAGVENKKRQARALDCIEQVGMLDRIHHRPAELSGGQCQRIAIARALVNSPDIILADEPTGNLDSASSLEIMHIFQSLHRNNTTIILVTHEAEIAAFARRVLHFRDGRLTADEILSPQHLKKTPLPKGGEDI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00739_Macrolide-specific_efflux_protein_MacA_precursor
MPAFNIRTICQTTIFKIALIIIAVALISGLNLWRNHKYSGTLVHTTKVEEKVLGEKVYASGRIELQEKQEAVAQESRILKQLYVKTGERVKAGQLLAVLDCPAEERSLADALAALASEELRYKELVNPSAEDLAIGQAEFEEAKITCDNKRKTWERKEALCAAGAISAQEMETARQELLVQEAAFLKAQKRYDILCHGPRAAERQAAEANLSKAQSAVQAAEEELARYTIKAEMNGVILNIEKRPGDMIKAG
DIFISIGQPERLQVKVGVSEADAARVKPGQKVLIEAAALPEKIFAGKVSEVAGLARTKEVNNTRQVEVAVGVSVEDKSGRLKPGYSVDLEIISVTAKKRLVIPYEALQENRGKKQVWIYDDGKARLQTVTIGVEGELQLEVTKGLKPGDLLILDPPKQLKNGDKVRRTTTPATFSKDEKHD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00740_Yip1_domain_protein
MQQMPDNPALSSPEALDMAANAAIIGGIAGALLTPLLFALIVALLLKLFNALAGDKVPYRKLFSVSVYAYLPLLLSSLIGLALGLTTPAENFGSISISLYLLFPPDTYTFPALLAAQINPFILWSLYLAALGGAILMKSEVKKVGSYIFLLWLIYALASSYFGAASISNLYG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00741_hypothetical_protein
MELESDSGTLSLGQKFSLIFTSPSRVFTELERNHSWLAALLVISLVSLAATLPLLSKIKHMAS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00742_hypothetical_protein
MAWRKLALLVLGVIMLCSLAACGNKVDSKAVREYADEITEKMLLAYNEDNYEEYIANTNSQFKTVVSEDKMKEGNEMIRGKIGDYVPGSKKFKDAVKTSQKEQKYLVVRYNAKFTDESEDVLVTMIFDDNEAHQVGGIFFNSPKLREQSEK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00743_putative_membrane_protein
MNYEMIIWAIVIVFILILFIIKLVTPQIVRREIFFGVRLPENLLGDLRLDDFKKAYLRNYLSLCGFYTLLFCVILAKFPNNAILLGGLIVFLLLSAWLYYLSHQRVMQFKQANEAHMLNRKQVVMVDTSFRSDKSKRPLPAKTWFIIPLFIIGFNLLAGYLAYDELPIVVPSHWNAQGEIDGGVFKTWGLVFLFPLVQIFITGFMFLLYQAVGWSKLQISTLNPADSRERNRIFRFRWGANIIFLNILILLVISLLNL
FVLQLIPVNVPVLLFVQPLLIILVLLDILFMAVWTGQGGSRLNTGSVTYCQDIDMALDDDKDWIGGLLYFNPRDPALFVEKRFGIAWGLNYGNIKAYILIASLIAAFFLLGSLMELLLFY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00744_HTH-type_transcriptional_repressor_YtrA
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00745_ABC-type_transport_system_involved_in_multi-copper_enzyme_maturation,_permease_component
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00746_ABC_transporter_ATP-binding_protein_YtrB
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00747_HTH-type_transcriptional_repressor_YtrA
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00748_Phospho-2-dehydro-3-deoxyheptonate_aldolase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00749_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00750_DNA-damage-inducible_protein_D
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00751_type_I_restriction-modification_system,_M_subunit
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00752_putative_type_I_restriction_enzymeP_M_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00753_putative_membrane_protein_YjcC
MFKPAKKALVDRTTKLPTLISVFPELDRLMTNIAVGMLYIDIAGFKEIETIYGRGICSKILYNSALLLQKIQIDFYGQRNILAACSIGGDDFAVFIESPHTMDAFEEAYLILKKQLEDGINAANQSLGLNQPLHLHMGYVDLQQIPDYHIESLVYKAIKEATYMAKQYDQACEHASWHSLKKMLEQRSIEVLYQPIVSLKSGDILGFEALSRGPGETALESPTIMFKDAERFRCLLELETLCHDKAVYNAANH
LGQRYLFINTSPAILSTGNYHKGLSKGLRRLYGINFSNVVLELTERNGIEDYQQFREVLLYYRRLGFMIAIDDAGAGYSSLQAIAELQPEFVKIDMSLVQGVDRNPTKKALLETFVDFSYKIGARIIGEGIETEEELVTLAAMGCDYGQGFLLARPGSLKQEIQPHIREKILLSSRNGHQFQSEPSKIADIAMFNNCIAPDMPVEEVIEIFNNNKSINGIVICQEDIPKGLIMRDRLFARLGSRYGYDLFIRRSVED
LMDRRPLILPWFTALEEAARQVAERLDQGITDYIVVTREQRYFGVVSTAKMLDTMAKLQIVQAKDANPLTGLPGNRCITRTISDALRSSRDISVLYFDLDNFKAFNDYYGFAQGDRALTMLSQLLVETLKSWGNSDDLVGHIGGDDFVIITTGDKADLIAANVIARFEEQIIELYDKSSLEQGYIVAADRRGQIKHYPIMSLSVAGVRNHANHSYANHLQLGEAAAELKKIAKAQQGSAYISDQHICD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00754_Phosphate-binding_protein_PstS_1_precursor
VLRKIRKMVVLVLALSMLLSVSIPAMGADAIAVKVDGKKIELDVAPVIEKSRTLIPIRAVVEELGGNVIFNASTQAISINTADQEVKLTLNSKQALVNGASQELEVPAKAVDGRTLVPLRFVGEALGADVAYDAASKTVNVKYFSNMSGTLKIGGSTTIQPLAQAAADKLMAGNQGLSITIAGGGSGEGIKGVHAGTFNIGNVSRDLEAADNVSYPGLISHRIGTDGIAVIVNPKNTVENLTKQQVIDIFT
GKIKNWKELGGKDAAIFVQTREAGSGTLTAFEELALLKKSKVLATATPHTSTGLIKEAVARNENAIGFISLGYMDNSVKAPKVEGVSALKSKALSKEWPYVRSLVIVSKGTPSGLTAKYVNYLLSPMGQQIVSQDYLPLKVVD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00755_Phosphate_transport_system_permease_protein_PstC
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VSGGIGNIPQPGDGMVFFLTPVLTLASAIVNKSEIMSVPTIEAALFACGLVLLVTCVGLSLCARLVEYLVKRGEGRA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00756_Phosphate_transport_system_permease_protein_PstA
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00757_Phosphate_import_ATP-binding_protein_PstB_3
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QEIFITPRMKLTSQYLQGMF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00758_hypothetical_protein
LRISRFFPLLQNSDLAVIRQVGVLLQLARSLDRSMSGIINDLKVDIRGDDVIIKLSVQIMRSWRFMIPCSILMSLRKYSIRIFLLCKGSRVSAFSVFEPYTAHISRGQRKEGNYRR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00759_putative_phosphatase_YcdX
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00760_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00761_hypothetical_protein
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LNCSSNELAEQAGQIKDDSGNIAAEITLISEEVNEQMAAVVRTRCVSQQLTGLVENVLTANNASLAVSQDIIHYSGRGLEAINQVKSETKRACEATINTRFTFDDLNRQFTQIHTVNRSLEDIARQTKLLSFNATIEAARAGEKGRSFNVVAEEISKLSQMSQDFSQQTAVLVTNVIKEFNHLKSTLDQMYLAVTQSADSVQNAGDVFDAIQEQVYKNNDVIGEVSQATDAMLKLIENVVKEIDIIYND
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00762_hypothetical_protein
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VSVQNDAGDKLISTGLYDFAVSITGISNLPKESLDAEDLTLDVENNNCKMRIIFQNIGITYGTGGDAGADYNMFILISLPAQR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00763_Bacitracin_export_permease_protein_BceB
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AVIVHSDYDFRGDFDVKTVLLELDDKSKPEFLIVDRRPYKLTNNSNTWTSLVLKDEAYEQLSKAEKPNSLRALIVDNQKDSQALTAELGRILPAYTWNSYYSEYMLNMEQRGMLMFIGGFLGLVILLATGSIIYFRQLNEAQKEELNYQILRNIGVSRNEIHASIRKQLLYVFLFPLMVGIAHSWVALMALANLLVTNLVISTIITIAVYTLIYLIYYQLTVNSYNRIVNSGNLRSI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00764_Bacitracin_export_permease_protein_BceB
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00765_Sensor_histidine_kinase_GraS
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00766_ribosomal-protein-alanine_N-acetyltransferase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00767_HTH-type_transcriptional_activator_TipA
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00776_Plasmid_stabilisation_system_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00780_DNA_polymerase_IV
MAELTNILHCDLDAFFASVEQLDNPSLRGKPVVVGGSIHSRGVVSTCSYEARNFGGLRIITESEALELLRPLPVSRIWGIGQKTERRLDKLGIKTIGDIQDLPPEWLEDKIGSAGRLFWELAHGIDKRAVEPEYERKSLGREETFPEDINDTAYLEKLIAQFAAELCRKLRQEALFAATITIKLRYSNFKAITRSKTINPCNSDIIVTQIASELLHHSYNNKHPLRLFGLSLGQLSSVTSLEQGILFEPQLNADYK
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MEKALNSRLTDDNKIVPLPMEQIVIREAQPSDAPAMARINVATWRDSYGKFLPRQLMEELSCSQKQSEIENFFARWEENQAVALVAENKSGEMMAFIMAGKNHRQDLRYMGEIYNLHIAPAFQSRGIGCCLVYRVSQVFRQRNWNTMMVWALAENPSRRFYEKLGGRIIAQDIDKYRGFTAPVIAYGWNKLPICF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00788_hypothetical_protein
MDAIVILIGKRMESAVKVQQILTDNGDIIRTRLGINHELSKDENAAGFIFLELCGDEKRVENLCDVLNAIGDVKAECLKMEIPGNGCGCSC*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00789_DNA_polymerase_IV
MAEPTNILHCDLDAFFASVEQLDNPSLRGKPVVVGGSIHSRGVASTCSYEARKFGIRSAMPTAQAYRLCPQAVFLPVNMPRYLEMSKQVFSILSRYSPIMEVISIDEAFLDISGCSGLYGSQEKIGCLIKEQVYSELGLTISVGISYNKFLAKLASDMDKPDGLRIITESEALELLRPLPVSRIWGIGQKTEQRLVRLGIKTIGDIQDLPPEWLEDKIGSAGRLFWELAHGIDKRVVEPEHERKSLGREETFPEDI
NDTVYLEKLIAQFAAELCRKLRQEELLAGSVTIKLRYSNFKTITRSKTITPCDSDIIVTQIAGELLHHFYNNKRPLRLFGLSLGHLSPAASLEQGSLFEPQLNADYKSIDRLMDEIRDRFGPGAIKRANLLPHKDIE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00790_hypothetical_protein
MPVKISELIDEMDMQMDEYHTYLNKETNIIVTVSNEGLSIAEESDEGDDFSQYPDWQKQNIMEALDIIVNWDKYVELPDKYDINEYNIMENFCFSLDNEKIMNELLYAIRGRGAFRRFKDKVQRLGIQQQWDKFREETFKEIAIEWCEYNNIPYI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00791_Cypemycin_methyltransferase
MGYYIDFNKITLEEFQRMLESTYLLPSQQIIAEDISERFQVLQSLGINNMQQLQQTLKNKDAVNRFSEKTSLPVDYLTVLRRMVNSYHPQPRIIKDYTVLSIEITDKLERMGIKTTPQLYDKVAAKADRNVLKKELDINDEEALLLARLADISRIRYVNPAFASLLLNSAYDTVIKIRNADYREMYEQLVKLNKDRRYYKGRINLKDMEFLINDTDYIPLDIEYEYDIMRIIKDNKINLMAMQESIRKPALYG
KSTAKFWDDEYISEQMLKLHLDPEVESASKTEETIAAETSFIINWTGMDEEKAVLDLGCGPGLYVKKFAETGAKVKGIDLSQRSIDYANRYIKAGHENIYFTRMNYLDIDYAESFDIATLIFYDFCALNSTEQNRLLDKIHRSLKSNGVFIFDVVTVNRESSESTSISIWESGFWSPDPYVEIMNTFIYEKPRTEGTQYTIIAEDGSIKIIRLYHRLFEMAEIQKLLNDHHFKVENIYNNLKGESLTENSETYGIIA
RKAKKL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00792_putative_permeases
MVIWLALVGMLCWGIAPIFAKLGLQNVNPATGLVLRTIIAVVLVSSWMGVSGGITQFRQITLHQSILIAVEAILATVIGDLAYFAAIKGGNVSIVSMIMAASPLVTMICAALFLGEPITAWKCLGAGYIIMGIFLLL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00793_Vancomycin_B-type_resistance_protein_VanW
LYIRYIRIGLISLLILLLGTINHAIYTDNLSDRPGINLDFLPYATSKERIIYSTPSASSSVTLLPWENDPDFQAAVAENEAMIQLANYCTVLQDPLPGEETNVHIAARLLKGTVVKSGQIFSQNEKIGPYSQDKGFQHGPVYIGYQLKTTVGGGVCKIASTLYNVTILSNLPVIERYAHSMPVPYVPLGQDATVCYGVKDFKFLNNTPYPILIWAESIENRLYIAFYGQTTPPRVKWHHEIVKEIKTYNIYRKNYA
VEAGKEKVILQGMDGAIVRSWLTIEDPQQGKIITKKLGKDYYNPMPSIVEKGMKKATSIPLH*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00794_Arginine_decarboxylase
MDQERTPLLDALKSYVEENVIPFHVPGHKQGRGNPELRKYIGSNVLKMDVNGMKELDYIGNPSGVIAEAQHLCAEAFGAEQAYFLVNGTSSGVQTMIMSACNPGNEIIIPRNAHKSTIGAIILSGAIPVYVQPQVNKMLGIATGVSAESIQKAIEEHPQAKSVFIINPSYYGIHSDLKSIVEISHQANMTVLADEAHGAHLYFHPEFSLNAIEAGADMSAVSMHKTGGSMTQSSVLLHQGDRISVDRVK
QVLQLSYTSSASYILMLSIDIARKQLATRGQLLLNKTLALARQVRQELNDIEGIYAFGKELVGSPGCADFDETKLGIHVRKLGLTGYQIERILRERYKIQIEFSDYNALAILSLGDRRENLRKLVAAFREIAGERESKDASKWFNIPFCPEMIVTPRDAFYSPKRIVPLELSRGEISGEMIMAYPPGIPVICMGERITQEIIEYIQLLREVGCELQGATDAGINHIKVLGSALPQASVSKSVSQPRSAYQEIPVYLSP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00795_D-alanyl-D-alanine_carboxypeptidase
LSHAAELLDYGFNRYTKKILLPQGAICGIVQVKNGSKDYVQVKTAEAVCSVVLKGQEKNLNSEKKLESAVKAPVKQGQKLGEVLVYNNQGLLRKVNLLASQDVPATNPSIISKDSLTAYGFPALLAIIAIILYLAHISRTQYKIGIIKKKQDGKYHNRR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00796_(R)-specific_enoyl-CoA_hydratase
MLGKTIDEINVGDSADFTKTVTGYDVYSFAGVTGDFNPAHIDNEFASETSFGKTIAHGILSIGFISNVLGTQLPGPGSITVGLECDFKKPVYIGDTITATVEVTKKDEARNRVWLRTYCTNQRGEIVVDGEAKMMPVTKKP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00797_(R)-specific_enoyl-CoA_hydratase
MLGKTVQEINVGDTASFNKSVTEYDVYSFAGITGDFNPAHINAVYASETSFGRIIAHGILSIGFISNVLGTQLPGPGSIYIHQECDFKKPVFIGDTITATVKVTKKDEAKNRVWLHTYCTNQRDEIVVDGEAIMMPTRKKPA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00798_RNA_polymerase_sigma_factor_CnrH
LEYSQLELVRGIKNKDSGAYEYMISKYSKPVYYLAHSILSALHSKEDIEECVADVFLDAWIKIAEFNEEQASFKTWLLILTKYKAFSYKRKRRRHLDNIVDIADIEARDNINLEKQVILRQEQEQVMDIINNFAETDREIFFRRFLLGEKINDLARAFNLSRAAVDNRLLRGRKAIKEGLKKGGFEI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00799_hypothetical_protein
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DQDMKLSAFGERLDKISKLTVEDLGKDGIVSSGTAPKLADIYATDEKGNKYKLEKPQGARTMPLTTFVTGAPKDSSLTVNLPALQACYKKKVGSFNINIPKDGKESLNREVDLFAQKAVVKSVTRISPTSAKLVMQLNTGDQKFVKIRSFCIHSKDIRKIESEFSGDRAIMTLEFNKDVNVADLEISWPEFEMNGNWTINLK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00800_Metal-tetracycline/H(+)_antiporter
LTEERIFNRSSATLFFSIFMVGIGFSIIMPILPYYAESMGASAFQLGLLMTVYALCQFIFAPFWGSYSDRVGRKPVLLVGMFGFTLTFYIFALANSLWVLFVARIAGGALSCATVPTAMAVMGDTSSPEKRGAGMGMVGASMGMGMIFGPAIGSGLAHISLAAPFVVAGSLSLLICFCILFLVKESLPVEDRVSEAQKIDRAPLLKGLKSPLAFLFTAMFLASMAEATNMGTFALFAEGKLGFGPTSMGLIFS
CAGLASVLVQGFVVGRSINKWGEEKTSGAGIILMAASFALFLQAKSLLELIIYMGIFSAGTGLIRPSISAATSKRTTGSQGTAMGVLQGYDSLGRVIGPSLGGYLLDMNLSYAYISAIFFSGLAFITLLFNRSRGENKEHEFS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00801_Gamma-glutamylputrescine_oxidoreductase
MAAKLEFPDNTNPYWIASTEETNYPMLNEDINVDVAIIGGGIVGISSAYLLNQAGLKTAVIEADRILNGTTGHTTAKITSQHGIIYSNIKQQMGEDSARQYAEANQSAIQHIAETISMNGIDCDFKWCPAFVYTCSDEYISELEEETQVALSLGIKASYLDSLPLPFAVKAAMRFDEQAQFHPLKYLKALAQKFTSEGGLIYENTEAVDIDHNDRPVVVTRKGNKVTAEKVIIASHFPFFDGGGLFFTKIYP
EKSYIVAAQIEEQFPEGMFISAEGPGRSLRSQPFKNREIVLFAGEHHRTGHGEDTNVHYQNLFNFAQENFNVQNVLYRWSTQDCMTIDGVPYVGQLTPQNPNLYVATGFGKWGMSNGTAASMILKDLISEGDNPWARVYSPSRFFLNLSSVKSFIIQNATVAKDLVAGKLEGLPGCSELDKGEAQTINFEGDRVGIYRDENDKLHMVDTTCTHLGCELLWNNAEKTWDCPCHGSRFSYKGEIV
EGPAIYQLHQANDEANIVEAKIFK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00802_Isoaspartyl_dipeptidase
VFKLLKNGHCFAPDDMGIKDILLAYDKICDIKDKILPADLWDVEVIDCQDCLVCPGIIDQHVHITGGGGEQGPISRIPEIMFSKIVEAGVTTVVGVLGFDSITRSIAGLLAKARGLEAEGITTYIYTGSYGSPTETLTGRVLTDIALLDKVIGVGEIAIADYRSNHPSLQDLRTLASEANAGGMLGAKAGVLHLHVGDGEEGLQSLFRLVEESDFPINMFVPTHINRNATLFDQGIEFLKKGGQIDLTAGE
TKGYSVAEALAMLVAQGINLEKVTVSSDGNGSASNESGISNIDQLFYDIRACILENNLQLSMVIKTVTLNPARILKLYPQKGCLLPGSDADILILRENDLSIYRLLARGQVVVEDQKAVKKGKYEN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00803_Cyanophycinase
LGHYKKGELVIIGGAEDKYGDSRILEEVARIIGGEDARVGIMTTATQHPEEVGEEYRNVFLRLGVRETDIISINSREEANLDDNVRRIRDVSGFFFTGGDQLRITSILGGTKVYEALLHSFYHGTPVIGTSAGASVMCSTMIVEGNSNDAARKCTLKMAPGLRLLEGVIIDQHFDQRGRLGRLLCGIAENPGILGIGIDEDTAIRVYPEEYFEVLGNNAVTVIDGRSIKYTNVSELEPDQILTITNASLHVLSK
GYGFDFKRRELISIN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00804_Cyanophycin_synthetase
MEVVSMRNYSGRNIYSHKSVVKMIVELGDWAEITTNEIAGFNDRLLSCFPGLGSHHCSPGYEGGFVQRLKKGTLVSHVTEHLALELQCILGYDVYFGKTRLIKEPDRYCIIYEYINESCAMEVGNAAAEIVLALARNEAIAIDKVLKRLQQISFDSKLGPSTQAIYDEARRRHIPVRQLGGDSLLQLGYGKQMRFIEASLPGSTSSIAVDLAKNKQMVKDLLKENNIPVPCGGIVDSEDGAVVLAEQIGYPI
VVKPWDANQGKGVTTNIKDENMLRKAYRLANSFAKRIIVEKYIRGKDYRILVVGNKVAAVAERRPPYVIGDGLHSISELLEEENKNPNRGIGHEKALTRIHLDSVAKEFLARSELNENSIPKIGELVYLRENGNLSTGGSARDCTRDIHPVNKELAIKAAKIIGLNVAGIDMVAENISEPLTLQNGAIIEVNAAPGLRMHLYPSKGEGRNVAADILDQMYPAGSMSSIPVISITGTNGKTTVARLIRHVLSLA
GQKVGMTCSSGTYIGKECIAEGDNTGPLSAHSILYNRDVEVAVLETARGGIIRRGLGYDLADVGVITNISGDHLGMDDINTLEDMAFVKSLVVEAIKPDGYAVLNADDGMTEHIVRKASCNLVLFSLNRDNILVEYHIKQDGMAVVIEEDLIVIYQNKIRDEIVSINEIPITFNGKAICNIENSLAAVASLSAFGLAKNVIRLGLMSFTPDPTANEGRFNLFDMGSFRVLLDYGHNCSAYQSVMQFINNM
NAARLVGIIGVPGDRLDKTIFDIGQISGQAFSKIYIKEDEDLRGRSAGEVAGILYNGAVSGGADRKNMEIVLSETEALKAAINNALTGDLIVMFYEKFDKAYELVESFIKGQTQPIPLLPDTDTCFIYQSIY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00805_Phospho-2-dehydro-3-deoxyheptonate_aldolase
LIIVMERNAAPEQLQVVKERLQDKGFKVHLSQGVERTIIGAIGDKTPALMELFETMPGVEKVVPVMQPFKMASREFQMEQSIIKVGNTEIGSGQVQIIAGPCAVESREKFLEIAKLVKESGATMLRGGAFKPRTSPYSFQGLEKEGLEILAEARQITGLPVVTEIMDTRLIEMVAGFADILQVGARNMQNFFLLRELGKINKPVLLKRGASATIEEWIMAAEYIISSGNNQVIMCERGIRTFENYTRNTLDL
SAVPLIKQLTHLPVMVDPSHGTGKWKLVEPMAMAAVAAGCDAIMVEVHQNPSEALSDGPQSLTPERFGKMVRKIRTIASSLGDNNY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00806_Arogenate_dehydrogenase
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KEALAGGDHDNILGLLHEAKAIRDKIPRVRRGLIPEFCDIICIVPDRPGIIGSLGQILGCEGVNIVDIEILRVREGDGGTIRLGVPRLEDAERAVIALQKQEIKAWTR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00807_3-phosphoshikimate_1-carboxyvinyltransferase_1
MRRINSASKPLKGEVSVDADKSISHRAVIFSALAQGKSVIKNFLPASDTLSSCSCLGQLGIKIAARDSEMQVYGRGLTGFSEPHTVLDCGNSGTTMRLMAGLLSGQLFLSILNGDESLNQRPMKRIIEPLGFMGARIQARENGNYPPLVIIGNRLSGLRYQLPVASAQVKSALMLAALNADSETLLSEPQKSRDHSERMLTAMGADIAVNGLEIRLKPGKELQATEFLVPGDISSAAFFMVAASIIPGSELLI
RHVGVNPSRAGIIEILKEMGARIKLENERIISGEPVADLIVSHSRLQAVNLDAAIIPRLIDEIPILAVAMALAEGESTVKGAAELRVKETDRIAAISSELAKMGVDIREQPDGFVIKGKPDSLQGARVNSQGDHRIAMSLAVAALASKRESVIEDSEVVNISFPRFWDLLNTVTS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00808_Cytidylate_kinase
MKIAIDGPAGAGKSTVAKTLSQLMSYIYIDTGAMYRSLTWKALQTGTNLDDEKALYELATNTNIHFQKDDSQQKVFCDSFDISEEIRSPQVSSYVSKLASYPLIRKLMVQRQQEMACNHSVVMDGRDIGECVLPDADYKFFLTASIAERARRRLEEMKSQGYEQQLEAIIDGIRKRDDDDARREVGALKVLPDSIVIDTSNMTIEQVIEKILSIIRED*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00809_1-acyl-sn-glycerol-3-phosphate_acyltransferase
MLYSFLRAIFRVLFFLFGLKSEGLHNIAEKGPLILAANHVSYWDAIVVATAIKRPINFMGKAELFDYPLLGYFIKRLNAFPVRRGTADRNAIKKALLLLEEGKILGIFPEGMRNLKGEDLKAQAGVAMIALKSGVPVVPVACIGTNRILPLGWFRPLVVRLGDPIGLEEYQGQKVNSAALEKLSGEIMTKINLLLEK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00810_hypothetical_protein
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LDGVSKIGITAGASTPDWIIKEVLDRMTLYEEEKMLDEKQETSMETMQETSVETMQETSLESLEPEVKEETPANEESFAKLEAEMADFTTPNKGDVIKGKVIQVLDDEVMVDVGGKSEGIIPLREMSLQDIDSAKELVEVGDEIEVMVLKWDDDGTILLSKKKVDAKILLDELEESFKEGKVITGTVTGSVKGGLLVDVGIVAFLPASHVEDGYVKNLDEYINRELSFKIIEFNRNKRRGSQVVLSRKEL
VAEEKAKQKKQFWEEIEEGQVRKGRIKRLVDYGAFIDLGGYEGLLHVSEIAHTRIDQPSDVLQEGEEIDVYILALDREKERVSLSRKKLLKSPWEIVMEKFQEGDIIEGTVVRIAPFGAFVEIEAGVDGLVHISQLANHRVEKPEDVVQVNEKIKIKILSIDPEEKRIGLSLKEALNEMENQEVQNYMEKQEENE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00811_putative_regulatory_protein,_FmdB_family
MPIFDFECQDCGKSFDKMLSYIDKDKVRCPECDSSNIKQLLSSFNTTRGGTKANKLPSPDSCGGCSNSGCPMRF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00812_putative_molybdenum_cofactor_guanylyltransferase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00813_Isopentenyl-diphosphate_delta-isomerase
LSLDEIDLSLNFLGKELQYPLMVNALTGGTNQSLAINRALARMALKYSLPMAVGSQSIALESPEAGPSFSIVRDINPNGIILANMNAATRVEEALEAVRMISADALQLHFNVVQELAMAEGDRNFKGIVDNVRQIVHECPVPVIAKEVGFGFSREAAQCLWEAGIEIFDCGGQGGTNFIVIEDQRGGNFAGELDTWGIPTAISLMEILQLPVKQVIASGGIRSALDATKALALGADLVGMAAPLLKAFVS
GGLEALDQSLSGFFFRLKSVFLMCGARNLQEIRRKPLIILGETAEYLRLRGIDPSCWARR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00814_putative_membrane_protein
MANFPLGLIALVVVSILIYFGVAHRVLDRLRLSDRAALGLIALIIVGSFIDIPLSTRVTINLGGIIAVGLALYVIIGAGTAFEKMRAVLAAVVTALALFLAARFLGAEPEKIFIDPIYIYPLVAGVVGYLAGRSRRGAFFAAVMGVLALDVGQYLYLTRSGIRGVVHVGGAGAFDSLILAGIIAVLLAELIGETLERVQGGPETEDRPQELVKNLQEPEAAHKPLPTEDYEKNGKNEKSSGENGGAEDA*
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DKKTPGLSNGIFIGKGDYNQDLSPRAMLVEVGAHTNKKEDAEKGISLFAEALPTVLGYSNNPVNQAPVAKKPLSGNENQAAGTTILMIVIVVAAAVGGYYLLNRGTNK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00816_hypothetical_protein
MERYLVAIVVGIAAGFLDRLIMLRSDYRFYPTYPHGYLTHLALGFIAAGLGAVAIPAIAKPDYVAVTFLALAAQQFREIRSMERETLSKLEESKLIPRGPDYIEGIARVFEARNYLVILTAMASSAVAYWWRWEYAVIAALLCIVFSTKLMGGSYIGEIAQVEKGEIIFDGSILKVNDVIIMNVGLTETRKKIMREGMGIIIKPRDDNARLTLDAPGQRMAIIHDVVSILGSKVDVSETELRPLARKQADKGYLAL
FLVANEPDQEYFMEIVKRVPVIESTRGTALKSFFGRKAAD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00817_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00818_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00819_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00820_division_inhibitor_protein
MANNYMKRKDRIILTAVEIIDQLGVQGLTIREIASRQEISEAAIYRHFANKTEILLGTIDYFSSYDALLFRTIENQNMKAWEGITFLFASYMEYYENYPAISAVNFTQEAFQLEPEARQRMENVIDDRLRFINHLVIKGQKEGEFTRDICSESMVDVIFGTIQFIILRWRAKNYNFALKEHVLSTLSILIEAFSTVKLENRFAWGGVFNQEVSASAFDSVLTRPGLFLEKGKDQVNEKSEG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00821_Chemotaxis_protein_CheY
LKSVLIVDDAMFMRYTLRKILEKNGFLVVGEAENGLLGAQKYGELLPDIVTMDITMPELNGIGAVQLIKQINPQANIVMISAMGQQHLVREAILAGASNFLVKPFSEERVVEVLNSI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00822_Chemotaxis_protein_CheA
MDKSLSKEPMLEMFIFENLQLLEQLEQTILAHEKERCLENAVINEIFRIMHTIKGAAAMMMYDGISSLAHAIEDLFFYIREFHPDEMDYSKICDIVLEGIDFIKNEIGKLEQDQEADGDSSPFVENIGQYLLQIKEASRNSKLINEAAARPAGHRKKFYISTSKSPPTESIKRYHALIYFTPGCEMENIRAFNLVHKLKDQAEQIDYIPADIIENNDSVEFIRENGFAVIFSTHLQQEAINELFMKEAFIDSLDLRV
MEDEEWEIEQLRARNQIVLEEEPSVRNNEVREIGANLHSGSTRQSLISVNVDKLDRLMDMVGELVISETMVAFNPDLRTAAKLDNFHKATRQHRKIINELQDIVMSIRMVPLSMTFQKMNRLVRDMSKKLKKNVELVIIGEETEVDKNIIEHLSDPIMHLIRNAIDHGVESPEKRASLGKSPAARVYLEAKNEGGDVYIIIRDDGAGLNKEKILERARARGLIQKPDSNLSDGEIYSTILLPGFSTCEEISEF
SGRGVGMDVVLKNIEEVGGTVLVDSTPGQGTTISLKIPLTLAIINGMRVKVGNSIYILPITSIKESFKAKPDNIIVDPDGNEMLMVRGECYPVLRLHQKFQLKSALKKIAEGIIVIVQNDSGSICLFVDALLGEQQVVVKALPKFIGKIAGISACTLLGDGRACLIIDVANLINPSKG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00823_Chemotaxis_protein_CheW
VSEILDEAVLQEEDTQKGKFLTFLVGKEEYGIEIKYVTEIIGGIQAITEIPDVPEYVKGIINLRGKIIPVMDVNLRFNKEARDYNDRTCIIVIDIDELSVGLIVDNVAEVISIADADIVPPPDVRSGFHNRYIKGIGKIGSEVKLILDCQRLLSTEELENLDYIN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00824_Dipeptide_chemoreceptor_protein
MAGKKSNMDSSEEKNKEEVIGKGSVQKQDMGRALPERTTGELQEEINLLVEAIKAGRLDVRANVGKASGLEKECLLGINQMLDAVIGPLNVAADYVERISRGDIPPIITDSYNGDFNTIKNNLNTCIEAVNLLIADANLLARAAVEGRLDTRADAARHHGDFRAIVEGVNHTLDAVIGPLNVAADYVERISRGDIPPIITDSYNGDFNTIKNNLNTCIEAVNLLIADANLLARAAVEGRLDTRADAAR
HHGDFRAIVEGVNHTLDAVIGPLNVAADYVERISRGDIPPMITDSYNGDFNAIKNNLNTCIEAVNLLIADANLLARAAVEGRLDTRADAARHHGDFRAIVEGVNHTLDAVIGPMKEVSAVMREMEQGHLGVNVRGDYKGDFKLVKDTLNSTIEALKNYVNEISIVLTQMARNNLDVEISQDFRGDFSAIKDSLNYIITSWNETMSGINMASDQVANGSAQVARSSQFLAQGAAEQSSAIEQLTASIT
QIAAQTNQNAAYANQANDLALTARDNAIKGNEEMKNMLEAMEAINESSNNISKIIKVIDEIAFQTNILALNAAVEAARAGQHGKGFAVVAEEVRNLAARSASAARETTDMIEGSIKKTEAGTRIANETAEALGKIVEGVTRMAALVGDITVASNDQATGISQIDKGVEQISQVVQSNAATAEESASAAEELSSQAVLMKDEVGKFTLKKRNERAVQLSDLSPEMLALVKELLQKQKIMQAVDSRETRAI
ETASRGNSRLQISLSDNEFDKY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00825_Chemotaxis_protein_methyltransferase
MINLSQQEFHWLADYVYNYCGIDLKQKKHLIESRLSNHLLETGFSSFAGYYKHLLQDASGESITAMLDRITTNHTYFMRESQHFDFFRDRVLPELLSKVKNRDLRIWSAGCSSGEEAYTLAMVISDFFSSKQAAWDTRILATDISARALQKAKEAVYTEEQIEALPAGWKLWYFQEINRNSFRIREKIKRQVIFRRFNLMEIPFPFKQGFQVIFCRNVLIYFDSSTRSKLIQRFYDSIVDGGYFFIGQAESINW
DNNRFSYVMPAVYRKE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00826_Chemotaxis_response_regulator_protein-glutamate_methylesterase
LRLRRIKTLIVDDSLLFRETLARGISRDPAIEVVATAADAFMARDMIIKHKPDVMTLDVEMPRMSGIEFLRRLMPQYPLPVVMISALSESVFDALNAGAIDFVAKPDMNPNRDLDAFFSELILKIKIASVARLGRRAEVSKLLPTGKSQTDQGWVIAIGASTGGPEAIYQIVKNFNQDTPGAVIVQHMPAGFTRMYAERLNDTCLVDVKEAQNYDRVKMGQVLIAPGEYQMRLKQKAGDYMVECHP
GEKVNGHCPAVDVLFDSVAQSAGARAVGVILTGMGSDGARGLLAMRKAGARTIGQDEASCVVYGMPKVAYELGAVEKQYSLNYIGQALYKLINQL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00827_Sensory/regulatory_protein_RpfC
MLEADKREYAKTIARIQEERDNLQIILESIGDGIITTDMDGYISMMNPVAEKLTGWSREEALGKHLDEVFRIIDNTSKQPLENPFDNVFTRGSSQGLLRNSALLDRDGKTRFASACASPIIDKNQKMAGMVVVFRDIDRIKKNEDEIRCLSWVLQLSSNAIIIFDTQGIIQFINSRFTQLTGYEACEVLNRNLSLINNLPLDVEKIFARLRAGEEWHDEVFFHKRQLEPCWWSIYCTAVRDEEDKITSYCSIIQ
DISEHKLAEENLKKAKEAAEVANRAKAEFLANMSHEIRTPLNAIIGMTSLSLLSNPEPDQKENLEIIKMAGDTLLSIIDNILDFSKIEAGKLTIEKIDFNLHELVEKNITIHKARAQEKGLLLLYCIDPAIPVQVNGDPYRLQQVFNNLIGNAIKFTDQGEVEIRLNLLDILEDRIVLQASVADTGRGITAGQQEKMFESFYQGDSSISRTYGGTGLGLNISKKIVEMMQGKIWLESDIESGSTFYFTVELAIPEPS
KLETESRQLINQKADAEKIPFLSILVVEDNEVNQMVLSNLLRAQGHQVEVAANGVEALELLDKNNYDLVFMDILMPVMDGLETTRRIREQEEITGFHIPIVAITAHAIYGDREKFLAAGMDDYLAKPVQMEELNQAISKMIKKARSTTTTNHMDIEPLSPKDLFFKVDSSFLEQVEKAILKIDLALLSLDLQQVEKQAHEIKELAYQMDEITIKNLAFKIELGARKGDLDQCWSLFRKLQEIYAYLSSLG
S*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00828_Sensory/regulatory_protein_RpfC
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00829_putative_FeS-containing_Cyanobacterial-specific_oxidoreductase
MDNGFQDSAAEEKILTAPIKGIMENSIAGEMDIEPGDILYSINGHEINDILDYEFYSQEDNLLVEIEKANSGELWVLEIEKEYDEELGLLFDGLIFDKMKLCQNRCLFCFVDQLPRKMRKTLYVKDDDYRYSFLLGNFISLTNLSEKDWHKILSMRLSPLYVSIHCMQPELRARLFNNPRAANIKSELKRLQEAGIEVHTQIVLCPGINDAEVLQHSINELAQFFPTVASVGVVPVGLSGHRQGLPPLRGFT
VDEAIKTIELVDSFQDEFRPRLRRGFVYAADEFYLKAGRNFPPALYYDDYCQVENGIGLARIFVDDFAEIEASLPLVVERQEVYLITGVSAGPVLEKVVSRLNRIEGLELKIIRVTNRFFGGGVTVTGLLTGADIIATLSRDFAGKKLIIPEIVFKEGQDIMLDDTSREELEEKTGAEIITVDGSARSLVRTVLSLTEV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00830_GTP-binding_protein_EngA
MKPVVAIVGRPNVGKSTLFNRLAGARKAIVEDIPGVTRDRLYDSSDWNGRDFIIIDTGGIRFNEGDIFAREIKLQAELAIEEADVIILVLDSREGITAEDEQVANLLRKSNKPVVLAANKVEEFKKQLDYYEFYKLGLGDPIPVSAMHGYNTNELLDAVISYFKPAREYEEEGDAIKIAIVGRPNVGKSSLVNALLGEERVIVSDVPGTTRDAIDTPFQYKGQNYLLIDTAGMRRKSRIKETTERYSVIRALKAI
ERADVVLIMLDATEGVAEQDKKIAGYVHEQSRANIIVVNKWDLVEKDGQTMNRFDKDIREELKFLSYSPIMYVSALTKKRIFQVLEIVNFVAEQHHRRVNTAELNQVINEAMMLNPLPGGGGKRIKILYSTQVRVAPPTFVFFSNKPEMVHFSYLRYLENALRKNFGFEGTPIRLLLRQNTEHDN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00831_G3P_acyltransferase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00832_Glycerol-3-phosphate_dehydrogenase_[NAD(P)+]
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CSSRHSRNRQAGILVGQGYSLEETLMQIGMVVEGAHTIRVVHRLATQLKIDMPICTACYNVLYANRKARDEVDDLMRRQKKHEIEEIVKRKKEW*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00833_Stage_IV_sporulation_protein_A
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WLRQNMETSIREILNAIRKVRDIDRAVEQLSDMENVSYVSLEEMNLGTGTARIEVNVPEELFYQALSEVSGFGVEGTHDIMRIMKDLSVAKREFDKIASALDEVKESGYGVVTPRLEEMFLEEPELIRQGSRFGVKLKAKAPSLHIIRADITTEITPIIGTEKQCEELVRYMLDEFEEDPGKIWESNIFGKSLHDLVREGIQNKLHRMPENAQHKLQDTLQRIVNEGSGGLICIII*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00834_Cyclic_di-GMP_phosphodiesterase_response_regulator_RpfG
MPKDRPAMEFTNNSKEIKLESNNGGLYILENINGLILCCNSSGSLTFANKKAREMMGIKVEEVPELNIFDLVTPQEHNLLEKKVFTALQEHVSLSFESCILDAKKIPRLHRLNISVPVDGKKDEDVVLILLEDLSERRQMEEAFVESEHRLVHIIDFLPDATLAIDCNGRVITWNRAAEEMTGVRAREIIGKGNYEYALPFYGYRRPLLLDQVLSTSTEWEQSYTLLEKKARSLRAENFCPAVGESGAYLRLT
AAPLIDADGKRIGAIESIQNVTRKKRAEENTAIQRDLGISMIAINGMEEALSICLNSALKISGMHAGAIFLVDNGGDKLTLSVHRGLSPGFVEQVKTCAFNTNSSLYAQALYSSADKLTAYFGDIVLQEGLKSIAIIPIYHKDKMLASLKLSSRIISVVPEHSRQAIENVANYIGSIIARLQVEEELRESEERYRQLVEVSPDAIAVHINGRIVFINHAGARLLGAEKVEDILGRRIIEFIHPESRQIYIDLMEPLAANGV
FPLTEMKVILINGKIIYTEVTGAALVFEGTPAVQIIVRDITVRKKAQYDLSREVYKLRVLYDLAVAMSSSQSMDETLKLTADKSRELFAADCIFIFLIDESKNEAIPHTLSGNKLTDWLEVRIPYGKGLIGMVAASESGYILEDYSSTLFTHIYDELVLQEELLCGLAAPIITGNSRLGVLVVGHRKRTVLTEANLDTLTLIANLLAVEITRDRAEESLQKSLEHLKTVFECTVNALSITAEKKDPYTAGHQRRV
ASLACAIAQEMKLPQYYIDNVRTASILHDIGKLQIPTDILTKPGGLTEIERLLVKTHPQAGYEIVKTIPFAQAISTTLLQHHERMDGSGYPQGLSGEEILLEARILAVADVVEAMASHRPYGLH*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00835_Cyclic_di-GMP_phosphodiesterase_response_regulator_RpfG
MINRALINNAKKFLNILASIEDGYYEVDKAGNLVFFNQSLQDMLGYSKEELLGMNYKHYMTNEDAKKVFKTYNLVFRTGEAAKGFDWQLISKSGKKLYVETSVSPIFSADGEITGFLGIIRDISERKRAEQQIRESERRLAGIISFLPDATFVVDISGKVIIWNQAAEEMTGIKAEDIIGKDDYEYSIPFYGYKKPMLVDIVMEESTYAHNLIADVEKKGHTLIKEVFFPAVGDSGLYCWAATAPLFDSGGNQ
TGAIISLRDISRRKQTENALQESLKKAQTILRSTVNALAITTEKRDLYTAGHQRRVAQLATAIAREMQFPDNITRGIYMAATLHDIGKMQISSDILSKPGELNDIETLLVRTHTQVGYEIVKTIPFELPVADMVIQHHERMDGSGYPQGLAGSQIMLEARILAVADVVEAMSSHRPYRPALGINLAMEEIRRHRGILYDPDVVDACLRLFARGQIDFL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00836_Homoserine_dehydrogenase
MIGVALLGCGTVGSGVIKLLQKNSEIIDKRIGESIVIKKVLERDTEKCRLLGIKDEAITQDIQEILDDQEIAIVVELIGGIEPAFSYIMAALARGKHVVTANKDLIAIKGKDLFDQAKEKRVDFYFEASVAGGIPIVYPMKQSLAANQIQEVIGILNGTTNYILSKMSREGRDFNEVLAEAQQLGYAESDPSADVDGLDAARKIAILSSIAFNSRVTLDDVYVEGIRSITADDIQYAKELGYVIKLLAIAKENPQQKI
EVRVHPAFLPKTHPMAGVNDVFNAVFLRGDAVGEIMHYGRGAGQMPTASAVFGDIIEIARNILYHSNARIGCSCYDNKAIMDIKELEGEYYIRMIVEDRPGVLAGIAAVFGNNNVSIATVLQKTSKQCWAELILITHRVREMHLRDSLTLLKGLSIVGEIKNVIRLEGTDREAD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00837_Homoserine_kinase
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SGSGSSIIAFCQQEEKRVAQAMQDAFAVSGVQSQLMILAADPDGVKVLR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00838_Aspartokinase
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VSGIAHDLNCARFALFDVPDQPGIAKTLFKTLAAESINVDIIIQSAMRDGRNDIAFTIEENDLSRAVPVVKELVESICASGMAYGKDVAKVSIVGAGMQSNIGVAAAMFEALADEGINIHMISTSEIRVSCVIDECHIKTAVKALHRKFELDKIE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00839_Transposase
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HLVKQAVVHADETVTQVLKEEGKKPSSESRMWVYCSGKTETKPIVLFEYQPTRSGEHARRFLEGFHGYLITDGYKGYDKVPNVTRCGCWSHLRRRYQEAMPKNGVIEGSNAAIGFDYCNQLFSIEKELEQLPPDGRKLQRQGRSKPVLDAYWSWIETVNVLMGSKLGEAITYSVNQRNSLSTFLEDGRIELSNNRAENAIRPFVVGRKGWLFSDTTKGAKASAVVYSIVETAKANNLNIYMYLVYL
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00841_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00842_PD-(D/E)XK_nuclease_family_transposase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00843_hypothetical_protein
VGQAIIAVLGLILAKLILDVVKENISSKKTSSPGPIIDLGDTWVDLSEISSRQRESLLSKEEILLFQMLDSILVNSNYQVFPKVRLADLLTPNPNIPNRAEYKRRLRERVVDLLIVEKQNLKPLLLILTKGWQNKKAEPDQLSIQSIETAGLRYLIIKLDDLPSSSSLLKKLREAGLNI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00844_Threonine_synthase
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KATGILGEAESINIVVPTGNFGNILAAYYAKQMGLPIKRLICASNANNILTDFYQTGIYDRQRKFEKTSSPSMDILISSNLERLLYELTGGNSARVAVWMEELNKRGRYEITADVTRTNAVAGIFIWDVFEATCHRCLGD [illegible]
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00845_cofactor-independent_phosphoglycerate_mutase
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KLGISAGLKPVSVAGATGGIVTNFAGKARAALNELNDYDFVYLHIEAPDEAGH [illegible]
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00852_HTH-type_transcriptional_repressor_NsrR
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00853_Hydroxylamine_reductase
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ILLSLLYLGIKNIRLGPSLPAFVSPGVLQFLVDNFGIKPISSAEEDLRAILAG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00854_light-independent_protochlorophyllide_reductase_subunit_B
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00855_putative_ABC_transporter_ATP-binding_protein_YbhF
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00858_Sensor_histidine_kinase_DpiB
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00862_Ribosomal_large_subunit_pseudouridine_synthase_D
MPRTEILLVDEEMEGERLDAFVAEQLDELSRSLVKTLIENGEIRVDGKQQKPSYRLKAGEEIIVEIPAVRELKLKAQDIPLSFIYQDKDIAVIDKPKGMVVHPAHGNWENTLVNALLFHLKDLSGINGELRPGIVHRLDKDTSGVMVVAKNDMAHRQLAAQIKDHSINREYITLVHGIIKENLGSIEAPIGRSKLDRKKMAVIAGGRAAVSHYQVLDRLGNYTLLKVKLLTGRTHQIRVHFAYIKHPVVG
DPLYGSGKKQLGLDTQALHAHLLGFKHPSSGEYREFRSEVPPYFECILSDLRNKR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00863_Bifunctional_protein_PyrR
LVLREKHAIMDEMGMKRALTRIAHEIIERNKGVKNVAIIGIRRRGGPLAQRLALRIEDIEGIKIPVGILDITLYRDDLTTLAQQPQVHRTEVNFDINGKRLVLVDDVLYTGRTIRAALDALIDLGRPECIQLAVLIDRGHRELPIKADFIGKNVPTSRQENIEVYVKELDGKDGAVIQEIIDS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00865_Aspartate_carbamoyltransferase
LKLDRKDLLGLRDLSREETELILNTAIPMKDVIGRDIKKVPTLRGKAMVTVFYENSTRTRTSFELAGKYLSADTVNLSVSTSSVQKGESLRDTIKTIEVMGFDLIVMRHAMSGTPHYVARNTRMRVINAGDGANEHPTQALLDMYTIKEKKGTLEGLKVAIVGDILHSRVARSNIYGLSKFGCDIRVVGPATLMPPGVEKLGVKSYYSLDEAIDGVDVINILRIQRERQASGLFPSLDEYAQLYMLSPQT
LARAKDDVLVLHPGPINRGVEISSELADSTQALINEQVTNGVAIRMALLFLMMGGGRDEITY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00866_Dihydroorotase
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LKVSCEVTPHHLTLSDEIIDGYDADTKVNPPLRSEEHLLALREALLDGTVDCIATDHAPHHFEAKDCEYELAACGISGLETAIAVIMDKLVRPGLLDIKDMVKLFTTGPARVMGLDKGTLGEGKPADITIIDPEMLKTVDPRTFKSKGKNTPFKGMELQGWPCMTLVNGVLIAQNGEILLKKQF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00867_Carbamoyl-phosphate_synthase_small_chain
VNGYLVLENGRYFRGKLLNDCRMAGGEVVFSTAMISYQDIITDPSYYGQIVVMTYPLVGNVGFNEKSFASRAAMVKGLVLREATDFPSHYEMETDLISFLNKSEIPVLTGVDTRALTRVIRHEGSMGGLIIDNLDDKEWMMEKARLAAEELQGDLVRFVSRKNIMKFGNGTKKIVLLDLGTKKGVIDSLVRRDCEVIAVPANTGAREILRLHPDGILVSDGPGDPGAIGYAIDTCRELLGKVALLGV
GLGHQILALAMGASILRLPYGHRGSNHPVKNLENNRVYITTQNHGFSLEESSLSGTGIEVTMRSLNDGSIEGIRHQEMPVFSLQFDPEGYPGFSETGFFYDDFIRQIG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00868_Carbamoyl-phosphate_synthase_large_chain
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TLSDEEYQMLRASSLKIIRHLKIVGGCNVQYALDPFSKKYYVIEVNPRVSRSSALASKATGYPIARVTTKLAIGYMLDEIPNAVTGKTTACFEPAIDYVVLKVPRWPFDKFVFGDRKLGTQMKATGEVMAIDRSYEAAFLKSIRSLEIGLNGLRLPVLQEMKDEELRQRLEHADDERTFIIAEALSRGFSLDEIWEITRIDKYFLKKMKNIIDFARVLEEKELDYELLREAKKIGFSDFEIAAIKGQTEEEMRKLR
KKAGILPTYKLVDTCAAEFDADTPYFYSCYEEENEAWHDPNTRKILVIGAGPIRIGQGVEFDYCSVHCVWALRDAGIKAIIVNNNPETVSTDFDTSDRLYFEPLVYEDVMNIIDEEQPEGVIIQFGGQTAINLAAALSRAGVKILGTSNDNIDRAEDRERFDLMVEKLGIPRPPGKTVFSVEEAVKAAEKIGYPVLLRPSYVLGGRAMEIVYNVDELRQYMQTAVNVNREHPVLVDKYLLGKEIEVDAVC
DGKQVLIPGIMQHIERAGVHSGDSMAVFPAHDLSPAIRDKVVDYTLRLARELEVKGLINIQFVEFEDELYVLEVNPRSSRTVPFISKVTGIPLVKLGTEIMLGKSLEELAYKGGLQPEPDFYAIKVPVFSFSKLEQVDITLGPEMKSTGEVLGIDRSLKTAIYKGLLEAGVEISHKGTIVATIADKDKDEAIPILHELSQLGFKLVATEGTAMALRNNGIAVETVKKIKEGSPNIVDLIRQGKVDFVVNTLTHG
RMPFTDGFQIRRAAVELNVPCLTSLDTLKVVKAVITEGEKTAAMEIMSLQEYVKMTGVQS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00869_hypothetical_protein
MDASPFTLRVRLVFHPEGVTNKVASHGREIGAVPLEPRDKPQVLPMRRLRAVYLYKPMNIMTFGKRIKMIIAYDCTPVILTYSCRDMISIAAVFSPSVITALTTFKVSREVRHGTFNSTAARRI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00870_Dihydroorotate_oxidase_B,_electron_transfer_subunit
MPSLEKARIISNSKQYHNLYIMEIEAPKTAKQCKPGQFLHIRSNPGLDPLLRRPLSLYDVDKKAAKISLLYKVVGKGTALLADMLPGENLDIMGPLGRGFSLPESAKKCLLVGGGVGMAPLLYLARELRRGGNELLVLYGVGNEKELLALERLEAIGSQVQIATIDGSRGLKGPLIPPLFSEILSNERIEFIYSCGPESMMKLWQEWAGINHIAGEVSLEEYMACGVGACLGCARKARPDNEFYVKICKDG
PVFRLDELELE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00871_Dihydroorotate_dehydrogenase_B_(NAD(+)),_catalytic_subunit
LDLTVNLGGIKLKNPVAVASGTFGYGLEYADFIEPEKIGAVIVKGTTLHPRPGNPGPRIYETPAGMLNAIGLENPGIEVFLREYLPRLRERQVTVISNIAGNSIEEYALMASLLQGQEGIAGIELNISCPNVKQGGIQFGTDPETVRQVVAAVKKETSLPVIPKLSPNVTDIAAIALAAAEGGADALSMINTLGGMAIDINRRKPVLGNVFGGLSGPAIKPVALKMIYQVYREVDLPILGGGGIVNHIDALEFF
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00873_Orotate_phosphoribosyltransferase
MLSKEEATRIFIDSGALMEGHFRLTSGRHSNQYMQCAQVLQYPKYTEQLAAHIAEKFAADNIEIVVGPAMGGIIVAYEVARQLGIPAIFTERQEGSMVLRRGFELRPGQRVLVVEDVVTTGGSVWEVIEIVQKAGAELAGVAVLVDRSNGEVDFKVKQEAVLSMDIKSFAASDCPLCREGKLPVIKPGSRA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00874_hypothetical_protein
LRIFLNGQEMHFAEGGYQYVFLRPYKRSQQETIPRESGKLHIQLYDNGVQIRTLITHDEVSTLVNRDLAIDTKNQKIYILEEGSRYKKNPDGSVEILSPE*
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PVAIYSNLQPLEFAPYPILSLNESGYKSLNFSSINEACDRYYNDSLKMIRLESMKVNLSRNIKIRLDKAYKKQFFQEGDLAKAYEKLKYKEWGEMLTAYAFKFQKGDKTALIEDFYQGEEVEISLDPRYTPIQNAQKYFKIYNKSRNAIKHLKQLLASNQEEIDYLESIIVLIAQAETPEIVEEIREELEKQGYVKEHTQRARKELLKSQPRRFLSSDGLEILVGRNNQQNDFLSLKQAERQDLWLHSSKIPGTH
VIIKLPKTISSINDVPDHSLEEAADLAAYFSKAKEADKVPVDYTFRVNVRKPSGAKPGMVIYDNYWTIIANPRSENLSRLLAESEIQPLPKI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00876_hypothetical_protein
MNELLKTLYQDILQQIMVLESYKKELSIQILLTKDGSSRRLDLILRFLNYDLDKHELLEHAAVLAISNQENTILEDLQKFYAYTDGNDLIEKIRAEIKFLQRFVNTIKKSIKLPNSRTFYERRMVQEISKYVVEQARQYNAM*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00877_4-hydroxy-tetrahydrodipicolinate_reductase
MKQKARVIVAGALGKMGQETLKAIAGDEELELVAAVDIKAKGEKVADLIGIAGLDISLENDLDEVLENYQPDVLVDFTNPQAVFNNARSALKKGVFCVIGTTGLNEIEIKELERMAGEKQVGVAIIPNFAIGAVLMMKFASEAAKYFPEVEIIELHHDQKMDAPSGTAIKTAEMINANRPLRPPRNVREFEKIAGCRGGDLGQVRIHSVRLPGLIAHQEVIFGGAGQGLKIRHDSFDRAGFMPGVIMVI
KKILQRKELVYGMENLL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00878_Dipicolinate_synthase_subunit_A
VSSLLSGTKIAVLGGDERELILISELLKRGAILKVAGFPSSKLCDGASAVNSVEDACRDAKVVVLPLPGTSLEGIIRAVYAEGELKLSKKAIDVLAENALVIIGSARPFLKEWVGSYKLRLLEIAEMDDIAIMNSIPTAEGAIQIAMEESKITIHGSRSLIVGFGRIAITLARTLRALGSDVTVVARNEGQMARAYEMGCKRAGYSELAEAISHSDFVFNTVPSLVINRNVLKKARCDAIIIDLATQPGGTDFEAANE
YGFKAILAPGLPGKVAPISAGKILAEVIPRLIIKELAKTGQEQVLE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00879_Dipicolinate_synthase_subunit_B
MQKTRLRGVKIGVVLTGSHCTIAEVLPQIKNLKEEGADIYPIFSYTVDEVDNRFYKVNDLKKEIKEITDRPLINSIVGAEPIGPQKLLDIVVVMPATGNTIAKLANGIVDTPALMAVKGQLRNQRPVVIAISTNDALGINARNIGMLINTKNIFFVPFRQDNPLEKVNSLVACMDKAVDTVILALQGKQIQPVLLGPA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00880_Aspartate-semialdehyde_dehydrogenase
VAEGVRLAIVGATGAVGQEMMKILEEREFKVKELICLADPREAGNKVRFRDEDLKVKAANAAAFKQADIALFAVNTDISKALAPLARENNCLVIDNSYAFRLEENVPLVVPEVNPEDIAKHQGIIANPNCSTTIMVVALNPIHKAARLKRVLVSTYQAVSGAGKAGIDELEQHVRAYLAGDDIVPEVFQYPIAFNLIPHIDDFLSDNYTREEMKLVWETRKIMHAPDLKIAATAVRVPVFRSHSESITVET
EIPLKAEEVKTIFSQAPGVVLQDQPEKQLYPMPLYTSNKDEVYVGRIRQDLSLDNGILFWVVADQIRKGAATNAIQIAEIVVNDSLY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00881_4-hydroxy-tetrahydrodipicolinate_synthase
MSAPRLMTAMVTPYGDNLEVNLSQAAKLAEYLYENGSEGIVVCGTTGESPVLSADEKLQLFAAVKGKMGKRIPIWAGTGSNYTDYSIELSRKAEKTGVDGIMLVAPYYNKPSQEGLYQHFKAIADSVSLPVMLYNVPGRTSSNLLPETVKRLAAIDNIVAIKEASGNMDQVSLLKNLVGDDILIYSGDDSLTLPMLALGAHGVVSIASHLVGKNMIEMIDAFASGDNRKAAAIHAQLFSLFKALFVTT
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00882_Ribonuclease_J_1
MSEESRVRIIPLGGLGEIGKNMTAIRYQDSIVIIDAGLMFPEEELLGIDIVIPDISYLMENKEKVKAILLTHGHEDHVGGLPYVLKEINVPVYGSRLTLGIVEEKLKEHNLGSVQLQVVRPRDVISISPFEVEFIRVSHSIPDALAIALHTPLGIILHTGDIKLDQTPVDGEVADFRKFAELGEKGVLVMLGDSTNADKMGFTMSEKVVGNTFDELFGKCEGRIIVTTFASNVHRIQQVISTAQKYGRKVAVVG
RSMVNNVRISSQLGYMNIPEGILIEMEDIGKYPTGEIVIVTTGSQGEPMSALTRIATADHRWVAIESGDTVIISATPIPGNEKLVAKTVDLLFRQGAEVIYEKGAGVHVSGHASQEELKILLNLIRPRYFIPVHGEYRHLMKHAKLAESLGIPRSRIFVAENGQIIEVGKKKAVISGKVAAGKVLVDGLGVGDVGNIVLRDRKQLSQDGIMIVVVTINKDTGEVVAGPDIVSRGFVYVRESESLIENAKEKVNE
ALEICSKRNISEWAVIKAQVREKLGKHLFEKTGRRPMILPIIVEV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00883_Translocation-enhancing_protein_TepA
LQQNPNTAHSENEQKVENIKELGQIEVPSFKSDIHCLTISGQVEGHMVLPPQNKTTKYEHIIPQLVAVEENPQIKGLLVALNTVGGDVEAGLALAEMIASLSKPTVSIVLGGGHSIGSTIAVCTNYSFIAPSATMTIHPIRLTGLVIGVPQTYEYLDKMQDRVVRFVVEHSSISEGKFRELMFRMGDLARDIGTVLVGKDAVDCGLIDQVGGIKDALNKIHELKNASGGMVQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00884_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00885_Undecaprenyl-diphosphatase
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YKNRPTSSQLDYQKPPLDLLGEISRERIIDKKNIKESIGILEDTFSNFGIRVKVNQVSCGPAVTRYELTPAPGVKVSKILSLTDDLQLNLAAPGIRIEAPIPGKSAVGIEIPNSKLLSVSLRSLLSSPAFKNLNSPLAFALGEDISGNTVVGKLNDMPHLLIAGSTGSGKSVCINSMIMIFLFNSTPDELKFVFIDPKMVELAAYNGIPHLMTPVVTDPKKASVVLRWMVGEMEKRYKIFAERGVRDIQRFNQISEE
SLPYIVIIIDELADLMMVSPVEVEDSICRLAQMSRAAGMHLIVATQRPSVDVVTGIIKANIPSRIAFAVSSQADSRTILDTSGAEKLLGKGDMLFLPVGAAKPYRVQGAYVSDGDIEKVVSFIKEQLPQSEETEAASEIDMVLDKMEEDYGDELFWDAVNVFVEHRKASVSLLQRRLRIGYARAARLVDLMEDRGIVSELDNNKKREVLIDSEQLDKLYSSSKL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00887_putative_kinase
MISCLQYNEVKFNMRLTSREKEIFEVLKKEPLISQEELARRFNITRSSIAVHISNLMKKGVILGKGYVFNEQVSVVVIGESYYYIKTSGPDNDCSINMGLGGFAVDIGRIFANFGLNVKLITIIGNDDEGTNILNVLQGKGIDTVNIFRHAKKRSCRKVFLKNDKRILEENFSLHDYGKAIDAREWVVFNCEWLAVETKFQELMFRKAMGKDEEKLPFLCTYRYLDSMEEIPDFLSRYDLLVLGAADGSILEH
YLSQVLALSSDRVQSIVLSDGNTRLLYFQKGNAHEFPLLPNQCFNSQEGLPALLAGIVYGLSNGYSLRQAVRIAVGTAASND*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00889_Ribosomal_protein_S12_methylthiotransferase_RimO
VNIGFISLGCSKNRVDTEVMMAALKKAGHKIVNSLERADLVIVNTCGFITPAKEESIEAIIETAELKKKGSLQFLVAAGCLSQRYGRELLLEIPELDGVFGISSVSSMAGFVNRIAQGERACFTEAPPTEYSEKGPRILTTPPGSAYLKISEGCNNSCSYCVIPSIRGKLRSREINELLNEAVQLLKMGIKELVLVAQDTSAYGHDISPQPALPILLRELSKLDGLEWIRLMYLHPLYLSDDIIDVVAYENKVLPYLD
IPIQHASSKILKLMHRQHDNRHLRTMINKLRARIPNLTLRTTVMLGFPGEEEKDFAELYEFVAESQFDWLGAFSFVPEEGSKAALMPNQIEDEIKVERRDKILRLQQKITRQKNLARVNSREKVLISSQLSKNLFVGRTYFQAPEVDGLTLVKTDFKLTKGDLVDVQLVGVRNYDMIGEYQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00890_CDP-diacylglycerol--glycerol-3-phosphate_3-phosphatidyltransferase
MNLPNSLTLIRIFLIPVFVLILLIKIPYGDFFAAAIFIVAALTDSLDGYLARKWKQVTKLGIILDPIADKLLITAALISLVELGRIQGWIAIIILGREFAVSGLRVVKAEEGIIIPASKLGKIKTISQIVAVILIILEKAYQPYVNIPLGQWVMYFAVVITLISGFEYFYRFKLHSGA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00891_Putative_binding_protein_precursor
MRKIKIWTVLLMTIFLISAFALAGCSKESASDSNINKTDKEQSLKYEGQSLLVHSGAGLSKAMDEMGQSFEKKYGAKINFNYAGCAQLLSQMEINQTGDVFVGGSLNDAEIAIQKGYTDKFDEVVYHIPAIAVPKGNPANISELADLAKPGVKLVLGDDKTNAIGKKGAKIFAKNQLEEGIAKNVVARDATVNEIVTHIAMKQGDAGLVWEDNGFNAKDIEIIKIDKEQNIIDKVPVCMLSFTEKKELA
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SLFIFEMVGVRHIPASRIN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00893_Sulfate/thiosulfate_import_ATP-binding_protein_CysA
MIILKNVSKRLGDFSLKNINISIDNNEYFVILGPTGTGKTVILEIIAGMYKPDIGEVWINERNVSAEYPESRRIGFVYQDYMLFPHLNVRENINFALKLKKTPRNIMKDKLEQMASLLDIERILDRYPSTLSGGEQQRVAIARALVTDPEVLLLDEPLSALDPRSKELFQQELKSIHQEIKTTTIHITHDFNEALVLADRMGIMHNGEIVQIGTPKEVFQKPQSQFVAEFVGMENIYDGEIIAERGEQYVRIASQ
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00894_Cellulosome-anchoring_protein_precursor
LKKKRRKILAYGILLLFMLSISGAAWAAPADTTSTGGKSIEARTLSLFKDVSAGDGNLIYINFLVKKSFIAGFPDGGFHPSEGLSRAQAATVIVKAAGLNSDNKETLFKDVSEEHWAAAYITAAAEAGYLKGYPDGSYRPEDKLSRAEGISLILRLSRQKDDAELPVLKDLDSKHWAANSAAIGLAAGMVGLSSDQNQFLPDADFSRGDLSRALAVLLTTDPDLSRKALNGSLEIKKGEVKINGQIASGTVS
IQAGDMIATSASAEAQLNYPDGSGFLVKENTSFTVKETQGREYIKKDGSPGIAVDWLLVDLKKGNVFGALADNPNVQKAAEKKNAAAGERLLAGLSNGLELIAANDKGLPWYKTADSKKVKVKVDMPYGVAAVRGSFWNNSVSDDGCSTSLLEGELDLIAGGQTQSLLPGQSSGAGSSNPLPAPPTPMTAAQVNAWVQQASWLQNVAQTMQAQQAAWQAPPGITQPNQPPPAIPQPTLP
SILNVLNQALIQVQQAAGITNPVQLNVAASSSSGYNTGGSSSGGGGGGSQQPGTWRLEDVATTVYNNQTLALTRKLHITPPAEVPQDSYYEVSMKSGGMFYSLGINKIGNPIFHLAKASDDPSRLIAAFQDNSGNRYGFFSLNGSGSSGTLTRLATRTISGKIELQSPSGPIAAPAGGLNIIITITGRSVGGYYYNSQSVTMPAGVSSMDYILEVPENSSSNSYIIHFAVEDSSHSNPFFSTRIFDVDVSKGN
ASVENIILQPAVYIHGKLSLPDVNTSNTPVSGSIAAIPASGSDGSSLRIYRINFAIEKNKKDFDFHLPVKPGADYYLYYELYNSNNEYEHSQKFYRFGYYSSSGTVGTVPAEDIYTSLVGATAISVNSCVSDINLDVKTGYGYLISGYIILPEAAPNSDINLWLWVHPQSGPAAAISAGIYKSFSHDEKSQAYYLNVPGPGNYILSDGHGTSGFTNPPLYRLDPVAVTVYSADVFQDLNLVSSGIIPGGPGGDITG
LDPAMVTGPALLVKGKVYGLLSPSCTAEVAALVRLNECCHFKSADGQWYELNDSGNGLIATDASAIPPIGKIIDCPVLTASPTSFPQSDTGRSIKVSAPSGSALWTASDDSVRAILTNDREGLVMTEGLVISCSPIKPDTIEDENATIPIPDAIPRSKYILTLYKESGGAKILLGAAKFTITNPI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00895_hypothetical_protein
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LPGFSDEVDSSQFKKIETVGERKGEYYRDDIAFYLSTLETRPNQRYFIECPDGEKVIPPGTTFPPEKPVDGDGVWRWSLDNFELKKHLIVFKESTRSPLINEQGKPARWNLYTKSYLSDKQESGNLPRDLFDKFLNRNGSEDLKRLDIPFDFPKPVNLIKHLLKILNDEKDGIILDFFSGSATTAHAVMQLNAEDGGKRKFIMVQLPEVCADGTKAAKAGYKNICEIGKERIRRAGDKIKAEAGLTALNL
DIGFRVLKLDDTNMKDVYYAAGDYTQDMIALMESNIKPDRTDLDLLYGCLLDWGLPLSMPHTHEKIDGFTIHTYNDGDLIACFEERISEKAIREIASRKPLRAVFRDSSFNSSPEKINVFEIFKLLAPNTNVRVI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00942_type_III_restriction-modification_system_StyLTI_enzyme_res
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NMIYRLDAIEAYNKRLVKKIAVKGISVSGSTATEGYVYVQSINLSKGNPTATIEFDIKNKTGFSPKTRVVTEGYSLFDNSGELAEYKDGYTVLRIDGRDSSVEFTNGKKLFAGDVIGAVSEEQLRRIQIRETILSHIERERQLFAKGVKVLSLFFIDEVAKYKQYDASGNAQGGTYAEIFEEEYKAIVGSMQLALTDTTEYLTYLDGIEAERTHAGYFSIDKKSGRMVDSKLGDKKERTSDDADAYDLIMKDK
ERLLDRREPVRFIFSHSALREGWDNPNVFQICTLKQSGSDVRKRQEVGRGLRLAVNQGGERMDETLLSREEVHNINVLTVIANESYDSFAKRLQSEIAEAVADRPRKVEAKLFTEKFGEDTALAIYESLIENGYVKRGELTEKYYEDKKNGTIEVPEEAAGQTADVIAVLDSVYDPNANKPENARKNTVEVMLDKGKLDSKAFQELWSRINHKSYYVVGFDEDELVEKAVKELNARLRVSKIYFKVETG
EQAKNIDSKEQLEYGEAFVRKDMVREEAASFMAMRASSSVHYDLVGKIVAETGLTRKAVTKILVRLEKVIFDQFGDNPEEYIIRASNIINEQKATAIIEHITYDKLTAAFGTDIFTEPDLKKGSLGVNAMEAKRHLYDYVIYDSTNERDFASALEAHSQEVEVYVKLPRGFYINTPVGKYNPDWAIAFYEGKVKHIYFVAETKGDMSSMELRKIEEAKAHCAREHFRAISGDNVKYDVVDSYDKLWELVQ
G*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00943_hypothetical_protein
MGGATIICPNCKKSFEISDAIQHQIEDELLRAKTEQSETLRKKYDAAAEIKLKQAVENAISEAQQAAQLQIERERQTAKLELDKARQTTELEVEKAKRTTELETERLRREATASKESEKQLRKQLSDLLEELSKANKAREDAELTARKELLEKEKGIRAEAAQKASEDFNTKIREQEETINRLREQLTTAKQVAEQGSQQLQGEILELDIENALRSGFPFDTVEEVKKGERGSDIRQVVNEQFYMNCGLIL
WECKNAKTYQASWLGKLKDEIASEKAQMGVIVFNPTDGGGDDFKQLADNIWLVKPRYVIMLATLLREAIVKVFAANRAAEGKDVKVELIYNYLTGGEFSNRIRYILESYDEMAKQLDTEKKQAQKRWAAQEKILQKVTNSLYGMSGDLQGIAGREIIALPALGDDVEEVLSIKPRISEPRKRTEDIDDEY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00944_hypothetical_protein
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GHEHFAETSEGKCPYCQQELPDDFEKQIADCFDGQYQEDINALRQFQEDYVSDMQGFLDVLNGNLQDAFPKLDLTEYKTKLALLEKTIEINIQRITDKLKEPSSVVTLENVKTLRDEINVLIEGFNKQIQANNDIVGAKRQKQAECTKKVWELIAFTLQSDVSTYRVRRKTFDDEITALIKLVDDGAKASRALGNEIAELNKRVVSTAPTIKSINDLLRDSGFQGFTLREKRGQQNVYEVVRQDGTV
ADKLSEGERNFIAFLYFYHLVRGSHTDADVSKDKIVVIDDPVSSMDSCVLFIVSTLVREMVGVCFNNAEYREQEREVQGDYIKQIFILTHNVYFHREITYNQASRYHCVSFYVVNKASNNSTIKHCVRQCISKPTEQENFNPVQNSYAALWGEYREVDTAIPLMNVIRRILEYYFRQLCGYDGVNIRKRVLDEHRDKFVETPAEGLPDYTKYHLATAMLSYINANSVGFSDGLNYVDDCTDITLYKDVF
KLIFEALEQEQHYKMMMGEEQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00945_hypothetical_protein
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ARVSAKVDENNVLLEDVLFSSPSAASMFVTGASSNGYTAWKTADGKTLKDVETSEADEL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00946_Virulence_protein
MNSEIVMYQTEDGLTKIETTFDNDTVWLSIDQMAELFQRDKSTISRHIKNIFNEGELIRNSVVANFATTAADGKTYQVDYYNLDVIISVGYRVKSLRGTQFRIWASNVLKEYMRKGFAMNDGLLKNNGGGIYFDELLERIRDIRSSEKVFWRKVLDIYATSVDYDPRTEASTLFFKTVQNKMHWAVHGKTAAEKIYYSADADKPFMGMLSYKGERPAQSDALVAKNYCTEEELSALNSVVSAYLEFA
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00947_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00949_hypothetical_protein
MEKSKISDQELNKVSGGREEYENYFCTQLDKQAFEFHYKRGQNNECPRYIGSGHYPACSNCFHIQPRM*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00950_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00951_Alpha-hemolysin_translocation_ATP-binding_protein_HlyB
MSKGWFDEQIKNRIRYDEEGFQNAFAQLSSVVLGKSLISSALNSDRLKTKNAIEEILKFYNTEPVELPEEVEDMNDQLKYLLRPTGIMRRVVKLQGNWWRDAVGPMLGQTKSGDVVALLPVGLAGYEFFDYETGEKLRLSRKTKDKLQEEAFCFYRPLPLKQLGLTDLLQYILNTLSSADILMVALASLGVSLLGLFTPYLTKLIFERVIPAGEPGLLLPVALVLVGVALSSILIEITKTLLIARVQTKMNI
PVEAAAMSRLLLLPAAFFKEYNAGELSSRISAIMQLCDMLANTFLSTGLTALFSFIYVFQIISFAPALVFPALMVILAQLAVTVITGLVELNLNRRRIALNARLNGLTFASFSGVQKIKLAGAERRVFAKWADTFKQQADISYNPPLLIKVQPVVASAISLGGIIIIYYSAAAASVSVADYMAFNASFGLVTGAIMSLAGVTTSFANIKPLMEMVGPILQAVPEVGENKQIITSLSGNIELNNVSFRYHEEMPLVLD
DISLKIKAGQYLAIVGKTGCGKSTLMRLLLGFETPQRGAIYYDGRDIARLDMRSLRQNIGAVTQDGRLFSGDIFSNIVISAPWLSRDDAWQAAELAGIADDIRAMPMGMHTVISEGSGGISGGQRQRLMIARAIVPKPRILMFDEATSALDNITQKQVSEALDSMKSTRIVIAHRLSTIRHCDRILVLDNGKIKEDGSYDELLQKDGYFAELVERQRLDDDSFVGKTTLF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00952_Lactococcin-G-processing_and_transport_ATP-binding_protein_LagD
MPKIAKVPVVMQMEALECGAASLAMILAFHGKWVPLERVRSDCGVSRDGSNAVNILRAARAYGMRAAGYRLELDDVKQIEYPVIIHWNFNHFVVLNGFKKNYAVLNDPGRGTVEVPMEEFNKSFTGIVLTFSKTDDFVADGQPRSVLDFAKGRLKGTLVPIIFVILTGILAAVTGVMTPVFARVFMDRILTGANPDWLYPFILAMSGLLAFQIIVSLINTLYMLKIRGKLAIVANTTFFWHVLRLPM
EFFSQRMAGDIAARQSSNELIAETLISQLAPVLLNLAMLVFYLVVMIKYSLLLTAVGLAVTFINMWVARIISKKRVNITRAQMRDSGKLMATTMSGIEMIETIKASGAENGYFERWAGFQASVNSSSVRFALLNQYLGAVPGALQQIANLAVLVLGVMLIMNGKFTVGMLLAFQGFMASFLAPVNAFIGLGQSMQEMRSSMERIEDVMNYQPDVEYLPQAEDDEREYHKLSGALSMKNVTFGYSRLA
EPLIKNFNLTVQPGQRIALVGTSGCGKSTLSKLISGLYRPWSGVIEFDGQAREDICREVFTGSVAVVDQDIIMFEDSICNNIKMWDKSIEDFEMILAARDAGLHTEIMQREDGYNGMVLEGGRNFSGGQRQRIEIARVLAQDPRIVILDEATSALDAKTEYEVIQAIKDRGVTCIIIAHRLSTIRDCDEIIVMNKGKVVERGRHEELYQAGGLYTELIATE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00953_NHLM_bacteriocin_system_secretion_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00954_urea_ABC_transporter,_permease_protein_UrtB
VESATIALLAAAIVAGTPILFAALGELMAERSGILNLGVEGMMLVGAVLGFIFASNTGNHWYGLLAAMMGGGLMASIHAFISVTLRGNQVVSGLALTIFGTGISGFMGKSYQGMPAADPFRPIAVPLLGDIPVLGPILFKQDALVYISLILAIGLWYILFRTRWGLRIRSVGENPAAADAVGISVSRVRYICTILGGMFAGLGGAYLSLAYAPSWQENMTAGRGWIAVALVIFALWNPLRGLLGSYLFGGV
EALTFRIQTIGIHVSSFFLAMLPYLLTILVLVLVTIRLRQEAGAPRALGVPYDREER*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00955_L-arabinose_transporter_permease_protein
MLRLRLIKREQDSLFARVSVPILSIVLAFLFGWVFLALSGFDPGETYLRMYRGAFGSSYAVSETMVKAIPLALCGLGVSLAFRIKLWNIGAEGQFYMGAFAASGAALFAGDLSAWLLLPLMFIAGFAAGGIWGFIPGALKAYWNVNETITTLMLNYVAILWVSFLVFGPWKDPASMGFPLTPRFPAGGYLPTLGTSRVHMGLLIALLLAVIFFIVLQYTRWGYEVRVIGESQEAALYAGMDVTKNIILVMII
SGGIAGAAGMIEVSGITHRLQQGISPGYGYTAIIVAWLARLNPFAILLVAFLFGALLVGGFGIQTFGIPFSIVLILQGAVLFFLLAGEIFLNNRIVVMREEVR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00956_Galactose/methyl_galactoside_import_ATP-binding_protein_MglA
VRQAPLIEMLDISKSFPGVQANDHISFRVYPGEIHALLGENGAGKSTLMSILAGLYRPDSGYIKVKGEAMRFRSPRMALEAGIGMIYQHFRLIQNFTVAENIVLGSPASSFRVNHRAIEKETAALSAKFGLEVNPAARINQISLGEQQRVEILKMLYRGCDILIMDEPTTVLTPQEVEELFKVLRLMSGQGKAVVLITHKLKEVMEIADYVSVLRKGKVVADGRIENLDEKTLTSIMVAREVEFSQIDRKKSS
EKVVLEISKLQVPGDQGHLAVENVNLTLHAGEIVAIAGVAGNGQKELLEAIAGLRNPSQGEIRLDGKMIQEQSVQEHLAAGIYMVPEDRLGMGLVPNLSVMDNAILRNYTRREVKRGLLFNYKKIIAYTRKLVEDYNIYLSDIHHPINYLSGGNLQKLLLAREIDQEPRVLLASYPVRGLDVAAAEAVYQILLKERDKGTAILLVLKDLDDIFRIADRVAVMYDGQINDVLDLESTDIDKIGALMLGVN
KVGVHYAETQAN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00957_Purine-binding_protein_precursor
MRKSKLGILMLVLALLLVFTAGCGGQAEKDQGQADTEKIKVGFIYIGVPGDAGFTYSHDQGRQYLEKEIPEVETAILENVHEGADVERSLEQLIQDGCNIIVANSFGYGDAVLAVAKKYPDVKFLHCSGLETEKNVSTYFGRIYQARYLSGMVAGAMTKNNSLGYVAAYRIPEVVRGINAYTLGAQAVNPNVKVKVVWTNTWFDPTKEKEAAKSLLETGCDVIAQHQDTPSAQQAAEEAGKYSIG
YNSDMSKFAPNANLTSPVWNWGPYYVKTVKAVMDGTWKSEAYWGGLEDGIVDLAPISDKVPADIKKQVEAKKKEMTDKEWDVFTGPIKAQDGTVKVPEGKKMTDAEMLSFDWFVAGVEGNIGK*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00959_phosphodiesterase,_family
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KSLAARFKVDFLINAGDLTDMGSQLETGATQDLATVGVPQLFVGGNHDSPGTINFITALPDSQVLNGEMITLKGVKVLGFADPLSASTAVEYESPEAERESLKEQVSRIKEAVAAQGRPDILVVHNYRLGKEIAPLAGLVVAGHDHRIRIEEGPDGVFVDPGTTGASGLRGLYSEKGISYSAAIAYLLPGSGLLAVDMVQYNPVSHQFSLERQVFQSTESDLIPDRDADST*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00960_23S_rRNA_(uracil-C(5))-methyltransferase_RlmCD
LRCSIERINHQGEGVARVGGKVVFVPQALPGEVVEIVITDNRVRFARAQLVQLLEASPYRLTPLCPHYYECGGCAYQHAKYEEELVLKRQVVKDAIQRIAKIATVVEPVLSMPEPWHYRNKVTWHMAATGKQEPVLGFFREASRQLLPISHCRLISEKMNCLTARVKALLPLIQPAPGSEITLRESSLDHSTMLIWKGLQRWPAPEIWPELSAISDSLVVIEKNTCHYISGPQRLLDKLGQVKFALSPGAF
FQVNHCQAEEMIRLILSLVDFSGKTVLDAFCGVGSIALNLARQAERVIGVESYEPAIHDARCNAIEAGIYNVEFIHDLCERAVARIDEPIDVIVLDPPRSGCKKELIQACSRLSPREIVYVSCNPATLARDLALFAQLGYRPLFIQPIDMFPRTYHIETIVSLQRGNL*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00962_addiction_module_toxin,_RelE/StbE_family
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00963_Hydroxylamine_reductase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00965_Oxidoreductase_molybdopterin_binding_domain_protein
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GGVPLWLLVGMVDDNPDVGVKHFNFNDDLAAQKYQVNVISGDGWKATLDSDKIARNNGYIIANTLNGEPLPQKLDSGKGSWPLHLKGEAIFGGQQVGNVVKIELSNLPQPAAGWTLELSGEVGDTITQEEFEEGLACTGSGHYKEWTDKEGNVWSGVPLWVLLGAVDDIEKGKHWTFNESLAIGYTVKVSAADFSKTFNGADIAKSDNYIIANKMNGKPLTDSYPLRLVGAGVTKTDGSG
GLGGKAVGNITKIEIPELQTPAAVEGSWNLTMTGKISDVFSQEEFEAALACPNSGHFVQWTDGNNDVWSGIPLWYLTGWVDDRQPHKYNANLATAGYTILVKAGDGYTKDFSSKDVAWSNDYIIANKLNGKPLTDSWPLRLVGTGVAKADGFLSGTSVSNIAEIALTSFETAVPIPEVRIIKYGEDHTTILQEKTVDYLWMQSNLEVIGDGTTVYRYEGITNNPDDVWDADETYPGGYKVANA
VKGSRIKDLCELVGGMGAGTEIVFVAKDGFETRLPYSSIYTDPSVQARQGDAILAWWGDGKYVPDYADGMRLFFTPEGDNVYGQWDMHETLPEKYWHYYYGDGVQYPSCAGLSAKYISEIRVYSVPQGDWTLALDGQDIGGLQYEVSKTYFESALACQFGANHKASYTDSKGRVWEGMPLWFLLGFVDDADQHSSKAFNDVLAKAGYQVVITADDGHSITIDSRDIDRNNNYIIANSLDGA
LIPESDSSWPLRLVGANASGATSISQIVSIKLLKSFKDWPLKYEPVHSTHDWNIIFSLPVSKNQNLDDHIYVTNVTGKKEPVTCRVNPENPEGIQVLPPQGGYQPGASYTLWINGSLKSEAGKPLKQAYKLQFTIAN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00966_Disaggregatase_related_repeat
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QGFIITGLENNGLLGFRSRRYFEESKRPTLLVEFTLDGH*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00967_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00968_putative_membrane_protein
MADRIEFVKNYSDLSTNKGFQFEFYCDRCGSGYRTRFKPSITGTVTGVLDTAGSLLGGLFSSAADVSERVRSASWEKSHDDAFEDACNELKPDFIQCPRCSSWVCRQKCWNKKKGLCKECAPDLGVEMAAAQASKSVEEIWAHAAMAEEDKKLGLENWRENVRASCPECEAPLASNAKFCPECGAKLKAAQFCPSCGAKVNPGSKFCAECGEKF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00969_Putative_serine_protease_HhoB_precursor
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00970_Endoglucanase_precursor
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RSGEHDGNSYSEYKLGNLDLSSFTCMFQIKPDSQVSELTANSDSNLWFKTNAQLTGQHIFLIKKSNVWYSSTISI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00971_Selenocysteine-containing_peroxiredoxin_PrxU
MWNDHELSKMINRDIPFAMLSDQDGSIGKMYGIYDEDSGVETRGRFIIDPDGIIQGFEVLTPPVGRNVQESIRQIQAFQLVRASGGTEATPSGWRPGKQTLKPGPDLVGNVWKVWKVSEAFEE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00972_Selenocysteine-containing_peroxiredoxin_PrxU
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_00973_hypothetical_protein
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GLQDKGFRLIKEDDKKSILFNPTPSSYFLRQERDALVIGQAAINFEMYFPWMLRGYSSCLEDYPREYLSGFKLIYLIEPEVKDFTSFQRMVEELAEADKVVIVSMGRGETWPLLDVIPYWETIESDYRLKTCENAGITGEAWLEADPTGQVPALGNLDETWAVMQGEDREVPAIGYKEVNGHRVYFVGLALGQQLNSADGEQIRMMLEQLMDLAHPNKSIVPHPFPVLEDEWRHDGFSFSYDSREP
RPVLVSVTYTPRWKAWLDGKALPVQNMDNLIYIQLPAGKHQVSFHYGMSWVGKLGIVLSLLFLLLVALFYYYFDYFDLFFNHLQRKVRHYISLIGE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01012_hypothetical_protein
LKRFRIILAFFFCFIILTILTLSACSSPLKQATVYENDDKVKMLSRVEGEDICLYIDGKWDKSFRFGVNLGATTAGHHPGELSPSYDDYRRWFAGMDDLGIHSLRVYTILPPHFYKALADHNKDARNKLWLIQGIWSPEEELISLQDAYLPEITDKFHREIALAVKAVYGLGEIPRVPGKASGIYTTNAAPYLMAWMLGSEWDPLMVDKTNQNHPDKKQFKGQYFSTTAEASPFEAWLAQSLDILAEAE
TRQGWQHPLSFVNWVTTDPLSHPDEPFEKEDLVSVNPRHITPSSEWEAGYFAAYHVYPYYPDSLRYQKDYLDYLNKDGQKDPYEAYLLELKEKHSGIPLLVAEFGVPSSRGMAHRGPLERNQGMHNEKEQGQMIVSMFKAMKNINLAGGIVFSWQDEWFKHTWNTMSLEIPSERRPMWLNRLTNEENFGLVAVEPGKSNRIYLDGKIDDWERINAAEKTTGGDRLQLMASSDEAYLYLAIEN
PTGWNWNEEELLIAFDNQPGGNKFLSQSNAYFDEGAEFLLTVKDRDEAKLMVASAYDQHSYLYGRVLKMIPFDQSLSQENNGLFLPWKLCLSRELYLPTSQKTIPFEEIEIAKLFHGNSHPASPNYNSLSDYYCGEKLIEFRIPWMMLGFTDPSSHQVWVYPHRQNLGEFSSITSPGLNLQLLSINPKNSQIVSKSEVLLYNWKDWDMPSFHERYKESFYILKTYIAGFK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01013_Phosphomannomutase/phosphoglucomutase
MINKSIFRMYDIRGRVGTDLDEAAVRAIAGAFGRYVQEQDREKIIVGRDNRFSSPRFRELVVETLLLSGLDVVDIGEVITPMFYFASRHLDIDAGMMITASHNPGEDNGFKLLLGNSTIYGEDISKIADLAETGDFISSTKKGNPSFYDISPAYRQDIMERIKLGERQLKVVVDCGNGTAGFIAPRLLRELGCEVIELYCDSDPSFPNHHPDPVKVENCQDLIRVVKAEEADLGIGFDGDGDRLGVVDTE
GNIIWGDMLMILFWREILPSYPGTDCIVEVKCSQSLIDEIERLGGKPVIYKTGHSLIKAKMKEIGAVFTGEMSGHMFFADEYYGYDDALYAAARLLRILSHSEQSLSELLADVPRYHATPELRVKSSDSEKFAVVERVLSHYRNHHEVIDIDGARILFPGGWGLVRASNTGPELIVRCEAGTPEELERIKTELFTFLKV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01014_hypothetical_protein
MSRARLLVLTGLFMGLAGFLLGVGFLFLVNVPVEELLTRRGTSQTLINIAMTGIIILWALSSAWVTRCFFRKVLSREKPPTSFIYLILGVLFLMAAVVFYFLLTTGSPVIARLQGTVSEPGERYAFGPYPDKPRLRELKAEGYDGVISLLSPMIPFEKILLEQEMEHGKEVGITIYSLPMLPWVSENQESIQRAMDLAEPGDKRYYVHCYLGKHRADLIKRVLLGQEPENKEPQECIYKTRLERGKLYFYQNSR
IIMGPYPTDEEWFHLIQRGQFKEIIADLDPENPGDLKWIKREEKNCQEMGLKYTIMPLRKQGNAYQGLLELAQYIANSQHKIYVHGFLITEKNLLLDGLLRGGDLEHMGKAFPERLQGGAVFRVSYNLFLGPRPAAGEMDRLKKAGITHMEALELDENISPAGAASYIQAWPKTLGVCFFYGFPSPDYCSQVASILSSRCYGLKRDDIPASIGGHKVDIITERLLLGRQPEAAELCTLAGLGVRTIVQL
EEPDLSSDQDLNLIKQAVEAEGLRFELVYRSEDYINHIAKEVQRDDNPCYVVAAPFIQNAVFIDLKSCRI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01015_hypothetical_protein
MKFYHSLRFKLLIGILLLCFLASIGQSLVSFWSGKNVLTSEITSKCQQIAESTSQVIDTYFAGKLEKFDTLSKTSLLKNMREEEIIATLAGIMTSEYDNIYVIWPDGSTVTDRGERPQLADRDYFKLAIKGQANIGTPIISKTTGNMVAPIAVPIVREQQVVGVLGASLKIQELIDVVNQVKVGETGYAYMIDREGTFVAHPQSEFILESNQFELGEELAAIGKKMIAGESGIVNYKYEGMGKYMAYAPVKSTG
WALAVTVPVKEVNQPLNNMMQKIILITVVTLALAILVIWLISGNFTRPVLAMVGITERLSQRDLTQNIKSDDSSEIGLLMNSLGEMKDNLHQVLGQMAASAERLAAVADSLFNNAEQSGKASEQVHASAEEVARAAATQAEDAQKTSELSQQVGMAMQNVSQATEDMSQQSRHFKNIVAQATGLMLQQKEKMDQTVESTVNVSEVIMDLNNKTQEIGEIISVITDIAGQTNLLALNAAIEAARA
GDSGRGFAVVAEEVRKLAEETGSATLNIGGIISEVQAGVERVVAEVQKVEKQVREQGSSLGESVGAFREIESGAGKMDNSIQDISATFEEIVASADEIIQAIENISAVTQESAASAEEVTAISQNQLAAAQNIVQVSQELETLAAELKEVTATFILR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01016_hypothetical_protein
LKFTQSLKFNFLLWILGAFFLASIGQSFVSYWSGKDILIQQIQENCTQIADATGAEIDSWIEGKFSEMSTLAKLDEVKKMDAERLPALLSGLMSADHDNLYVVWPDGTVVGDIGHMDFKLDDRNYFKLAMEGKANIDTPVLSKATGNLVAPVAVPIYRGDKVVGVLGATIKAEKVTEITSQVKVGETGYAYLINQDTTFVAHPKKDYILQKKLSDEAEGIEDIISRMTALERGIAEYKFDGVAKYMAY
DPVELAGWSLAVTVPVSEVTQPLDNMLHKMIMVTIVTLLLLSIIVWFVTGRLTKPILGMVGITTRLSQRDLTQEIESKNRSEIGLLMNSLRDMNDNLNAVLKQMAGSSERLASVSDNLMQTARQTGQASEQVSASAEEVARAAAAEAEDAQKTSELVQQVGLAMQNVGSTTEGISQQSINFKNIVGRVTGLMLRQKDEMALTVDSTVNVAGVIEELSNKTQEIGEIINVINNIAGQTNLLALNAAI
EAARAGEAGRGFAVVAEEVRKLAEETGSATLNIATIINEVQAGVERAVAEVDKVEKQVREQGVSLGESVDSFREIEQGAVEIDNAIQDISATFEELLASADEMTQAIENISAATEESAASAEEVTAISQNQLAAVQNIVTVSQELDKLAVELKKVTDTFKLK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01017_hypothetical_protein
MTRYRTSDGKEDMRQKFHWFGAMAIPIAFLNGLFFGGYALRKIRQYWEGGPMD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01018_Cyclic_di-GMP_phosphodiesterase_response_regulator_RpfG
MRRVSIYELDPGMIVARAIFDSEERVLLHAGVELNEKYIHGLQKAGVMSVYIRDELFDESDAVSDIISEKTRLKAVRTLKESFKLLEKKHQLNLHAVKNTVDEIIDEIIANPNTLVSLTDIRSFDDYTYAHSVNVGVLSIMSGISLNYERSQLKDLGVGALLHDIGKIKIDKNILNKPDDLSREEFAEIKRHAGLGFDILRKHNVLSLLSAHIAFQHHERWDGQGYPRQLSGEEIHEYARIVAVADVYDALVAD
RPYRPAYSVTQAISILKRMTGLFLIHSVLKLF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01019_hypothetical_protein
MKKKRQAAFPRAILKNLADEIKKMAGSNEGRLFILEMVEEIPYDIRAQVIEGLSAFYEDEIVEFFQLLKAEYGSEMESLCARALEKFSMAGLDISPPIFFQGTFLKAYATCSRHTGRLSVDIAWKASEKGVHVESFYLTFNADGLHSFFLVENMPLAQFEHDRQVLGEMVGLSFEDASLLISQAFALNLRHMSRPSVGRFLYQKYLSHSTAINENQERELLHRISPRLTPRQLINSFFYALKYQDLSYILSLISAS
NAPQALQQFDGFLKLGKTLLEGQVEEVYASGKHARVIASSLGLKDHELEPHSYCFYLVKVESGHWSIVDIQSLPPQAKTRTTLTNPLEANVFCRVYEITDMDEFFVVLDKIDNIREMEELPYGIHMRLTCFEDNFNHGVSFFTGVIADMIINGDEFVVISREQSTAAEIHKLFISLSGIPVIYRGEYEVSLLTAYRYLGGNYVYFEDVLVDEESEQVFDDGMRFISAHYLVKDYKKVWQRMGELSLVEIET
TVDYQVYYQLEDRNGAPAFFAEYVLGPNWLSISAFGELDLNKARKNLESEIYEYLEYDGMELKTEGFFDILTNEVSRENPDLEKAMKEMYLNKWYNSHLATLSGMSPFEASQSEEGKRLLWTMFKKIGQREKKGLVPGQQKRINLKEYMRKVEQGKEGKI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01021_Branched-chain-amino-acid_aminotransferase
MGLKIYLDGKFVDEEEARVSVFDHGFLYGDGVFEGIRAYHNSVFRLKDHVDRLYDSAKAVNMEIPVDKEQMTEIILESCRQNGLKDAYIRVVVSRGKGDLGLDPRKCSVPTVVCIASSISIYPEEMYEKGLDVITVPTRRNGPEGVNPRIKSLNYLNNIMAKIEANMAGVPEAILLNQEGYVAECTGDNIFMVKNGILKTPAIHLGLLEGVTRNEVIGIARKEGIEVQETTFTRYDLFVADEVFLTGTAA
ELIPVVKVDDRVIADGKPGPIFHKLLRQFREIVKEPEALIFR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01022_Dihydroxy-acid_dehydratase
MKSDKVKKGLEKAPHRSLFKALGLTDEEIERPLVGIVNSRNEIVPGHINLDKIAEAVKAGVRIAGGTPFEFQTIGVCDGIAMNHIGMKYSLGSRELIADSVEVMATAHAFDALVFIPNCDKIVPGMLMAAARLNLPSVFVSGGPMLAGTIRGKKISLTQLFEGVGAVAAGRMSLEELQVMEECGCPTCGSCSGMFTANSMNCLTEALGMGLPGNGTIPAVFSERIRLAKQAGMKVMELWEKNICPL
DIMTPEAFQNAIRLDMAIGCSTNSVLHLLAIAAESGVKIDLEMFNQLSATTPHLCKLSPAGEHHVEDFYQAGGIQALFNELDKKDLINRECISVTGRSAGENFAHSPVRDYSVIRPLHEPYSESGGLAILFGNLSPEGAVVKKGAVAPEMMEHEGPARVFNSEEEAVEAILDNRIKSGDVIVIRYEGPQGGPGMREMLTPTSAIAGMGLDKEVALITDGRFSGATRGASIGHVSPEAAAGGLIALVEEGD
LIRINIPACRLELLVDERTLGERKLLWKVPEPRIKTGYMRRYARMVQSASTGAVFKN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01023_Acetolactate_synthase_large_subunit
VKLKGAEILLQCLQKEGVDTVFGYPGGAVLPIYDALYKSEIRHILSRHEQGAAHAADGYARATGRVGVCIATSGPGATNLVTGIATAYMDSIPLVCFTGQVGTSLIGRDAFQEADITGITLPITKHNYLVEKTEDLARIVKEAFYIARTNRPGPVVVDLPKDVMEKEIDFEYPEEAINIRGYRVVKGYNSNQVITAVDYIQKARRPVIYAGGGVISSNAAEELRELAEKRKIPVTTTLMGMGGFPGNSYLSL
GMLGMHGTRYANYAIGECDLLIAVGVRFDDRVTGKIDTFAPHARVIHIDIDAAEIGKNVEVEVPIVGQVKEVLAAINQRLEAIESEELNEWHETIHRWKEEYPLRYGDSSEGRIMPQHVIEEVYSLTQGEAIICTEVGQNQMWAAQYYHYKHPRSFLSSGGLGTMGYGFPAAIGAKIACPELPVVDIAGDGSIQMNIQELGTAVQYRLPIIICILNNHFLGMVRQWQGLFYGGRYSYTDMSHQPDFVK
IAEAYGAIGRRIKEASQVREALEEALKVKDRPVVLDFWVEREADVYPMVPPGGSLMNMLGGD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01024_Putative_acetolactate_synthase_small_subunit
MKKHTLAVTVENRPGVLTRVTTMFRRRGYNIESLAVGATENPAISRITIEVAGDDRIIEQVTKQLYKLIEVIKINDLTDARSVDRELVLIKVKADNSVRAEIVQIVDIFRARIVDIGRDSLIIEVTGDSRKIEAIEDSLRAFGIIEMVRTGKIAMIRGGK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01025_Ketol-acid_reductoisomerase
MARMFYDADANLENLKGKTIAVMGFGSQGHAQAQNLKESGLNVIVGLRKPFDEASEKEWNAVIAAGITPMSVAEAAEAADVIQILLPDEVQARVYDAEIKPYLKAGNALGFSHGFNIHFGQIVPPAFVDVFMVAPKSPGHLVRRMYVKGAGVPGLVAVQQDYSGKAKELALAYACGIGCTRAGVIETSFQEETETDLFGEQCVLCGGVTELVKAGFETLVEAGYQPEIAYFECMHELKLIVDLMY
EGGMSYMRYSISDTAEWGDYTKGPEIIGEEVRYAMYEALQDIQDGSFAKGWLLENMVGRPRFNALKRQNREHLIEEVGAELRGMMPWLKETK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01026_2-isopropylmalate_synthase
MGDKKRIYLFDTTLRDGEQSPGVSLNVEEKLEIAGQLARLGVDVIEAGFPIASPGDFAAVKRIAENIKGPVIAGLCRATRGDIDRSWEAVKGAESPRIHTFLATSDIHLKHKLQKSREEVLLQAVEAVKYARRFCSDVEFSAEDASRSDLDFLARVIEAVIEAGAGVVNLPDTVGYAVPEEYGHFIRSVMERVPNIDRAIVSVHCHNDLGMAVANSLAAISNGARQVECAVNGIGERAGNASLEEIIMALYT
RQAFYDKEININYSEIYRSSRLVSSLTGMEVQANKAIVGKNAFLHESGIHQDGVLKERSTYEIMSPELIGISSSNLVLGKHSGRHAFKERLEELGYQLGDEELEKAFIGFKELADKKKEVTNDDLEALVKDKVWAIPERFTLNYLQICSGTTIVPTATVKLAIEKMVFEAASTGDGPVDAACHAVDKITDIYGKMHEFKINAVSSGKDALGEVISRIEIDGKIYNGRGLSTDIIEASVKSYINAINKYYYEKHRAM
A*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01027_2,3-dimethylmalate_dehydratase_large_subunit
MGMTISQKILARHAGREMLEPGELINCQLDLVLGNDVTAPVAIAEFKKLGIDKVFDQSRVVLVPDHFTPNKDIKSAEQCKILRDFARQYEIENYFEIGQMGIEHCLLPEQGLVVPGDLVIGADSHTCTYGALGAFATGVGSTDMAAGMATGEAWFKVPESIKFVYYGRLPRWVGGKDLILQTIGDIGVDGARYMSMEFTGEVIENLSIDNRFTMANMAIEAGGKNGIFAADEITLDYVKKRAKRPF
ELYQSDPDAVYFDIKEYDVSQLEPVVAFPHLPENTRPVTEATHVSLDQVVIGSCTNGRIEDLEITASLLKGQKVHPEIRVIIFPGTREIYLEALRRGYIETFIEAGAVVSTPTCGPCLGGHMGILARGEKALATTNRNFVGRMGHPESEVYLASPAVAAASAVKGRITAPWELEPERGFHYEI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01028_2,3-dimethylmalate_dehydratase_small_subunit
MKYSGKVHKFGADIDTDAIIPARYLNTFDPRELALHCMEDADPDFPQKVKPGDIIVADKNFGCGSSREHAPIAIKGAGVSCVIASSFARIFYRNAINIGLPILECEAAAEGIKAGDEVEIELENGHIKNLSSGEDFQAMPFPEFMQGIMAKGGLINYVKGK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01029_3-isopropylmalate_dehydrogenase
MYKIAVLPGDGIGVEIVPEAVKALQAIALRFGHEFAFSEALIGGAAYDAVGHPLPAETLDICRNSDAVLLGAIGGPKWDELPVQLRPEVGALLPLRKELGLFANLRPSVLFPGLLHASTLKEEVIDGVDIMVIRELTGGVYFGEKKREQTPGGGQKATDILSYSTFEIERIVRLAYEVARKRGKKLCSVDKANVLESSRLWRETVNELARDYPDVETSHMYVDNCSMQLIRNPRQFDVIVTENMFGDILT
DEASMLTGSIGMLPSASIGGEVGLYEPSHGSAPDIAGQKKANPLATILSAAMMLRYSFNLEEEARLIEQTVRTVMEEGYRTPDLMEEGKTLLNTEEIGDLVAARIRIL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01030_2-isopropylmalate_synthase
LDVLIYDTTLRDGAQGEGLSFSLDDKLKIVEKLDYLGIAYIEGGWPGSNPKDLEFFSQVRNLDLKHARITAFGSTRKPGIGVKQDANLQALQQAGVATVTIFGKTWDFHVLRALETTLEENLNMIRESISYLKEQGMEVFFDAEHFFDGYKNNADYALQVLQAAAEAGAGYLVLCDTNGGTLPWEIEEIIKEVQKYSRVPLGIHAHNDSASAVGNSLIAVKEGCSQVQGTINGYGERCGNADLCSII
PNLELKMDKRVLPPGYLKRLAEVSHYISEIANMPHHNNQPFVGYGAFAHKGGIHVNALLKDSLTYEHIDPEEVGNYRRVLVSELSGLSNLLYKARELDIDINNYDHETRRVIKQIKELESQGLQFEGADASLELFLRKAFGQYDDFFQLKNLKLIIEKNEDSPITAEAMVKLTIGEKTFHTAAEGDGPVNALDNSLRKAITEVYPEIGEMHLSDYKVRVLNGNEGTAARVRVLIESADQKSKWSTVGVSE
NIIEASWQAIVDSINYLLFKKQMT*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01031_hypothetical_protein
MNNYSPVKNCYRAILSLVNHLDDSCNDKNAMRQIYEELSELAFYIMIDDRERMIRGIEQLQHTIRELRCQENTMEYNRFQFITGEINTHLNYLLIDYCTRPKIV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01032_Glucose-1-phosphate_adenylyltransferase
MKAMIMAAGVGSRLMPLTKDTPKPMVPMANRPLMENIVELLGRHHFKEVIANLHHQGESISGHFDDGHDFGLKLLYSPEEKLLGTAGGVKKCEWFLDETFVVISGDALTDMNLSELLAQHRKRGALATIALKEVVNVEQFGVVLTAGDGRISKFQEKPARKEAFSHQANTGIYVFEPEIFKYIPAAQFYDFGSQLFPRLVEMGAPFYAVSVQDYWCDVGNIETYRQAHVDVLQGRVAMEPGGI
VQEEGNGQSRVLLGEGVELGDEVKFQGHIVIGRGCRIGSGTIIKDTVIWEQSDIGPASVLKDCTIGRQCKIGSGTIVRPGTVMGSGCKVPGNSILGPSQGL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01033_hypothetical_protein
LEKPASSSFPKTILVIIVLILGSMYYYAAYVDSPEAERTVKEFYSAYFSRDFESVSQNLSVFWSVRLLPQYANLSPVQLLEKRDDIEKATSQTIAEKESQNQIPENISIDIMPDYTQEGSNSAIVVYSFQENGKSSCMELAILIKEKGRFRIFALTPVAPQDLPQIKQESIKELDDSFKNLLSSS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01034_tricarballylate_dehydrogenase
LKQVLAVGGGAAGMMAAAVAAKYGARVFLLEKQSRVGMKLSITGKGRCNLTSAEEDIERFIAGYARNGQFLFTALNAFSNLDLICFFQEHGLDCKIERGQRVFPQSDKASDVVRVLYENLERLGVDVNKSQGVKALLFQDGKAIGVQTQKGKVLADAVIIATGGMSYPRTGSTGDGYRWAAAAGHHIIEPRPGLVPLVVEESWVSELQGLSLRNVRATAWSSKGKKINEDFGEMLFTHFGVSGPI
ILSMSRDIAEELFQQEKVRLVLDLKPALNEETLDQRLQRDLALYSRRQFRNSLDDLLPRKLIPLMVRLSGIDPQKASNQVSRQERKKLLQLLKEFELTVVATRPIDEAIVTAGGVDVKEVDPRTMQSRLVKALFFAGEILDIDGYTGGFNLQAAFSTGYLAGKNAALLYG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01035_ATPase_family_associated_with_various_cellular_activities_(AAA)
MARKAVDYKGSSDYIVSDELRNSVNIAIALQKPLLIKGEPGTGKTMLAQSIADSLGLKLIIWNIKSTTKAQEGLYVVYDTVQRLYDSQFGESDVADIKKYIKLGKLGEAFLASEPVVLLIDEIDKADLEFPNDLLWELDQMSFYIPETREIITAANRPIVIITSNAEKELPDAFLRRCIFHYIAFPDPEGMEKIVAVHHPRLEKRLLEQAMETFYMLRNIPNLQKRPSTSELIDWLQALVIGGISPNKIKQDLPFLG
VLLKKNEDLDIILNQLHGKAQSRVQNAKGSFNRYR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01036_VWA_domain_containing_CoxE-like_protein
MFTKFYYTLKDFGIPVSFNEWQLLLEALEAGMAGSSLTGFYYLCRAVLVKTEAHYDRFDQAFASFFGDIETPEGLPEKIWEWLDKELPEMEVTEAMKANHQQLDLDELKRMLEERLAEQNEEHHGGNRWIGTGGTSPFGHSGYHPGGIRIGGNTRSLSAVKVAGMRKYQEFRTDETLGVRQFQVALRKLRQFTTRLDGARTELDLDGTIDKTCNNAGRLELVWERPRENGIKVLLLMDSGGS
MVSYSRLCNQLFTAVNRSNHFKDLKIFYFHNCIYDWLYHGPRCSLTDYTETEYVLKTYDSDYRLIIVGDASMSSYELMRVGGIIEWGLYNDKPGIDWLRRMRQHFEYSVWLNPIPKNYWNWMEGTFTISKIAEIFPMESLTVEGLETAINKLRSRQAVQL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01037_Phytochrome-like_protein_cph1
MIENNLLPLMIELNENTDIMIAVIRGSKFAYINPTLQKNSGYSLEELYSMNFWDIAHPDYSDLLRQRGWARQRGEEVQDSYELLLLGKQGNSFWAHIKAKNISIEGEPAVIVSAFDINERKAMEVDLLRQKESLQLMLENNPVATALVNPEGKTLYVNPRFIKYTGYSREEVSSSLVWEEKVLADMPKRREIMKAWNRNLKETGYSKGKIVLRRRDGERRFFNIHSVALPDGHILLAAWDISEQVEARKI
LQESEARFKALSEASFEGIIISENGICIEANQAAVELFGYSREELIGLDVMSFTAPEAREIVKSQMMSGSKDSYEAVALRQDGSRVPVEIQGRSFIYQDREVRAAAIRDLSERRRAEEEIYRQSTNLQALFYNTLDAVVLCDPVHRILDINPRFFELFDYTIEECRGSILEEVLVPEELKEESAFMSSMVSSGQANSRESVRKKKNGELLPVLVTMIPIANSGYYVLYTNISERKEAEATIQQQIKELEAKNAEMERFT
YTVSHDLRSPLITIKGFSGLLLQDLEKGKTARLQKDIQRIINASGKMEELLEDLLELSRIGRILNPYSNFPMNRLCHEVVELLSGPISQKKAEVVIAPYMPWVQGDRRRIAEVVQNLLENAIKFMGTNDHPRIEIGCFSGEGECGFFINDNGSGIEAKYQEKIFGLFDKLDQSTEGTGIGLALVKRIIELHQGRIWVESAGAGQGSTFYFTLPAATDSKKGDK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01038_Response_regulator_rcp1
MMDESMLNILLVEDNEDHAELIMRSLEEQQIKSHVIHVTDGEQALNYLFGRGEYSEVEKYPRPNLILLDLRLPKVDGLGVLKEIKQAEELKIIPTVVLTSSESENDIYRAYNYYANSFLVKPMDFQQFNELMLKLGRYWLKCNANPVR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01039_Cyclic_di-GMP_phosphodiesterase_response_regulator_RpfG
MKERISVLIVEDDELHTELIQRAFEDHQSRFMLRFSSNLMEARIYMEERKPDIVVCDWLLPDGRGIELFSPDKEHSSYPIIMMTSYGNEELAVETIKAGALDYLVKSPEAFAGLPDFILRGLREWEHIRARHAAEKKLRDVLLQTVESLASMLEKRDPYTSGHQKKVSVLACAIAEEMGLPAEIIEGIHIAAILHDIGKISIPAEFLSKPGRLSPIEFDIIKTHPFNAYEMLKAIDFPYPVAQIILQHHEKMDGSGY
PYGLLGPDILLEARIISVADVVEAISSHRPYRPALGIQYALEEIAQNAGKLYDREVVEACLTLFREKGFSLDDFVRD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01040_1,2-epoxyphenylacetyl-CoA_isomerase
MNYDYQTIKTEKMEKGILLVSLNRPEKYNAMNMLMLNELNDLWLKLKRDLETRVVILKGEGEKGFCAGMEVADIIKPQVMADIPAMYDLQMPIGELQINMRNCPQPIICAVHGAAAGAGFSFAIASDIRVISPDARFSAAYVNVGLAGADMGSSYFLPRIIGSGRAYEFLYTGAWMNAEEAMQLGFASRCVEKEKLFDTALEIAQAIAKKDPLAMKLTKEAVNLNIDIGSLEAAIVMENRNQNMMIS
LLANRMKK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01041_Organic_hydroperoxide_resistance_transcriptional_regulator
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01043_Electron_transfer_flavoprotein-ubiquinone_oxidoreductase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01044_ferredoxin-like_protein_FixX
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01045_Electron_transfer_flavoprotein_small_subunit
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01046_Electron_transfer_flavoprotein_large_subunit
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01050_putative_regulatory_protein,_FmdB_family
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01082_putative_nucleotidyltransferases
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01083_HEPN_domain_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01084_hypothetical_protein
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GAVAIGQLAEAAVVVFLFSLGNALQGYSMDKTRNSVRALMDLAPAEALVRRNDLEQVMPVESIVVGDIFIVRPGEKIAMDGVILKGSSALNEASITGESIPVDKGPGERVYAGTMNSWGALEVEVERLAEDNTINRIIAMIEEAEEQRAPSQQFVDRFARYYTPVVILAAILVALLPPLLFGQPGEKWFYEALAMLLVACPCALIISTPVAIVSAIGAAARNGVLVKGGVHLEEMGRIKVLAFDKTGTLTR
GKPRITDIISSSELGENEVLRRAASLEARSEHPLAETVVEQARKLGLELAEVSNFRAMSGRGAAAEIGGKSCYVGNQRLFSEVGIAIQGQEELIAELEGAGKTLILLGDEKELLGIIALADELRENSREAIRQLKKKGIKKNIIILSGDNERAARAMALSANVDEYQAGLLPEDKVQAVRALLEKYEKVAMVGDGVNDAPALAISTVGIAMGVAGSDAALETADIALMADDLSRLPYTVELGRRTLRIIRQNIVF
SLLLKAAILSLVIPGWLTLWLAVAGDMGTSLLVTLNGMRLTRVKA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01086_Exodeoxyribonuclease_V_alpha_chain
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GKFPFLPEAGEESDFYFMEEKDAEKALQKILGLCRSRIPRYFNFHPIRDIQVLTPMNRGLIGVSNLNVELQQVLNPRQPGISRGGRNFKIGDKVMQLVNNYDKGVYNGDIGWVKRFDVEEQELEVEFEDYPVSYDFSQLDELQLAYACSIHKAQGSEYPAVIIPLLEQHYILLQRNLLYTGVTRARKLVIIIGSKKALHIAINNDKPRSRDTGLKERLMKMGVVEIAQQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01087_2-succinyl-6-hydroxy-2,4-cyclohexadiene-1-carboxylate_synthase
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GAIAELVHGRGNK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01088_Sulfite_exporter_TauE/SafE
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01089_homoserine/Threonine_efflux_protein
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NSILYAPSLTSSPVKMAAERAFQMAGLIPGDIELLSLYDCYPITVLITLEDAGFCPKGSGGDFVESTDLTYRGSLPCNTHGGQLSCGQASYAGGMSHLTEAVRQLRGEAGKRQVKKNHLAFVNGNGGVFSTECSLILGREG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01091_putative_nucleic-acid-binding_protein_containing_a_Zn-ribbon
MEYREFYQKKLDEGELYLQFCPDCQDYIFYPRSLCPKCLKSDWEWRKLSGKAVLYSYTVVHYSALPEFKEDTPYVLALVELAEGPRMLAHLPGLPFDELQVGLALQLSSINREGRRIPAFQVVPN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01092_HAD_hydrolase,_family_IB
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01096_D-alanyl-lipoteichoic_acid_biosynthesis_protein_DltB
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01097_spore_cortex-lytic_enzyme
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ISILNSYDLVCEGTVDDYLAIHKDIMLSILKYDNAEIHMFSDLEGFVNNLDNYKDRVHYAPAGGDLICNGLKTGAYKVTPENIDERLRLHLKSMAESFEIPFLKEGFTGDDVLEMQQQLIALGYNCQANKMYDGQTRDMVAEFQADHRLEVTGIATAETRALLQELSGKGDRRTVLFERSNSRI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01098_Putative_anti-sigma_factor_antagonist_BtrV
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01099_multidrug_efflux_pump_VmrA
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LILAVGGPIAVASFAFVNSVNTLAQAIISGISQTVSPLVGVFYGERDVLSIKKVVFLAFRYGIITMAIFSISVSLLAEPICLAFNLSSPEQLRIAVPALIISSISLLGAVANNIFVYYYMTIGRTSIANRITLCRGFLFIIPAAGAMAQAMGILGIWAAFSISELLTLLMTILTVRKTLLKEPDLRGLLLLNYRDVAEGRFIAFSLDSNNQSVLESSDKISEFCTSCKLNSKQSMVISLAIEEILLLMVQHIFVDKKNKSIDVRIFV
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LCEAPNIRPYDRDYASLEEVVKHLLDLKIFIISDGSSGFKAIPPVRFADYIARERWSEADLSCFRSLEPVAVSRHGTVEIRQTCTQPLADSFAPAAFYTGIAENITVASELVHDFWQDNQINISNSQLRRQAVSREMAIPADRLREFINNLLAIAAAGLKKRKRGEDKYLGRFLKPDHEVKSPAQRQLDLLQEGWSFQEIMLACSALDESGNSIWDNDMNRGKGEADGLPV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01103_Serine/threonine-protein_kinase_BtrW
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01104_RNA_polymerase_sigma_factor_SigX
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YQEVTTLPFDGIGLDFIEGNHSLELVKHFGFPADKTLFAGVVNGKNIWRNNYSQTLLILDELKKTRATIVLNTSCSLLHVPYTIKNEESLTDEFKKHFAFAEEKMGELADLKKITASNTPAEITEYIKNTRLFKESRFCTDASVQAAVSSLTPEDFIRHPAFHEREKIQKAVYNLPLLPTTTIGSFPQTAEVKANRSAFKNGKITSKHYIEFNKKKIAECVALQEKIGLDVLVHGEFERNDMVEYFGECLNGF
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RSLQL*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01115_Arsenical_pump-driving_ATPase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01117_arsenical-resistance_protein
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GYAELNSRLAPDIAVLEGGYSVETALPYVNMGLIMAMAGIDYSNLREPDYNPSRFKESPRNMEYIKKMVAQQWNAYKNREETIADNRKKSGNFVNYNKSIFYDTEYIYEDQINHLRICQNCGGFRMIESRAHQRTGEHFHVFCISIPANACQQCQEEGRAAYQDMIKKRPFDLLYLQDRVKDDLRIYKVHKDTETVL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01159_DNA_mismatch_repair_protein_MutL
MAIKLLDDNVINKIAAGEVIERPASVVKELLENAIDAASRNIAVKISGAGLDSIEVADDGEGISMEELPLAFLRHATSKIENEGDLLRIMSMGFRGEALPSIASVARMDIYSKKEKQDGIHCFIEGGKILDLEYFPCPEGSKIIVSDLFFNTPARKKFLRSPATEGNNAYELVIKYALARPDIAISFSNEKRQLFRTPGNGSLNDAVIAIFGRDFLEPLIPVKWEGLSLGISGLISPPGVARMNRKRQLIFVNQRPVRS
PLLYRALDEGYRGLLLAREQPLVILQISLAPDSIDVNVHPQKSEVRFRDEQSIFRSLRGLLRDTLNAGDYRLQDSLPQNRPPSFYPAAGRKTAGQKVEEQPVIPFMHDSKAYKRVEETGGEAWLPLSPEEQALSSRSPAYDEFKILGQLWDSYILLEKEQTFYIVDQHAAHERIIYSRLQQFYAGSRGEMQMLAFPLLMDLSLRDMELLEKNQEILGELGFDLQQAGPRSIFLRGTPALIAGQEREVLFEI
LELLAGGQGINLKNEAIIKMACKKAVKAGTRLDYREMRKIIQELFVTDDYKNCPHGRPTIIAWKQADLERMFKR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01160_putative_methyltransferase
VKIIATTTQSQTTLCPEYKQFLEETGLPFIPRERRSLEAIAREQEAQAVLVWQASGPILHMGLERFFFHPSMAKNRIASYRQLGTIDPLIKACALEADSSFLDCTLGLGADSIVAAYYAHEGRVVGLESSPLIAAIVKWGMKVYHSKMSWLNQAIHSIQAVNAEHYDYLRKLEDNSFDIVYFDPMFRKPRYKSTALAPLRLLANHQALSREVIAEACRVARKRVVVKEMPVSREFERLGIEQLMENPNNPIA
FGVIQV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01161_tRNA_dimethylallyltransferase
MHKLAAIVGPTAVGKTNISLEAARQINGEIISCDSMQLYRGMDIGTAKASQEEQSLVAHHLVDIADPHENFTVARYQSLVKDLISAINARGKIPILVGGTGLYYQSVVDDYSFFPMEVRQSIRDKWNNIIQEKGLHHAYRWLEQIDPAYAQIISPNDQKRVVRALEVYELTGKAFSTLQDRAENTYYLAAVGLYLERRELYARIERRVDEMIKKGLIEEVAALREKGIDLSNNSMQALGYKQVFYFLEGFI
NREEMLNEIKRETRRYAKRQLTWFKKDQRIKWFNVGDFSDEELLVKKICTFMEGQFAIV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01162_Host_factor-I_protein
MSKSQINLQDAFLNQVRKDKIPVTVFLVNGFQIKGMVRGFDNFTVIIEVDQKQQLVYKHAISTVAPLRPISMMNLEARSDDD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01163_hypothetical_protein
MRKRKPSAEQMIDVFDASFTKRFLFNSNLDAKEHTKLVKYALNYMKNEALILHYNNIKNNYFISINRSLCLLDAEFNALKTTMDYDQIYEIINMFMDDFAKLWHRTSSADIEIIVLG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01164_hypothetical_protein
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HCAPHPEAMELLLRINEQPLRSDYDSWDYVPSLLQSLAEYLPDSRVKELFEAILKDPDSQYADLVKDLLSRIK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01165_5-methylcytosine-specific_restriction_enzyme_subunit_McrC
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DRVYCQYQKFSMDCRENRILKAAMEKSMRYLDSRGLTLERAVEWYHYCASILAPVALCEIGRQDFIGLKFNGVFKHYKSPIKHAERVLKGVSLILQDTESKSREAIPPYYINMNMLFEFYVRSLFRKAIKEKKLNAELHPYISFEQMKKDEKNPNKDELQTFKGKKPQKGLLSPFLIPDIWIRRDDDNKDNDNKNIVIDVKYKNTESNNYNARADTHQILAYGKKFDACVMGMVYPCSGNKCSETCSK
NKCLEPFIINNKLKKDKLVIIRLPMNEDKKNWHYCTIKAAICENILR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01166_5-methylcytosine-specific_restriction_enzyme_B
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ELRNKIASYQKMEELKKQAEDVQESPDNGNAKLNEAVDYINQMLSINSSNDLVKKDTFREHYNSVKDYIDKQFENTKEALKEALKKITENNGAEETIADNGAEETITIAKLINKFSEKYKECKTCIPLYVLIIDEINRAPLASVLGELIYALEYRGEEVATPYIIDSSNKLEIPPNLFIIGTMNTADRSIGSIDYAVRRRFAFINLPPDKTIIKEFYDKIKDDLSSTNSQQDNKKIEKIEKIEELANKALALFNSVEKIF
NPEKHNPEESYLDPEFYAEDVQIGHTYFLAKDDAELKHKFIYQVIPVLKEYLKDGILKNNTTLKFNSTGIKLSNSFTEIKSEIESTWSQIK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01167_5-methylcytosine-specific_restriction_enzyme_B
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EDLVRGIMVDTSGGNAQYQTQEKILASMAKAAMAETLSLFRISRLLYDYLQQFMYIDIDFDVYVEDCFAWLKCTDNNSKEIYNCKLSELIKEYQKIPKNIRKQAPPYILIIDEINRAPLAAVLGELIYGLEYRGESIKSPYAIDGDYDFMIPDNLYIIGTMNTADRTIGSIDYAVRRRFAFFPCPSRADDLPMPTDNKGKKDKNGRDLYNLIEDHFFTDKTLPAWVKKDDIMPGPAYFRADSEELYFKMKY
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01168_nucleoside_triphosphate_pyrophosphohydrolase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01169_hypothetical_protein
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RVEANKFAYPKDFSLDSYMDGKWGILTDANEQPGRVRLKFSPDVAARVSRLCYHPSQKLIDTLENGALILEFEVSGMLELQSWILQWGTRVEVLEPDHLRQMLKDTIQGMAAVYEE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01170_putative_ATPase_YjoB
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LVVFTGEIPSDQINSLFGKPFEELLQETANLKGGKFTGDQRVIKLIKPLGLNDLVLDDEVEHKIENDLLSFFSMEPLYRQANLPFKRGIVLHGPPGTGKTSLVKVMVSTMQQTIIWVKTGDISCVEQITQIFRLARLGKPSVIIFEDVDFFLSDRDRYYDTTKAVANLMAELDGLEENDGIMVVMTTNRLDVLEKAIVERPGRIDERILIGKLCRDKVIELLERKLKYFHWKDFSRLSKVLPENLVLTGAM
TCELATLIIKYALKESKSSQIEIYSNHIGQALRDLEEVEQMQMRRAGFAV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01171_hypothetical_protein
LKLIDNEERLCIPLYHGTSTCMLESIKEYGLGGRNIIEEYKVLDFLEYTYNLARSGNYISEPDYLIKLILNQRVTEAGYNFRHGQVYLTPSLDTAKRYKKNLYGSEIISHLVDLFTKYPNNNNDDVFNDNHPLFHFLRETPEPRPLVLKIPQLHISALLEGENGQPVLEVLDKLRKAMYCSELAFEIFSQQNNFVLGQVIPFDKLEIVS*
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LTEGQRVFMVREDLSRVIDDLFCDSQILSQDNKVFTAKKAGHASISIQTRRTDELGDEPDSYDYFFIVKNAVQSYSGYATT*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01173_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01174_putative_phosphoesterase_or_phosphohydrolase
MAVYYIADPHFGHNAIIRLNNRPFEAVEEMDNTMLSNWRSIVRPDDEVYIVGDLIFRAKNPPEHYLDRLTGKKHLILGNHDKWSKHVELDKYFESVSQIKEITDAGRHIVLCHFPMVEWPRSHHNSVLVFGHIHNRTAGDGFNYYLKHENMLNAGVDINHYCPVTYHQLVANNEYFREINKQDSHGNGE*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01176_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01178_phosphodiesterase
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IKEKTQFNPGLARGLDIYTGTVFEVFLENSSITSSIASGGRYDRIIGNFLGDGAEYPALGMSFGLDVIFQALQEQQGRPI*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01181_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01182_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01183_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01185_Histidine--tRNA_ligase
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EKTQFNPGLARGLDIYTGTVFEVFLENSSITSSIASGGRYDRIIGKFLGDGAEYPAVGMSFGLDVIFQALLEQGTAGQTNIDVFIIPLDTGVEALKLAQALRKKRVRVLVEMKERRLKKSLDYANKSLIPFVIVLGSQEVETGIISLKNMLSGADVTISIQELTSNPQAFLEPTI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01186_Stage_V_sporulation_protein_K
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TVDRYIRGLTDSLILYEATRYNIKGKQFLTTQSKYYAVDVGLRNVLVRGKESDVGHILENIVFLELRRRGYEVYVGQLADGGEVDFVAISPDDFAYYQVAATTLEETLKRELAPFKKIADNYPKYLLTLDEPFGTADYDGIQKRNVVDWLLKE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01188_putative_addiction_module_component
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01189_hypothetical_protein
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ELYHELG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01190_hypothetical_protein
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EASEAITQQKFNLLDLEGISEALSSLGAKVWTIAIAQEKLDDVINNSNINKAQLTKVTDRFKTKIHLEATEVDIIIRNRLLNKKTAAEDKLRVHYNKNSGKISDHAALTGIGIIKTDTLDSYLTYYPFYQYQFNLLQNFLFGTKGYASSKVAARGMIITTYDILKRELAEKELFATATGWQINKQAQPQPPAHLVNRYDNAERILKERSSTISGRRLLETINFLNEAEVGPTTTISNIIKSYIDDPEDYHKVYEHI
VKALDDLVEAKILLSTNNTYRITSDLEQRLLEEMNRFIVQGFVKKKNAVTAYKDSSFIKTLARITDSNLPYDFYISTDNDDELTNPALKELKIKVKSVYNQGDNRSADIETLKAQSQNDKDLIWLLPDNSSFPELDRLIDEIQRITYLEENYNNPQSEEAGIIRNFSTAKGEKENRVKELIERSLHNATAIYLYNTYQLDQDNWQTTLQNLQRNVIQNVYFKRLTAQLNDEVAGRVIKEANNTRLRTYFA
GSEFQFFDAQGNFIGENLKAAEEILFKIKNTFADGDTLAKELGKPPTGFAFGTVISTVAALMRGGKIIAKYNGMEKFSWRDEGVSTIFTTAREFRKASFKAIAKSLSAQQKNDVVTILQESKCEQRIDKKIDWNTNDFDLANASKELAKMFCNKADEMRKQNPDFDLLFADINEQKKTLGEFTGVVSEANYIERAENFLTRKDTFTSAVKAIEKAEKFIHSKLPKLRQWYAFADGVKDELNKSARSNET
LTRLIWEFHNLYGQEVVKNFAALQETAQKIKDEYYALLSSAAGDMAGKYSQLKTAAEAVIEEINRLPTGLNDEALVKAETLLHYAEQRMLANVEIDFEVQDKHSHFTYSEMLSFIELYNTKKTELEIIRAGLIKEAPPEPKPGGSVPETITHTTRLPGLRLKVGRYKKWLQQEMHKMAAVSDNDEIEIRKG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01192_type_II_restriction_m6_adenine_DNA_methyltransferase,_Alw26I/Eco31I/Esp3I_family
MKLAEHVEHIRQIIDQAFRNTLGRMGITATVLQPLENLSQQFHLDRIRIEDVFENFAAETGSVADAYEKLVEELTFTLFNRLAALKVMEAHGLNSPILTRSSQHGDRSFAHFLWLEQNPEGRNEEQEGLLPFIEEQLNTLSADIPLFSPQYPYHLLPTAIELRDIIDAFNAVEKDEQVEADIWKSDDVLGWLYESYNNYKKAAHKESKAKTEYNKVSIQSQVYTPGWVVKFLVDNSLGKLYLEMYPDST
IKEKYKIANAPAKPNRERKPLTEIRLIDPACGSGNFLLYAFDLLYDLYIDQINNYGADYDDDEIPELIIRHNLHGIDIDDRAVQLAQLGLHIKVKRQNRSVKIEHFNIVSSDFFLLDYPEVKHLFENGEKLSLELENIVTEMWDELQQAYKFGSLIRLEEKFSLRMQELVQQWDEGRLFKEQTLANYEQFRENFFTGLQNAVAHNTAKQGINFLNSKTGDAIRFLELLTQKYDVAVANPPYTDSSDFGPEL
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YLVLNYKDIDYAGETLQQGALKLFAEFEQVLQDKIAQLLNMGYKEVHLVTDHGFVLTGLLDEADKIAPDADGNKDVHERFIRTQDKPDNPDWLIFEKPYGEYKYLCAAKSHRPFKSKGAYGFAHGGFTPQEIILPRFVFRKDGFATSSLGVAISNKTELAEVAGEIFVIKLQADAGATDLFAFKRKVKILLYDDNINCGSSNLINMEPGKTETVEFTFDDRQTLKAVLLDAETQEQLDIVTIKKSSVR
DLGGLL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01194_Lon_protease
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01195_AP-4-A_phosphorylase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01196_UvsW_helicase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01205_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01208_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01211_Glutamine_synthetase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01213_tRNA_2-thiocytidine_biosynthesis_protein_TtcA
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01220_(dimethylallyl)adenosine_tRNA_methylthiotransferase
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MACPGGCIGGGGQPITKANVKRVERIEAIYAEDEGLPLRKSHDNPEVKTLYEEFLHEPLGHKSHELLHTHYHPKNKKFL*
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GTYTDGINEIHVLIDEIGARPLFREIPIQPGSHNGGAILGSRLIISLSGNPAACAVGYHLFAAPVLRALQGIEPLLPRVNAICSSSYAKKTGSRRFIRALASPREDGWTVSILPGQKPSMIRSLVDCNALIDLPPGHPPMEAGSEVSILLLLDRSAV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01231_bifunctional_molybdenum_cofactor_biosynthesis_protein_MoaC/MogA
MRKVPVNEAIGQVLGHDIIKIIPGREKCRAFRRGQIISAADVPLLQNLGKEHIYIWEAGDELIHEDEAALRLAQSASGPGINLSEPSHGRVNLMAAYDGLLKIQVDQLHWINNLDSVIFATLHNNRTVVKEQKLAGTRVVPLAVEHSLVEEAEKLCSNPRPLISVKPFKNLWTAVITTGNEVCYGRIKDGFGRVIRKKITPFGGRFMSQTIVPDSPEIIAAEIKRFIGEGADFIIITGGMSVDPDDVTPLGIKA
SGAEVVFYGAPVLPGSQFMLAYQGHVPICGVPGGALYSKFTTLDLLLPRIFAEERINRSEIVALGHGGFCEECKVCHFPACPFGKATYL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01232_Formate_dehydrogenase_H
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LGENPVLTDPNSHHIRGGLEALEFLVVQELFLTETAEYADVILPAASFAECDGTFSNTERRVQRVRKAIEPIPGRANWQTICEMVSRMGYPMNYASPREIWDEMASLAPSMAGINYDRLEELGSLQWPCPTTDHPGTQFMHVGKFTRGLGLFQPSDHIPPGEMPDEDYPFLLSTGRILQHYNVTTPYSMGIMSVWDKEMAELNPADAEKMGIKTGDKLKVTSRRGEVVTAVRVTDRVMPGIIW
MSFHYSETPTNALTSHHLDPITGTGEYKVCAVKLEKI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01233_Putative_formate_dehydrogenase
VELIKITIDGKEVEVPAGTTIMKAADSVGINIPRLCYDPDLSALGACRLCVVEVEGNRLLPASCVTPIFPGMVVKTNSPAVVEARKTILELLVANHPLDCMTCDKLGNCKLADYCYQYGVKESPFVGEKHEYAIDDTNPFILRDMNKCILCGACVRACEEMTGQDNLSYLNRGFHRKATTAGDVDYIDSDCVFCGQCVAVCPTGALQEKTMVGQGRRWEIDRVRTTCPFCGTGCNFDLAVKNG
KVIGVLSNPDSTVNQRSLCVKGRFGWDFIYNEKRLTTPLIKKNGKFEEASWDEAFDLIAQRFGEIKAQYGSESFAALSSARCTNEENYLVQKFTRAVMGNNNVDHCART*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01236_formate_dehydrogenase_accessory_protein
LSDALLFEEKDILIYRQGEVRPYRDTLVIEVPLTVYANGQELSTLVCSPQGYKELGVGYLLNEGLISDPADIQDIHHDSNKGILFIEGKIDTPSNGYGHKRYFPEDNETLNSSFYFAKDACQIKPVKSDFRIPASQLLQLISLLEEKSLTFRRTGGVHSAALADNSGLIVRYEDIGRHNAVDKVMGYAFLNGISLDDKCLVLSGRVASEIMFKVARRGIPLILSRSAAMLLAVELAEKLGICIAGFTRGEQFNVY
CHPERIIF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01237_CDP-diacylglycerol-serine_O-phosphatidyltransferase
MLLDLITKSFANVLTLMNLVFGSMAIILVQHLHYSWAAIFILFAVFMDGMDGKIARRFGATSELGKELDSLCDLVSFGVAPAVLLYAQVFLESYHLPGLIAALFFIICGALRLARFNVLNIHEYFLGIPITLAGFLLAIISLLADNIYPMVILLLVVFLSLMMISNIKIRKI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01238_putative_NUDIX_hydrolase
MMDKILLEEKLKLMANRRPQILGHKEFLKTAVLLPLAEYQNDLCILFEKRAADLNVQPGEICFPGGQIEAIDQGAKEAAIRETCEELGLNTGDIEVVAPLDIFVSPFNLIVNPFVGKIKDYQKIKINSEVEYVFYVPLNYLLKIEPPCAPLGLKLVLPQGYPYDLIPHGRNYPYRDARYPQYFYLWEKEVIWGLTARILNHFLDLLKA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01239_NAD-dependent_protein_deacetylase
MEKSIDRVVEILDRSHNTVVVTGAGISTEAGIPDFRGPEGIYRKLGENRVMNIINIDFFRNNPLEFYKFYRQYFIFPPVEPGKTHKVLAEMEKTGIVKAIVTQNIDNLHQKAGSQKVIPIHGNGARFICQERNCRFVHDSNYVNTYPEVIPRCSQCGGILKPDVVLFGEHIKNYPDAMDRILGARVLVVIGSSLTVYPLAGFVKEFSTFTQYLIIINKGPTPLDHAAVVKLQDGNTGELLEEIFEKIKKRRSS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01240_NlpC/P60_family_protein
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AIGITNSFTYWFGEHFYEARRVLNSTERSSKSFSDSGPVIPQVYKLPPQGPIIQPEDLPGGF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01241_Papain_family_cysteine_protease
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DNYDRKNFNPEPPKNGAFIVRNSWGTSWGDDGYFYISYYDTGIGSDNAVYYNAESPTKYNIIYQYDPLGWIASVGYRGSTAWFANIFTASSKQQELLAVGWYVGGVSATYQVLVYTDPAANNPRNGKIAKNVSGTITYPGYFTRSFTKPVALKAGQKFSVVVKLSTPGYNFPIPLEMPVDGYTSKAVANKGQSFMSKSGTNWEDITNSWENSNACLKAYVANKSSDA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01242_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01243_Sensor_protein_FixL
MNSFIEVIGIKEENCINCHQCIAVCPVKICSDGSGDVVKFHNHLCIGCGRCIEACIKSHGGNVEKSARFPIDDADDFLNDLDSSEVIALVAPSAQANFNLKKLISALKLLGVKAVYDVSLGAEISIYSYHEAIESGKAKLPLIAQPCPAIVKYIELNHPALIPYLAPVGSPVHNIAVYAKTLHPQAKLAFISPCLAKKGEFHDSQSVEYNVIFQSLTRILAEKDINIDLLEESDFDNYISAGIATNFSTPGGLKESYLFH
YPETLPSSISKIEGSLVFEKYLKDLETAIKEGQADLPLIIDILACEKGCNIGAGCINQGRSITQIERAVNRRMEISSSEAEKTKELKEFLGKITQDLDFSYIFYQDLSANSDIIIPSELQLQQVYKRMYKEEAKDFRNCLACGYNSCLQMAVAVFNGLNKAENCHLYQEKELLREQEILNNMVDELATLNSKLEEEMAERKQQEQLLVQNSKLAAMGEMIGMIAHQWRQPLSSISTLAGNLKIYLDLDMYEKK
QFLSLLEEINHHAQYLSSTINDFRHFFKPDNPEDTVYLNVVIDNTLGIIGKSLEYKNVQLNINTSFSQPILTYPNELMQVFLNILKNASDAFVDNETSYPRIQINGYEKNNYQIVEIIDNAGGIPERILNKIFDPYFSTKGPGIGTGLGLYMSKTIVEEHCEGELIARNTQEGACFTLKFPLR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01244_Cyclic_di-GMP_phosphodiesterase_response_regulator_RpfG
MTIDVKELKERAQGIRVLYVEDDKELRENTARLLATFFSSIDTASNGQEGLEKYNGNCYDLIITDINMPIMNGVKMAAQIKAGNKKEIIIVISAHDEARYLLELINLGVDYFVLKPLDINQFLTALDKAVSLVHFYKMEADYKRALEETVEKRTRELSEALTIVQELTTEVVYRLTAAAELRDSDTGLHNKRLGLYARRLAETLKLPADFVESIAFAAPLHDIGKIGIWDNILLKPGALDAEEFEIMKTHTTT
GASILARSKYEKIRMTESIALTHHERWDGSGYPNGLKGEEIPLEGRIVAICDQYDALRSKRPYKPAFSHFRTMQIITKGDERTRPEYFDPKVLQAFIEIADEFDGIFTSNQD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01246_Endo-1,4-beta-xylanase_A_precursor
VIRRFNSPLLILLSIICLCCSTLFFPASAEATVDLDTLAKKAVQYNYSSYRQGQALDGFDAWVLGKAGAQVSGWVYDGSNIQTTLLATMEEILTDPDKKTADYFGNPAYSYSSKQIAQLNLLARSWGEDEKADALLRVLQNRQNTTLNGSIDNNPFGDISAFEYLALSGDLTRMNSSSAIDYIINNSDPNTGAWTSSWNDVMATTQAIRSLKCLEASTGEKTAEINAAINKALNWLSALQKDDGSFQ
DSGGFDDPLIDSVEVLLTLKTLDIDPASWSSQEGKTILDYLHNEALNTDGSLGTSKNKTDATWVLNACLSLGVQIPADTPLGLSITPATASVEKNGTIAFSALLKLFNGEQNDISRSVNWLVADNNIASIDGGLARGLYEGQTTVTATSNDYEASASLTVRPRSGGGEGESKSSDLVVNIAVVGKNGTLLFGPSSISISTGDRFGLTAMGALNKTGLRWSFSDRWEGLIVEIAGEQNQGMSGWMYSV
NARVPGVLASEQTVSDGDRIIFWYSQDASASSPEWDRLGSGQIYNPEVKEKLPDKQKVLPEIKPELDKQVPTPAARGFFSDVDDSLAWARDAIEILAGRGIIQGRGEHFDPLAPVTRAEFITLIARALGKNTVDYQGIMPQDVSQSDWFYPSLQYCLQEGIISGYPDGSFRAGDSISRQEMACILYRLMKDKQNNNLPASILGDQDSIAPWAIPAVKFVVAEKLMLGYEDGSFRAGQPCSRAEAAVILFR
YLHSIEAAPLK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01247_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01248_Energy-coupling_factor_transporter_transmembrane_protein_EcfT
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QGWTAFNYYPRLSWEFSGSSILTLMTLSLAIPSVLNWGCKRSNSFLSKI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01249_Putative_HMP/thiamine_import_ATP-binding_protein_YkoD
LSYSYPDEKEPALKKINLTLNEGEFVLLSGVSGCGKTTLLRAIAGLVPDFHGGHLAGAIYLDRIPLTRIPHRQRLLKTGIVFQEAERQLLMNTVEAEIAFALENLGFPPALIKRRIMEVAAALDLTDCLPQATATLSGGQKQKVVLASILAWEPEILLLDEPTSQLDPVAAEQILNSIRRLNEDSGLTVILAEQRLERCFHLADRVLVMKNGAIACDEQSFDKLSHWAVKNETSCLPPVARLFAGCAFSKIP
ASIKEGRGVLRSLAPQGDFSPSFSAASPGLGNKLDAERSFEQPVVEVEKVWFRYPEGKEVLKDISFNLKAGEFAVLMGPNGAGKSTILKNLNGLLRPGRGKIKICGRDSKGVPVAELANSIAYLSQNPDDYLFLPTVREEVKFSLQYLAGKDDIDSRSDQVLQRFGLCRLAQLNPRDLSSGERQKVALAAVLASEPRVLLLDEPTRGLDYRHKEELGRILLEMQAEGTAILMVSHDVEFVAEYAAKVIFIT
DGSLLCSGSKYDMLSSSTFYSPQVTKVFRGIAQGIVTLEQAQELLQRILYHRQEAIPRLAGNAGTGEK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01250_putative_membrane_protein
MQLRISLISLGLLGLLLLLSIWPGRSLGNWNWGLLAATILTVALAGFFWQFERRRNSIVQLSFIATISSLAALSRVAFVPIAGLQPASFIIMISGYVFGSQTGFLVGAITALVSNFFLGQGPWTPWQMLAWGICGLLAGCLGQALSAFRLLPFVFLCTFSAFLFGWITNISYWSSFVHPLNWSSYLGSCIASFPFDLIHAAGNLAFSLLFGTHFYQLLFRFQRKMSGYSK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01251_Formate_acetyltransferase
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YFAYLAAVKEQNGAAMSLGRVSTFLDIYLERDLRSGRITENEAQELIDQLVIKLRLVRHLRTLEYSEIFAGDPNWVTESLGGSGTDGRHLVCKTSYRFLQTLKNLGAAPEPNMTILWSRNLPRKFLEFCAKLSISTSALQYENDDLMRDYYGDDYGIACCVSAMRLGKETQLFGARCNLAKLLLYAINGGKDEISGQQVGVEMSVYDGDKLEFDEVMRRFKIQMEWLAELYVNTMNLIHYMHDKY
AFEYMQMALHNTFVKHFMAFGIAGLSVAADSLSAIKYARVRPIKDERGLVSDFAIEGEFPKFGNDDDRVDLLAVEIIHTFIHQLKRHPAYRNAQHTLSILTITSNVMYGKHTGTTPDGRKKGEPLAPGANPLHGREEKGAIAACNSVAKLPYEDARDGISFTFSTVPEALGKSEEERVNNLLALLEGYFVQDAHHMNVNVLNVETLKEAMEHPEKYPDLTIRVSGYAVHFTRLNREQQEEIIMRTFYR
RM*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01252_Pyruvate_formate-lyase_1-activating_enzyme
MIGRIHSIDTFSTLDGPGIRTVVFMQGCHLRCKYCHNPDTWELKSLSAQEYSPEELMEVIRRSKPYFIASGGGLTFSGGEPLLHDDFIKAVFLLCREENISTAIDTSLYVKPAALLTVLPLTDLVLADIKHISEEKSRCLTGMSNSLNLSNLKLINSHHIPIWIRYVIIPAWTDAREDLEEMAAFVGRLEQVERIDLLPYHSLGKHKWDLLGLNYELNGVTAPSPEALEQLKNIISAISGKPVYLK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01253_DegV_domain-containing_protein
VSVKIFTDSTSYISKEMQEELDIEIIPLTVHFSDESFIETEVDYDYFYQKIEKTGEIPTSSQPPPGQFFAAFKKALSHGDHIVGIFISSTMSGTWATALNVKKQLMEQYPGARMEIIDSHTNCMALGLQVVEAARVAKAGGNIDAVVKAAQYIHDRVHFYFVPETLEYLRKGGRIGTASALLGTLLNIRPILTVDMAKGMTHLLEKARGTSNAVKRMLRLMEEDHKKYGLKEIMVHHINAPERAWQLRQ
TLIDRYALPVSILSIGPVIGLHTGLGTIGMVYVA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01254_putative_cation_efflux_system_proteinc/MT2084
LDKFTSSISDFLISKTLKDTYAETNIENPEQRRKIAYLEAWVSIIGNIVLAIIKFIMGILVNSISLIADAVHTASDVLTSLVVIIGFKLAALPADEEHPHGHGRIEFIATLVISLLLVAVGIKFGFDSYKRLMANTPVAGSYFVVAVMLVAGLFKEWMSRFSIDLGQRISSSTLIADAWHHRTDAIASVLVAIAILASKFGYYWVDAVLGFAVSALIVWTGIEIFRESCSKIIGEYDEEQVKRVNQLALKVPGVIAVHDTS
VHDYGANKVVSLHIEVDQGLSVVKAHAIADVVEVSINQYLYTTSTTVHVDWIDNEAQN*
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MKLLRKAPALILILLLLWLPSGCGQQTGKVPGDKDHKEKPAPSTPVAKTADVAVYYLKMTNDDAYLVREVHQIKKSSNLPQLALNELIKGKPLTPGANRVLPPDTKVLGIKIDKGLATVNFSPEVLKANVGASGEALGIASIVNTLTEFPDIQKVSFMVDGQVEKAIDWWGHIGLSEQPFSRNLAVVYEPVIWVSSPTPGETISSPVEISGSARVFEAMVSIRIKDAQGKTLVQDYTAASEGAPGRGIFQ
KEIAFKAPGPGQGQIEVFWLSMKDGSEQDKVIIPVKWK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01256_helix-turn-helix_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01257_Cyclic_di-GMP_phosphodiesterase_response_regulator_RpfG
MDRTWQPLKLLKRIHYDTYLHSLRVAMLAYNIGKEIALSTSELDLLHMSALLHDIGKVKLGNSILDKPGKLNPEEWNEIERHPLYGANILVHDYEIMSNDVIEGVYSHHESFNGDGYPRGLKGESISIYGRVIAIADALDAMTTRRIYKTHTLGFNEAINEVFLCEGTQFDPYICKKVKGLSHV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01258_Sporulation_kinase_E
MNYKNMTKKQLVDELAKLRQKNMELELILKDKECLSTAPESSSPNRWFSTGRAELFVCKSSEQEEIDNSKKKYKFSDLVDIPLLQQFLKSLYEATGLPHALVDIDNNILSGIGWQDICSRFHRACPQSSCRCKESDSYISAHLHDGPYVGYKCLNGLMDYATPIIVEGEHLATVFIGQLLHQPPDEEYFSSQAREYGFDENAYLEALCRVPVIPEEQIETIMKFYIQLGQFLASIGLNRKRQIELAKQAIRK
QEERFRLLWETSNDGFWEWNIEAGKVYYSPRWAEMLGYSFEDCEVDIQNWEKRLHPDDISTAMEAINEHLQERTTVYAAEYRIITESGEEKWILDHGQLVARNAEGQPLTMVGASIDITAFKKVEASLFESQQKFATVFYSSPDIMTISTIKDGRYVEVNDAFVAITGYERNEVIGRCVFDLNIWVVPEERDAVIKQIQENGRVRDFEIELRSKYGETGISLLSGEIVDLGGEEYLITTNRDITERKQMEE
ALRLSEECLFKAFNTSPIIMAITTLEEGMFIKANKAFACIVGYDHEEVIGRTSLEIGFWLNPLERDLLKQSIVAGQSVRDMEIVFGNIYGEQKLGLLSAEGLDIDGKPCLLSVLTDITELRRMEVEMTRLDRLNLVGEMAASIGHEIRNPMTTVRGYLQIMRENKDNIQELEYFNLMIEELDRANAIITDFLSLAKNKMVDMKPGDLNAIINKLLPLIQAKALSRDQYIKLELGEIPYLLLDNKEVHQLILNL
VNNGLESMSLPGYVTIKTYMEDEAVVLAVQDQGQGIDPSLLDKLGTPFLTTKDNGTGLGLAVCYRIAEQHNAKINVETSINGSTFYLKFPGETGEEPMV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01259_CRISPR-associated_endoribonuclease_Cas6
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01260_CRISPR-associated_protein,_family
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QLIFASQLKDYTKNLNICSSCMEKLQAGEVFLQEQLSTRIAGFTVYIIPHLVYGESVDPSTMKNLAQKLLLTVNMAKSIDALEDFRNRLEELKEIENIYYLIDFAFVRSSNAATKILRLVKDVRPSFFENLDVSVAQLQELANKHFKNNYHYRGGLEQVYYLTPIRLKQGNASSFRELLALYDALFTNRSIDKKRIIKNLAEALAICFYEKEGFNIRQKQQYINYLTLDGVFLLEFFKRMGCLKGGEGMDYRT
LNLNDSIKGFMADMHYDEEQAALFLLGYLLGQVGNAQYRRASEKGADTTYKPVLNKINFNGIDKSKIIRLRSDVFNKLRQEKVLVYNERIFAECTRLMDKNINDWKMNKDENLFYVLSGYAFGTTLPVKKKGDNSDEQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01261_CRISPR-associated_protein_Cas7/Csh2,_subtype_I-B/HMARI
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GLIKEIRMFQSNELRMLDNGVEKTASDIFSAFTNIPV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01262_CRISPR-associated_protein_Cas5,_subtype_I-B/HMARI
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01263_CRISPR-associated_nuclease/helicase_Cas3
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DIFRRVQTNMELFADTQRIFTITSPTGSGKTWTGFCAATKLRDRLGGNRKIVYVLPFTSIIDQNYKSIQELFHNSGEITDKERFYLLKHHHLSGQVKEENEEGYDPASSPVFEQLLTEDWQSAVIVTTFVQFFESMISVRNRMLKKFHNYAGSIFLIDEIQALDIKYYPLVEYVLNILCREYDSRVILMTATRPVIFGSSPNDRLPAMELLENYPDYYSRFNRTCLIPKLDKIGLEDFVQEIAALIKDETSCMV
VCNTIKSSLRVFSLLKKIFGEKRKVYYLSTNLVPAQRADRIDKIAADLEDGENLILVSTQVVEAGVDLDFDIVVRDFAPLDSIIQCAGRCNRGGIMFSYNRGIVYLFNVVNEKGDDYASFIYGTSNLILTKELLRGRDRIEEREYLSLIEAFYNMIKKEISTQPAHDLIAALENFNMSRDGVSGFSLIKNNSGYIDVLFRYNSRVEEAYQRFWEVIGIKDFQEKRNEYLKIKTILQKYTISLPAQFTDVFEKRPLGES
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01267_Sporulation_protein_YunB
MFGPRINWLPIVLVLILFASIIMTLALLDFELKSSILAIARSKAQIQAVESINQIVAKKIVAQIQYTDIVYVHKDEQGRVVLIQPNTIELNRLMTETMVEVTRAMSSMQENTISIPLGQLTGSRILAGYGPKIKVKTIPVSQINVNILNKFEQAAINQSRHLIYFQIEGRIKVAVPFLDDEVKISTTIPLAETIIVGEVPKTYVNFSGSGSGLNSLLGE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01268_Glutamate--tRNA_ligase_2
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SKLSKRHGAISVQEFKNQGYLPEALVNYLALLGWSTGKDIDIWNREEMMREFSLEHISKSPAIYDLEKLAWMNGQYMMRLDIENLMTLLAPQARQRGWLNEDNSDYFQQAVELVRNRAKTRDELLDALGYFFEEVKQYDEKGVKKHFGQQKASTMLSEVLEIVSNMGSFSAAELEEAFRQRAQELEIKAADLIHPTRLALSGRTATPGLFELMEVLGQEKCISRLEKALVFIAQLTTHGPEGPNH*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01269_monoglyceride_lipase
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TFLTRGR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01270_hypothetical_protein
MKQVAARCLLCGKTYDVEEDHKDFKKLSEQAKEVPSFICDFCSNRVRHESDEKRKEKKPI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01271_Putative_methyl-accepting_chemotaxis_protein_YoaH
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DEPAQLALMVNSMVEKISELIGKTRRLAESVGEASGILLQTCEMSSTQMQDMTVKANDMNNSANSQADLTDRSKVVIGEMSEVIQQVARNSQEVSSSTMVANSKAQEGEKQVEKAIEQMGVISHTVNSTAQIVQGLGEKSQEINQIVDLITNIANQTNLLALNAAIEAARAGEQGKGFAVVAEEVRKLAEESGEAAKRIAGLIKEVQNEAVRAVKAMEEGTKEVAYGTEAVASAGEAFELIIKGVTEI
SEEIQEMSAASEEMAASAETALESIEKTSAAAEDNLGYTRMIGQLAEEQMASVEEVNASIESLNKIVIEMEEAISYFKV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01272_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01273_Lon_protease
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EEKSPLSLFRLIDRRSSLRRYQVNLIVDNSELKHSPVVFESNPTYANLFGQIEYEGEFGILATDFSKIKAGAIHRANGGYLILRVYDVVKNYYVWDALKRCLINQQIVVENLNRMLGISNTETLQPQPIPARLKVVLIGEPLYYYLLYNWDEEFKRLFRIRADFDIEVGKSRKRIKEYACFISSVCRKEGLKHFDPQAVAAVVDYAARLAEDQNKISTMLNKVVEIVIEADCWANYERAELVGLEHVKKAIREKK
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RELVLPDRAINERRRPRKSRRRKGHE*
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RLLNELGPRVIKADTGMSFSF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01275_putative_membrane_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01276_Inner_membrane_protein_YgaZ
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01278_Penicillin-binding_protein_2D
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KKYGEQMIYQGGLKVYTSLDLYMQRAANQALQSGLENYDPNLQAALVAVDPGSGGIRALIGGRDYASSTFNRVFSKRQPGSTFKPFMYSLALYSGFTAADKIMCEEVEYELPNGDIYRPGDYGKEPYHWREFTLKEAVMKSDNVVAVRVNSILGPTAAASYAEKFGFSNIQPVLSLPLGASEVRPIDMALAYAVFANRGIYSNANYILKVTDRNGKVLEENYPQQRRVIGEDNAYIITNILEGVLEAG
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01279_Putative_pit_accessory_protein
LRLFGTKDEQLFMLFSESARVVVRGGDILQNVVNDYNDLDIKMAKLTAMEHEGDRIIQELIRRLNTSFILPFDREDAFQLAQKLSTTLDYITGIIDRMILYKTGRPNKRVKEMVNVLCEALLLQERALKLLQSLEHNKREILECCEEIRQLERKQDNHYRQGLALLFENEEEPIVIIKWREVYEHIEMAQDYVQDVAELISNICVKYS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01280_Oxygen-independent_coproporphyrinogen-III_oxidase_1
MRYEGSVYRPPSEARSYILQVTLGCSHNRCTFCSMYKDKKYRVRSLDEVMADIRMAKLYYGDLEKVFLADGDALAVETGDLVKIIAELKKNFYSLRHIGIYASPDSILSKEMEELKRLKEAGLTIAYLGVETGDPELLKDIKKGVTYEEMVEAGKKIREAGILLSVTVLLGLAGRTPQAVDHARKTAQILNEMNPDYVGALTLMLEPRTPLYRQMQRGEFELPGPFEILDEMRIMIENLELEGTEFRSNH
ASNYLPIKGRFPEDKENILALINTIINRNDASYLRPDYLRAL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01281_Small,_acid-soluble_spore_proteins,_alpha/beta_type
LSRKRGLMSEQLKYEIARELGVDQLVSTQGWGAVSSRDCGSMVSKAIEMAERSISNQL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01282_putative_Mg(2+)_transport_ATPase
MEIWVGRIVLAAIMGFILGVSTDRSISTTRTYAITCMAAALLTIVSNEFFRNLGHPYYSDPGRLSAQIISAIGFIGTGLIWMAEDKPSGSGLSLAASLWITAILGMLIGAGLQQAVVLATFLVIIIICFSDRLIRCKDYLWRILSGKHRIDKGE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01283_Inosine-5'-monophosphate_dehydrogenase
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GHSLSVIRMVATIKKQFPDIELIAGNVATAEATEELIKVGADAIKVGIGPGSICTTRVVAGIGVPQITAVFDCAQVAKKHNVPIIADGGIKYSGDIAKAIAAGADTVMLGNLLAGTDESPGETQIYQGRSYKVYRGMGSLGAMVQGSSDRYFQEDAHKLVPEGIEGRIPYKGYVSETIFQLIGGLKAGMGYCGVKNIEEMQSNTSFIRITNAGLIESHPHDISITKEAPNYQVI*
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IKIIEKDLKRAEKISEKLNNTLVIHGDGSDYQLLDEENVGQSDIFVAVTDDDKINMLCSLIVKNLGVKTTICQLKRFEVIPLVEQIDIDIVLSPRILTAGAILKYIRRGDIVSVTILGEEKAEMLELFAQPGSIAVNKKIQDIKFPRGSVVGAVVRGEQVIVPDGNFKINAFDRVIVFTLPQDLPKVEKLFLKGAWLF*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01287_sporulation_protein,_YlmC/YmxH_family
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01289_Putative_zinc_protease_AlbF
VINTWLLDKQARLIVEEIPYLKSAALGVYIKLGSRHEKEEMAGASHFIEHMLFKGTESRSARDIAESFEEIGGQLNAFTSKEFTCVYARTLDENISSAMEIIFDMLFNSTFATRDFATEKEVIIEEINIYEDTPDDLIHDLFARNLWQGHPMGSPILGTLDSVSAFSRDEIFDFYKKCYAPSNMVIAVAGNVDKSHIKEQVEKCLARQPLTQVNWPEPKPTEYSSFVRLLEKETEQVQICLGVPGISYFDQNRYV
QNVMNSILGGGMSSRLFQKIREELGLAYSVFSSPSTYSDTGSYSFYIGTGPGKIATFFEALYNELEFFVSRGVSEREVSRTQQLIKSSMYLGLESVMNRMSRLGKSLLMYDRVIPVEDVIQEILAVDAGKVQGFSSSILQKPAFSLAAIGPAEVLPQVEKEFRKWWG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01290_D-alanyl-D-alanine_carboxypeptidase_DacB_precursor
LRAIGREIRFIILLLLLMGLIASPVNASPYISSPCYCLMDGESGQLILSSNGDETRPVASTVKMMTAILSVEYASMYEEATVSSHAAQTPEYSIGLKAEQKIAVGELLKVALIRSSNDAAMVLAEHIAGDEGFFAHLMSKKAFLIGASNTRFSNASGLPGGEQFSTCNDLAQIGRYAQSHPQIKELVATRQSEFKHPSYSQPLRISNTNSLLGSYQGADGIKTGTANAAGKCLVASATRDGRHLIAVVLKSSDR
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01291_Bifunctional_xylanase/deacetylase_precursor
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FEEAVKNPDKKTREAQMDSSQKSVLQHFAENYPDEEKMIADVLDKTMKAVVRRMALEEGERVDGRKLDEIRQVSCEVGFLPRPHGSGLFTRGQTQVLSVTTLGAISEEQRLDGLGIEERKRYIHHYNFPPYSTGETKPMRGPGRREIGHGALAERALLAVIPSEEEFPYTIRIVSEVLESNGSSSMGSVCGSTLSLMHAGVPIKAPVSGIAMGLVKEGERFAIMSDIQGIEDALGDMDFKLAGTEKGV
TALQMDIKITGVNREIVEAALKQAREGRMFILKKMLEAIEKPNEELSPYAPQMIRMQIDPDKIREVIGPGGKTIHKIVDETGCKIDIEDDGSLFIMATDEEAAKKARFFVESIVADVEVGKTYMGTVKRIMDFGAFVEIIPGVLGTSGKEGLVHISQLAEERVNKVRDVVDIGDQILVKVTEIDRQGRVNLSRKAVLKSAVRK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01294_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01295_Riboflavin_biosynthesis_protein_RibF
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PVSVEAHLIGFNRQVYGQDLRLFFLQKIRDEKRFSSVDELINQIRLDREQAGEIYESLESRGKIDII*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01296_tRNA_pseudouridine_synthase_B
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01297_Bifunctional_oligoribonuclease_and_PAP_phosphatase_NrnA
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01298_Ribosome-binding_factor_A
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01299_Translation_initiation_factor_IF-2
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01300_putative_ribosomal_protein_YlxQ
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01301_hypothetical_protein
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NIVSELGGEKIDIIKYDKDPERYISNALSPSRVVAVNINETDKVARVIVPDYQLSLAIGKEGQNARLAAKLTGWKVDIRSESQMSDYYKDIDVEIDDEVLEQDWIEENPGETEIDEQDS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01303_Ribosome_maturation_factor_RimP
MVEERLNELELELVDIEYRKENKEQFLRVFIDKDSGVDLEMCSQANRAIKESLDEQEIPYDYLEVSSPGLERVLKKERDWERFSGYRVRIKTRKSFPGPQRIIGILLGFDSENIAVEVDGELYKVPRDMITIIRLHPEI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01304_DNA_polymerase_III_PolC-type
MINGDFYSFISNFNDSLSKYWKDSYVEKLEVFRSNKKWKIYVAIMEPLPAHILQQSIVKLKDSLPFLNELEIIPRLADFGRQMENILRLRQNEVLSEVFLSDQADFASLGWRFNENRIDMLVQDRNVFNKLLEKE[illegible]
IVAKLFLDKVEDDKIKLGDWIKLCGSIRYDNYVKEAVLFIDAFVHLEKPERKDTATEKRIELHAHSKMSAMDGLTEVSKLIKRAAEWQHPAIALTDHGSIQAFPEAYQAAKKYKIKVIYGVEAYLVEEDKKERPY[illegible]
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LFGQENVYRAGTISTIAEKTAYGFVKKYMENKEIDISNAEVNRLVKGITGVRRTTGQHPGGLIVVPQDRDILEFTPLQHPADNKDSGVITTHFEYHAIGEQLVKKLDILGHDDPTVLKELEDLTGRKASSIKLNI[illegible]
GLNSGECELMAGQNVPSWYIDSCQKIEYMFPKAHAVAYVTMAFRIAYFKVYYPLPFYASFFSIRAEDFDSQIILEGYEALKKRIQEIEKAGLSASQKDKKLLPVLEVAMEMYARGFTFQPVDIYESDASKFLVVDN[illegible]
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LEREKVHTPGQRTIQDLLDYMNIPKEKQIKTLIYYADEELVAALVRGDRELNEIKFKNVLGCNQLFMADEAAVKQLCGAGFGSLGPVGLPLKTYIDLEVSQMKNFACGANEDDYHFINVNLGRDFTPAGINDIRNAVTGDSCPVCSAPLYSMRGIEVGHIFKLGTKYSEVLEANYLDQKGREKPMVMGCYGIGISRTMAAAAEQGADENGIVWPLPIAPFEVIIVPVNSKNEEQMQAAWSLYEEFK
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01307_4-hydroxy-3-methylbut-2-en-1-yl_diphosphate_synthase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01309_1-deoxy-D-xylulose_5-phosphate_reductoisomerase
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QDGAFLAHLGRPDMRIPIQYALTYPERIESPVERLDFRTLGAIHFGRPDTQAFPALALAYEAGKAGGTMPAVLNAANEVAVNSFRQRRIDFTRIPLLVERVMEMHDIVKQPDLDSILAADAWARVRCQELI*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01311_hypothetical_protein
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FVYWG*
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MAVNKKAKLEESIDRNNLPQHIAIIMDGNGRWASKRLMPRTMGHRAGMSSLKEVVRACSDLGVSALTVFAFSTENWKRPLQEVDYLMKLLVEYLHRELDELHANAVRINVLGDYNSLPHQCRLEIAEALENTRYNKGLKFNIALNYGSRAEIIAAVKKLASGLLAGEISLEEISEESFAACLTTAGMPDPDLLIRTAGEMRISNFLLWQIAYTELWVTDCLWPDFSREHLMQAIWDYQHRERRFGGL
SRSQQGEENV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01314_Vegetative_protein_12B
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01316_Elongation_factor_Ts
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01317_Vegetative_protein_209
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01318_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01319_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01321_Sigma-28
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VI*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01323_CheY-P_phosphatase_CheC
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01325_Chemotaxis_protein_CheA
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01326_Chemotaxis_response_regulator_protein-glutamate_methylesterase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01338_Flagellar_motor_switch_protein_FliM
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IPIKVVMGKTVITVRDLLALSVGDVIPLNRNISQELDIVIGNRAKFLGKPGVFANRMAIQVTGIVEEESE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01339_flagellar_basal_body-associated_protein_FliL
VADEKDSEVKPRLDINIDMKLIIIGLLVFVVAVGGSYFLMKSLMAPLMPKQEGAGKLMTGNLVEVGEFTTNINDVNGQRFLKVKVTVEVGSDDKKAQEKITQYMPVIKDSILSIISAKTVADLDVRNRNNLKAEIKNDLNAKIGANTVLNVYFTDFIMQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01340_Flagellar_protein_(FlbD)
MIYLTRLNGEKFMVNIDMIELMEETPDTVVTLNTGKKFVVRERIWQIREEIIRFRKRSFTNLKK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01341_Flagellar_hook_protein_FlgE
MMRSMYSGVSGLRNHQTRMDVIGNNIANINTAGYKKSRVVFQDTLYQTMRGASRPDDSSGRGGTNPMGIGLGMSVSSIDQIHTGAPTTATNKLTDMGIDGNGYFIISDGKQEYYTRAGNFEFDTGGKLVNSNGYNVIGWISTIDPVTGDWSMDTSPGRRIPINIASFKTCSPQATREMIFSGNLNAETPFNEVQTLAFATNPNGGAAGGEFRLEFGGQYTEWIKVGSNPAATAANIQKALENL
GSIGKDNVAVSWNPTYNFYEIKFQGDLASRGVPLIGVEAGPAAAFDGGNPVYGGADTQNQTLAFATIPGGGTQGGGFTITVGNKSTGAILVGADENATAANIANALNAVGATAGVTWNVGTSTYDIAFTSDPGQVIQVHPFAAAFDGGAGTVGNREMGATSAHILTFGVANGGAQGGVFRLSYNGQNTGWIAVGADSAVTAANMRVALENLSNVGAGNIAVNWNDSSQQYEIRLQGTLA
TADVPTITVTAGPNPGFDGGAPTVGGTTQNATLAFATTPGGGTQDGGFTITLGGQTTDMILVGANEAATATNIQNALNALGIATPVAVAWNGGTNTYDIGFNADPGAAMTVTTYNTGFTGGVANIVPPAVDVYYPTDQQSIITAQEVFDSHGNKETIYYRFFKYEIDEGPPRVSRWAVDMSLNNPLFEKAPGYSASTGFESVDLDTTAPVATMSAGSAEIIRLTNLQFDDKGRVVGGTPDL
DPFILTINRAPVAAEDIVFKMDFSVMTQFAGNSFSEISQNGYPEGSLTGYTVGIDGVIRGSYDNGETRDLARVALANFQNPAGLAQLGGTIFQKSVNSGEARINPPIESGMGKIVPSSLEMSNVDLSEEFTDMIVTQRGFQANSRIITTSDEMIQELVNLKR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01342_flagellar_operon_protein
LTSKIFIPPSTVIQPAPSKQDKAVKSPAGSSFNQVLTQKLAGELKFSQHARERLQSRNIELSGVDMNNIQNAVNKAREKGARDSLILMQDLALVVSIKNNTVITAVDGQHLKENIFTNIDSAVIV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01343_flagellar_basal_body_rod_modification_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01344_Flagellar_hook-length_control_protein_FliK
LTGLAILAAIPEAGKKNTAHIALPGKPSSYRSSISLFQRQLNNAGQRKDDLPTQSEAIQVCKAFTPPLKEPATDASTGSMAPAEISAPESPPLIDSELNKTDAYTTGETGLLSALAVHPDSQIALAMPNEDGLPGNLQATGLILEESREGGLNCKQGKLDGIAMAEDVLFSQAAEAGPVVEEVPAEKSLIALMSSVETTGEAGERAKPLSKAEVLAASQNSPMADTPSVASIYEDGPGSESGEDAAVLRES
FRPERTYQQDGGNKQNLSRDAASSEERGQAQEGAGPERSVHNRGNPPPPVFINRAAGIPEKSALDPAALEVLLANRQGNKAGESLSALESTASPGEDEGENKAAKAPPRMEAVPRPATAAFAREVESMTKQLPQPGEEGEKATPPEHLEEEQLKPEEGKEQGKVLSGLKTESIVAEDNSKPGSRPVQERMQFIPEKFMEQVVKKAELMIRQNSSEMRIQLHPEFLGRMTIKLVLEDGLLTARFIAEN
HQVKHLLESNLNSLRQSLETQGIRVEKTEVNVQLSNGGLFDGSEGSRQDLWEQPRFSSRYNYNGSGVDAYQASSAGDEAEAGLINSSETYGVAADGSMNFLI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01345_hypothetical_protein
MTGILKKIKFLLILLSLLLLLGGGYYLLLYLNLLSAPAFLKNAPLMGDFVSRSAEQVSRLQYEEILKQKDRAMAENQKLSQTLEDKAEEMEKTRKSLADLKKKLKLSEQEDDNLKEEIAQLNSEILDLKSKQESRSSAYKDMATYFSEMKAKTAADILSRLDDEDVIGIFSQMESDTVAELMQNMDAARAARISKKMLVAVP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01346_flagellar_export_protein_FliJ
MKAFRFRLQTKLEICTRQEQIAWEEMQSRLKERELLLEELLYRERRLLAVEEEIRQDSCKAQEYQALLLKREFVPVIVMQIEQAEQNLSQAEARVEEARVLLLERKRETSTLEKLKERAWQEYLWELQQEEQKIIDEIAINNHFRRDLA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01347_putative_ATP_synthase_YscN
MNKAPALPLEKYLDVLDKTTTCQLKGRISQAIGLTIEAAGPRVRMGELCFLQTNYSDRQLVPAEVVGFKDKKILLMPLGNLEGIGPGSELLASGATLRVQVGMELVGRVLNGLGEPIDDRGRIKSETTYPVINQPPSPLKRKRITEVLQVGIKAIDGLVSIGKGQRMGILAGSGVGKSTLIGMIARNTDADINVIALIGERGREVREFLERDLGEEGLAKSVVVVATSDQPALVRLKGAFVATSIAEYFR
DQGKDVLFLMDSVTRFALAQREVGLAIGEPPATRGYTPSVFAMLPKLLERAGTSEKGTITGLYSVLVEGDDLNEPITDAVRGILDGHIALSRSLAAMNLYPAIDVGQSISRVMIDIASPEHIKNANRFRGILATYEEARDLIDIGAYKKGSNPRIDEAVALIDKCRSFIRQDIYEEANITTTLEDLEEAVRL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01348_Yop_proteins_translocation_protein_L
LSKVIKGSNMLLFQPKVIDLTAIYELKKQAEAEKPEAAEEFSEEDLLSNDIALKQLELKELQLEAERIVDENEKIVRGLLENVREEARTIVAEALEEAEVIRQQALEEAEELWDSKRKEGYESGLKKAQEEIEADRLSAMQESQRILEEARQSKIQIMNSSEADMVRLVMAVARKVIGGELETNPRVIINILREGLNYLDNPQNVTAYVNPLEVDKVLEVMQSESFTDIGSNEIPLKVTPDKRIQAGGCILESDA
GSVDARLETRIASVEKAIQEVAPDE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01349_Flagellar_motor_switch_protein_FliG
MNEEDIEQLTLEIANVRKVPTEKMDEIFREFYEMCLASQFIGQGGIDYAKEVLEKAYGLEKTMEIIGRISSSLQVRPFDFIRKTEPSHLLNFIQSEHPQTIALILAYLDAEKAAVILGALAPERQAEVAKRIAIMDTTSPEIIKEVERILERKLSSIAPQELTAAGGVKAVVEIINRVDRSTEKTIMETLEVQDPELAEEIKKLMFVFEDIVMIDDRSVQRVLREVESQDLALALKGASNEVSEKIYHNMSIRASDML
REDIEFMGPVRLRDVEEAQQRIVNIIRRLEESGEIVVARGGDEVIV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01350_Flagellar_M-ring_protein
MESFVEKLKETAGRVNSFWQNMSLNQKVLAGGGLLLILAAVVFLVISSSQGTAYEVLYTELDKKDASQIMARLDEDKVPYKLEDSGTTILVPPALKDKTRLTLASENLPRGETGFELFQESKFGETQTDKKVKYQVALQGELARSIQSLDKVKAAKVNLALPEPTLFSDNEELPKASVVVNTREEEKLTPKEIQGIINLVANSVDKLTPENVVIVDQHGNLVSENLPTADGDISETVKWQMAMKRQY
EKEKQDAIQSMLDKSLGQNNSVVRVNAELDFDNKEQKDELYSHDDAGPFVRSEEIKKESGTDTTQPVVGVPGTDTNIPQYQEVDAAEGVSTYDKSSKIRNYEINKTEKVTKVAQGDVKYDYLTVAVLVNSKATEPLKLGETEEEKIATIRNIVATACGLRENRKDESVRLEDNISVAFVDFYTEPQAEAPGGTMDQIMRSPLTPWLLAFLVVLIILLAWWLMQRRERRRAEQEAEEEAGIDTLIQEE
IRVEDLIDTGLSPEEKERRKIREEIDRIINENPETAAQVLKTWLAEE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01351_Flagellar_hook-basal_body_complex_protein_FliE
MKLGALDNIPLTGINLGQPPAVQNSVGSKETGFFNYLKEALQEVDELQKEAASSAEKLALGDESYLHNTILAYEKANLALQLTVEVRNKLMEAYQELMRMQM*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01352_Putative_proximal_rod_protein
LGFLNSIDISASGLTAQRLRMDTIASNMANVETTRVDNRPGPYRRQVVVFEARNATVPKKRFQKLLEEKSQAFNAANSGVRVKQIREINENEAPYRRVYDPSHPEADNEGYVNYPNVNIVEEMINMISAARAYEANAQVIEAAKSMAMRALDIGR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01353_Flagellar_basal_body_rod_protein_FlgB
MLEKILESKTHILLNQAMDVGTLRNDVIADNIANVDTPGFKRREVIFEEKMKKALEGTTVQLGLNLTNSRHIQMEGSIPDLEPEVRVLEDLTFRNDENNVDIDNEMAKMKKNSINYDAVSRSMSNEIRLLRMAITGRG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01354_Vegetative_protein_286B
MSKSLLEKSRAINKILQKIAGHPVNFFEIADVLCRNLECTVFIVGRRGQIGGYAFTEGAICQEIQQLIKHAERFPESFNQELLNIYETQTNIILKDGRKCLFNPDNVNCSCSARIWSITPVFGGARRIGTLIFMRDKVKFTEEDIVLIEYGAMVMANEIMRIRTERIEEEARKKASVQIALATLSYSEKEAIDHIIAELKGKEGLLVASRIADKVGITRSVIVSALRKFESAGVIESRSLGMKGTYIKVLNDYLFEELRN
HA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01355_hypothetical_protein
MQSERWRSMDATPFTLRVRLVFHPTGVTIKVASHGREIGAVPLELQVEPLVLPMRSALSGTTDAPFGRY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01356_ATP-dependent_protease_ATPase_subunit_ClpY
LFKLTPREIVEELDKYIIGQQEAKKAVAIALRNRYRRKLLADELREEIYPKNIIMIGSTGVGKTEIARRLARLVKAPFIKVEASKFTEVGYVGRDVDSMVRDLVETSIRLVKQEKMAAVEQKGRQMAEERIVDILLPFDGRKSKSPKNPFELLLGSMQERDEADDDSERRRREIGQRREILRQKINRLELEDEIIEIEVEEKNPSFMEIFSGSGVEEMGINLQDMLGNLMPRNKKKRKVSIAEARRILTYEESQRL
LDMDEIHREGIKRAEEDGIIFLDEIDKIASKESNYGPDVSRGGVQRDILPIVEGSTVITKYGPARTDHVLFIAAGAFHVSKPSDLIPELQGRFPIRVELESLKKEDLKRILTEPNNSLIKQYIALLSTEKLTMDFTPEAIDYIAERAYEVNSRTEDIGARRLHTVMEKLLEDLLFNSPDMAGEELIIDIDYVAERLDRIVEDEDLSRYIL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01357_ATP-dependent_protease_subunit_HslV
MFQATTIIAVRKGQQTAIAGDGQVTLGQNTIMKQNATKIRRLYEGKVIAGFAGAVADAFTLFAKFEEKLKQAGGNLSKAAVEIAREWRSDRILRRLEALLIVADAEKIFIVSGSGELIEPDDGIAAIGSGGAYALAAARALNAFSELNAREIAVESLKIASGICVYTNEQISVEVIEK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01358_Tyrosine_recombinase_XerC
MRVEKSASNFTLSSYKTDLSQFFAFLSQKKGINPEEVGVELINHNSVRKYLAQMQEKGLSRATMARKLAALRSFIKFLCRENILADNPITAVSTPKQERKLPRFLYTREMELLMNAPDLSMAAGKRDRAILETLYASGLRVSELTNLDKPDIDFGEDYIKVLGKGGKERIVPLGSKAREALLLYLQQGRVYLEAKGQASPALFLNKNGQRLSTRSIRNIINKYVETIAINQKVSPHTLRHSFATHLLNNGAD
LRSVQELLGHVKLSTTQIYTHLSREKIKDIHQQTHPRR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01359_Methylenetetrahydrofolate--tRNA-(uracil-5-)-methyltransferase_TrmFO
LQQVNVIGGGLAGCEAAYYLAQKGIRVRLWEMRPQKATAVHRTADLGELVCSNSLKSDQPNTAQGLLKREMRILGSLLLSCAEKARVPAGSALAVDRELFAGLVSQAILACPSIELCREEVNRVPTGELSIVASGPLTSEALAADLRRITGEENLFFYDAVAPSIADSLDMNKIFRASRYGKGSADYLNCPLDREEYESFYENLINADIMAGHSIDKSLFFNACMPVEVLARRGKDALRYGPMRPVGLEI
PGSSKRAYAVLQLRQEDKAGTIYGMVGFQTRMRWGEQDRIIRLIPGLEQAEFVRYGVMHRNTYINSPKLLWPSLQCKKRPEIFFAGQITGVEGYMESAATGIIAGINAARQLQGKALLTPHKATIIGALLDFISSSSCQDFQPMNANFGLLPPMEPPIKDKVQRYLAYVERALNKMGEFSESLLN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01360_DNA_topoisomerase_1
LAGNTLLIVESAAKARTLGKFLGKGYKIKASVGHVRDLPKSKLGVDVENDFEPQYITIRGKGDILKEIKDESQKAGRVLLATDPDREGEAIAWHLQNAMKIPPEENCRIEFHEITREAVKKAIKNSRPVDLSRVNAQQARRVLDRLVGYNLSPLLWSKIRKGLSAGRVQSVALKLICDREEIKNFIPQEYWTIDAIFDAARSKNSQFTARLASCQGKKIEINNEKEVAAIGEYLQGVSFTVLKVERKEKRKN
PNPPFITSTLQQEASRRLNFFSNRTMRVAQELYEGLEIGKEGTVGLITYLRTDSTRVASSAQMEALDFISSTFGAEYVPVKPNEYKSRKSAQDAHEAIRPTSIQRTPESVKAFLSRDQYRLYQLIWNRFVSSQMTPAVYDSLTVDISAGDYGFRASSSQLKFIGYKKVYNDNEEEEPKNNIPELKKGEELALHELKPEQHFTQPPPRFSEASLIKLLEEKNVGRPSTYAPTIDTILKRNYVERQNRQFIPTELGF
IVVDLLKEHFANILDLEFTARMEGELDLVEEGKLDWKKVVRDFYEPFHSDLEKARELAQKIEIKDEEAGKECPQCGRPMLIKHGRFGKFMACSGFPECRHTQSINQELGLKCPLCQGSIVALKSKKGRTFYGCSNYPQCNFRSWDKPTGKICPHCGDAIVEKFNKKKEATQICQNPACKQKVEMGG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01361_DNA_protecting_protein_DprA
MIRTEKAALCFLHAIKGIGSRSLWKIKDSFGSFENCLKSDSSRLYALLNSEIAQAIISQRQHSSILFYLERLENEGINPVSFEESSYPSSLGNIYNPPMLLYFQGNMDCIEKICLAVVGSRAASDYGRTTARKLVRQLAARGISVVSGMARGIDTEAHRGALDAGGKTIAVLGSGLNIIYPRSNKRLFHEIIEQGVVISEFPLDTNPEPGNFPMRNRIISGISRGVVVVEARAKSGALITADYALEQGRDVFAVPGPIN
RESSMGANNLIKQGAKLITGVEDIIEEYYDITIPEKELPLQEQLLFLDEQEKVVVNCLAEDPLLFDDIIASTGFSIGELSRLLLKLELAGIVKSLPGNYYVKV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01362_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01363_DNA_adenine_methyltransferase_YhdJ
MESLSGVRLVWEGKENELIERPLEYGSRVEVVYPHPLFQSNNLFGERLDNVPQLEPASLNRMYQGDNLAVLNLLLQQGFAGKIDLIYIDPPYLSNSNYNSRISVEHQGQKYFIERLAFKDRDEDLVSYLQQIYKRLKLMKMLLSEQGSIFVHLDWHSSHYVKILLDEVFSSDNFINEIIWCYGGGSGTRRHFHRKHDQILWYGKGKDYTFNPQYRPYTEGTLQRGLTRVKGKKYKLHKEGALLQDW
WVDINKILSPTARENLKFPTQKPLALLKRIIASASNPGDLAADFYAGSGTTAEACEEMNRSWISCDSSKLAIQSSRYRLLRKKARPFQITELIDEGSEGQKQGILDLIVPEVCSYDEKQAMVKLGISRYDSPLFPFENRNFVSCLDFWELDWDYDGCFSSQLQVIREKPDYNLPLPLQLSILLPKQKEYRMAIKSYDIFGHSIIKSFAFSGCK*
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MRSKILVIFLVAMILSLLVPIAGWYYDAEQAFTPNNLIRINVVSR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01365_Stage_II_sporulation_protein_AC
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01367_RNA_polymerase_sigma-35_factor_precursor
MDIFEKLRNWRLYFIKLYLKKKLPRFIHYIGSTEVLPAPLREQEEMALISQLDQGIMSVKATLIEHNLRLVVYIAKKFENTGINIEDLVSIGTIGLIKAVNTFEPKKNIKLATYASRCIENEILMYLRRNIKNRVEISLDEPLNVDWDGNELLLSDVLGTENDMIYKQIESEVEKSLLWKAMHKLNNREKTIIQLRFGLADGDEKTQKEVADILGISQSYISRLEKRILKRLQREIRKIE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01368_sigma-E_processing_peptidase_SpoIIGA
MAIPEVYADLSFAINFIMDFCILWATARLTGSQVVYKRIVLASFLGGIYALAYLISGMEYWFSLPFKILFSCLMIIIALYPQNWAEFRKAFLYFYAINFIVAGASIAISYLLTDKQSGANLWYLWLPGGILTALAIGIFGQKYLLRQVLPALLRFDVELRFNNYYCQGKGFLDTGNNLRDPITNRPVIVAEYQFLKDCLPEDLREVLEIKQDESAMLDVLGACSWANRLRLIPFSSIGKKNGILLGVRADEIVVNN
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AISSPLLETSIEGAKGVLFNISGGTDLTLFEINEAAEIIHQAADVEANIIFGANIDEKLNDEVRVTVIATGFNVPRTQGSSTESTRLRGLDSPPSFLDKNDLEIPPFLRRK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01370_Cell_division_protein_FtsA
VLGINRNIVVALDVGTSFIKAAMAELSQGQEINILGVSHVPSLGLRKGNIVDIESTARSIDSCLNDLERLTGVDIASTLLGFSGSSVYAINNHAVVAVGNPSYEITQDDRQRVLQSACNIALPPDKTIVQAVERQYIVDGYDGVKDPIAMVGSRLELETTIIVAATAAIQNMHRSMQRINLQTEKIIYNPLLVAEAVLLPTEKEMGVVLLDIGGGTTEISFFEAGSLLYTSVLPIGGEYITRDLAIVLRTSLEEAG
RIKERNGVASLEVARNDVIVNVKNVQGKEIRQVSQEVVAEIISARVMEIVEMIYAELKQFACLDRIPGGIVVTGGEAELTGLVKTIEEYTNIPTRLGIPENLRGIPVDFNRPQNAVILGGLIYSSRYLNINCDNKRGIAALFDQLSRWFKELFR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01371_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01373_Cell_division_protein_DivIB
MNKAISRKFFGISILILLVLVSLYLFLHSSFFNIEKITITGLKIVSEDEVLRLSGLSRGQNIFEINDEFVSKAIEIHPVIKKAALVRHFPRQIEVQVQERKIWALVPYHDVLLCIDKDSICIDKLQKYSLVDYPLITMDNLPPRVNLGQAVEPEGVKMIKVLYDALSIKSRKAISDFHYINKSKEIVFYTQKGTEVNFGNLERLEEKTKFVEQVFAIETELDEKGTDVLEYVDLRFKGQPVLKTRNVQE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01374_UDP-N-acetylglucosamine_1-carboxyvinyltransferase_1
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LENVVLEHLQPLIAKLREIGVDVIPKSSGVRVIGNHKYRPTDIKTMPYPGFPTDMQPQMMALFAAIPGTSIIVETIFENRYMHVQELRRMGADIKLEGRIAIVKGKTALEGATVEATDLRAGAALILAALFAHEETIISKVEHIDRGYEKIHEKLEKLGADIRRV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01375_UDP-N-acetylmuramate--L-alanine_ligase
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YYFLNWESIGLGSRFDVYKRDLGFLARFELAVPGKHNALNALAAIASALELGLEMEPIKSALKNFHGARRRFQIQGQKALVTVVDDYAHHPTEIRATIDAARNFHSGRVIVVYQPHRYSRTQLLGRQLGEALINADLAIITEVYSAGEEAIPGISGEVVCQAAQNIGCHSVYIPQREEIIPYLLQISQENDLIITMGAGDIWKLGLQLLEVLPESVLKV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01376_UDP-N-acetylglucosamine--N-acetylmuramyl-(pentapeptide)_pyrophosphoryl-undecaprenol_N-acetylglucosamine_transferase
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FNIEEALAADLAVCRAGAGTLSELAILGLPAILVPYPYAAENHQEKNARALLAKKAVEMVIDEFLDGDTLYKKVNELRKTPVCLKEMARNMAKEGRPNALNEILDVILTLPDN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01377_Cell_division_protein_FtsW
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01378_UDP-N-acetylmuramoylalanine--D-glutamate_ligase
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TIKRAGSVQEIARIDEVSLRGKHNLENILAATVMASIAGVSPDDIRQALATFPGVRHRMEELGLYDDVFYVNDSKATNPESVMKALDSFNQPIILIAGGRNKGSSFSQLAGLIKQKVRELVLLGEAREEIKAAVIDAGFRNIHEVEDLQAAVSKAHELARKGEVVLLSPACASWDMFASYEQRGDLFCEMVKSISK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01379_Phospho-N-acetylmuramoyl-pentapeptide-transferase
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GGVYVIETLSVILQVISYQTTRKRIFRMAPLHHHYELKGWPETRVVYRYFWGLSFVFMLLGIWSFWGVG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01380_UDP-N-acetylmuramoyl-tripeptide--D-alanyl-D-alanine_ligase
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EILALASRPTFDPNDFSAYAVSNRRNYGINDSYEPGSTMKITTAAMALQEGVVNAESRFYCPGYIKVGKEVIGCPDRKPHGSQSFAQTIEKSCNVAFIQIGLELGLENYYKYLKAFGFGQKTGIDLPGEAEGILIPRASAQQIELATMAMGQANAVTPIQLLTAVGAVANEGKLMKPHLLKQVIDDKGNVIKKVEPQVVRQVISPETARELCGMLEGEVVNGTGRNAYLEGYKVAGKTGTAQKVGPD
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01386_acetolactate_synthase_3_regulatory_subunit
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01387_Phenylacetate-coenzyme_A_ligase
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CSCKNGLHIAEDHFLAEIIDPLTEEVLPDGCPGELVITSITKEALPLIRYRTRDLTTLERTRCDCGRTHVRMQKVLGRSDDMVIIRGVNVFPSMVESVLLNIPGVEPHYLLIVDRKGNLDQLEVQVEVSERLFSDEVRKLEELGGLIRKDLESNLGIGVKVRLVEPKSIPRSEGKAQRVIDKRNV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01388_UV-endonuclease
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01391_Aspartate--tRNA_ligase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01397_D-tyrosyl-tRNA(Tyr)_deacylase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01398_GTP_pyrophosphokinase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01399_Single-stranded-DNA-specific_exonuclease_RecJ
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01403_Molybdopterin_molybdenumtransferase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01407_Formate_dehydrogenase-N_subunit_gamma
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01408_formate_dehydrogenase_accessory_protein_FdhE
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LFIANIETIYLDLLAQEKGYTSHDE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01409_Spo0E_like_sporulation_regulatory_protein
MAAPCAGKGNNIAGEDNRELIEWIELLRRRLETLAVLRQNYTDPEVLATSQALDEALNEFYYRSEAEGAQRVQSQVWQVKKAQKSAIG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01410_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01411_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01412_Transcriptional_regulatory_protein_ZraR
VLEINLEAINGALVESPYMALVTVNKDGYITLMNETFLDLLGLKKEQAIGKHVLEVLPHSELPEILQTGRIDKADIWPINGNDTVVTRFPLIKDGEIVGALGQSFFLDMSGARILMQRLQETEEEFQAFSEALIENPYLVYVAVNKEGLITLMNQTCLDALGMEKKEVIGRYILDIIPESRLPEVLQSGRIHEADIWSVNGRDTIVTRLPIIKNGKIIGAIAKSLFLDVSGAKMMLQKLQETQQEFQALFEALI
ESPYMVYVIVDKDGFITNMNKTYLDALALEREQVVGKHILEIIPESKLPEILNTGRIDKADIWPINGRDTIVTRLPIIKDDKIIGAIAKSLFLDMSGARILMHRLQETEKEFRAISEALIECPYMVYVIVDKDGIITSINQTYLDALGMEKSEVVGKHISKITPTSLLPEVLKTRQIDLADIYSINGQDTIVTRLPIIKDGEIIGAIARSLFMDISGAKILMNKLQETKKELNIYREELRQGYQAKWQFKDLIGQSPAFL
KVKSVAEQVSHSVSTLLITGESGTGKELFAHAIHNSSDRSSYPFVMINCAALPDSLLESELFGYEEGAFTGARKGGKPGKFELAMGGTIFLDEIGDMPLNMQTRLLTVLQDRMVERIGGTRPIYIDVRVIAATNRDLEELVANNKFRQDLYYRLNVVRLDIPPLRERSDDIPLLAKNLIKKINKKLGTKINKISYKTIELMQNYAWPGNVRELENLLERALNLADMNRENSITIKHFPLMVENAYFRDEPN
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01414_putative_enoyl-CoA_hydratase_echA8
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FLEKRKPVFKGK*
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MMKEIQDVVIVSACRTPIAKFLGSLKDVQAIDLGIIVAKEAIKRAGIQPDIIDEIVMGEVYPHMQGSLPARQVGMAAGLPVRSNACNVNQNCASGMRALDIALNHIQLGKTDVALVVGVESMTNAPYMIPKARMGYRMGPGSIEDAMLHDGLIDRLVPGHMGVTAENIAEKYGITREECDQLALTSHQRATRATQDGTFQREIVPVELKSKKGVKIYDKDEHMIPDANLEAMAKLPSAFRKGGV
VTAANASGLNDAAAAVIIMSKAKALELGVKPLMKLINICGEGVAPEVMGLGPAVAIPKCLKEAGMKYEDVEYWEINEAFAPQFIGVGRMLKEEFGIEMDLSKVNANGSGIGLGHPVGCTALRIVVSLYYELEKQGKTVGGASLCVGGGPAYCSLWTRDI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01416_Acyl-CoA_dehydrogenase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01417_Potential_acrAB_operon_repressor
MEANKKSRTERKKEETRKKILAVAMDLFKRQGFDKTTVDQIAMEADVAKGTVFNHFPEKEAIIYEHIQSMIREQTPAMLEYLDKLPDTRTRLIIAALQKTLEWMHIDLSNDLFERHFIYKMSQWVHAIKHLDRNVSSGFSTVMEHIFKLGIESGEIRPDWHPFVVGGLEVSHFLSALLWVNHPELISINESIENNVDCFLNGVKNELHDS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01418_Phosphoenolpyruvate_synthase
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VPAILSNVKNLQPGAHKTRVEQGRLEAEQKERDLLARLERLPGGKRKAKKTRKKISILHNFIGYREYPKYFIIRRWQVFKEALMREAAVLVQKGVIQNREDVYYLSFEEFRDAVHSGHLDYSIIAARKEEYAAFEKMTPPRVMTSEGEVIFGEYEAVDIPPQALVGAPVSSGVIEGPARIVLRMEDANLEDGDILVTTFTDPSWTPLFLSVRGLVTEVGGLMSHGSTIAREYGLPAVAGVENATRLIEDGQ
RIRVNGTRGYVEIL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01419_hypothetical_protein
MGEKGFFFNWSEAFTAGVEAVGGKGWNLARLERYGFTIPLAVF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01420_Phosphoenolpyruvate_synthase
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DGDEGKIYMQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01421_Tyrosine_recombinase_XerC
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HSCASLLYANGVSLKEIQEWLGHSDISTTSNIYTHLDFSSKVASANAIIGVYPS*
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MKCEQVSELLSAYIDEMTSEKETKALEAHLAQCADCRKELDGYRLLRGIMQQLESPLPPDDFSTVVQKRLRENKNKIFSATTIERPKKTGWIAAVLAGLALASGIYASSYLSIGDFLVSWQDKKEQKKPRIAIEDIIERFQKWNKEEDNSSREAAEPEAKIASNPSAKVSVGVGAENTREEVELKTAGDDSYSSHIMVKELSTALAQVIGIADEREIKYSMTSGSYGSSEARRVVLEVEPQEVPQLLMELEAIG
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01425_DNA_polymerase_I
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SEELASGIAVHEERIFELAGSSFNINSPKQLGKVLFEDLGLRVIKKGKTGYSTGAEVLEELYQEHEIIAHILNYRQLSKIKSTYADALQELIHPETGRVHTIFKQAQTATGRLSSVEPNLQNIPIRMEEGRRIRQAFVAPGPDWLIMAADYSQIDLRSLAHISGDERLIEAFKSGVDIHTRTAVEIFHVPVEWVDSELRRRAKAVNFGIIYGISDFGLARDTGVSRKEARKYIDNYLNSYPGVKKYMEDIVEFGRR
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TRIGGRSSHYCEKCQH*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01428_Dephospho-CoA_kinase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01429_Soluble_lytic_murein_transglycosylase_precursor
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SGKLDFLDTVPLEEIKKIRKASEYKGLYIEKPILETYSLVFNLNKKPFAGNYYLRRALNYAIDRKKINDEVFGGSCLPAKGAIPTRIPGYSEEMQGYSYKPEKAKELLEEAGYPGGHDLPPLLLTYNSGEAHKMIAEAVAAQLAQLGITVQTQALDWNYYRKQMSSMNMSFFRLGWKADYPHADSFLYSLYHSSQIGNSNFSGYNNPQVNKILESSRAATNEKERNALLRKAEQIVVDDAPCLWLFQKK
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01434_hypothetical_protein
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LESIAQICLKRKNDVKYVFDKLFMYYQNRNYEKAKEKLLKAYKHTKRKNYFEDYKRIKSFLSESDWEKIEPQIINEAHDKSIQDYMNICLDKGMKDAVINMIISPPKNQWGYSIFSDFDSFAEKLEKDYPQEIINYYYQKAYSRIANGNRNTYKEAVRYLTKVKTIYLEYLKDEDKWTQTLNNLQIQFKKRPAFIDELKKIKI*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01436_serine-protein_kinase_RsbW
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01437_putative_oxidoreductase/HEAT_repeat-containing_protein
LFALGKQLLVRPDDTHRLRLMIPVFFSLGVGEVLGISSSTAIFNVRYGVEYLPLMYVLEAAGLLLLSLLIADLSGRMDRSRFLRLTYGMMAGIVLLNGLVLVLSKFSAFSLWPVFYPILLVTSMVVFFQLTPLIWLIALDVCSTQQAKRLFPLMAGASTIGCIAAGVIGKLLTPIGVEIIYLFWSLFLLGGGYYLFQTIEYYISPLKALTVEEPPNLKNSIVSIYRSRFLLGMLSLLTLIMTLYFLMDYQFNTVARIA
YNDEAQLAGFLAIFLAISNVVAVVIELGFLSRIMSLLGVGNVLLLVVAGLACSFIITIIFTSGPWALGAVFISYLITKIMVNVLGEPSYQLLFKVIPPSGRDGIRFLVEALIILGGMIGGAAVSGLYSAGIITMQSMLVSALILAIIAAFVAWKTRGMYLNELLRSIGNGVKDLSENGAAFLGRYVPSTFLTQLFSFLHHPDDRKRILALGIAEQLDSHALEPRLGDLLNDSCADVRRSALKYCLRLDNTSYHQESIM
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DEDIELREISLEALSEGLVDRRLARAMLEAMVSPATIPKPSADIVKAKLKKAQSLDDYWFSEISTAALSRLKGGNTMKDREMLSLLDKVMLLKSVELFSYLQLEELGLLARAASLEIYDEGTVLVQEGQANSNLYVIIDGHIELSAHSAGTGVNATIAVRGTGETLGDSSVFDQSASSLTAQIILSEATLLIIDGKDMHRLCSLYPNIAMGFIKAISGRNRKLEKMLITMA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01438_secondary_thiamine-phosphate_synthase_enzyme
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01439_hypothetical_protein
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ANASYQAGDKVEIRGTVEKLSSLSLTITDPDGHSIYTVFDLEAKDGSFTEEYTLEADAVSGMYTIEAGPVPGSSLGCKQTFQVTAAPTSAANITPSNTPQVAESEKKPPVEAAKALPISSLNDISNHWAAERIKDLVARGAIKGYPDGTFQPDATITRAEFITVVVKAFNLINPGGIVFTDTSGHWAQDYIATATAAGIVGGYNDSSFGPNDPVTREQMAVIVVKAAQLTPIAAENQFADSSNIAAWARE
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YIKISGQEAPKFLAPHLPQGMHVRDLLFINYGETSFLAYSQGQKVLSLQTLEGQSGIALSDLIKQTGLSRAAKYKFNSLNAESLELAVNELGSGLIYQNDQGTLVFACPGATDKSLENLLSMECMNP*
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VRDAAVVSSGDYERYFIRDGVRYHHILDPVTGQPARKLISSTIVAPQATDADLLSTAIFVLGSSEGKKLIEEMPNTSAVLVDASGVINCSTELAEQIEFIEDTGYQVLGNI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01477_Heptaprenyl_diphosphate_synthase_component_I
LSLRKQTIIAVLLSLAIILHLFEALIPIPFPIPGVKLGLANITLLALVLFDFKTAFLIAFLRTMLGSLLSGTIFNIAFFLSFAGAISSTCFMAILLFLLPPIFHHDDRGFSLVGISIGGAAAHNLGQLAMAALLIKHSGIFYYLPIMLLSSIPTGFLTGLILRELIKYMKLSGQLEIQQWNQL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01478_hypothetical_protein
MNKANKILIAVVLALVLFSYWGFFPAYRENVPLTAVISVNGDIVVQLKLDESISKHFIKVPGPLGTSVVEVKPGAIRMKSSPCPEHYCTKTGWIDRPGQVVACIPNRVIIKISPDKESLDAISH*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01479_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01480_Putative_HMP/thiamine_import_ATP-binding_protein_YkoD
VESCNEAVVVQALTYQYHASGPFILRDIGFRIDRGEVVVITGLSGCGKSTLCLCISGLIHHHRNGVISGKIILNGKDTRGMRGPALALEVGMVFQDPDTQLFSPAVEDEIAFAPENLCLPPEQIQERVNNVIDTLGLAALRHANPYYLSGGEKHLVALAAVLALDPPVLILDEVLSQLDSLGKKRVIATLEILRDKGKTIIAVEHNLEALAFADRFMVLEAGKLIRFDRTEKILADQDFLMTRRLV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01481_Energy-coupling_factor_transporter_ATP-binding_protein_EcfA1
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01483_Energy-coupling_factor_transporter_ATP-binding_protein_EcfA1
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01486_CxxC-x17-CxxC_domain_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01487_2-hydroxyglutaryl-CoA_dehydratase_component_A
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RRMKKKHHILCPQMSPIHFEFFEEALRAEGYNFEVLPEVDQITVDEGLKYVNNDACYPSIMVIGQLLQALQSGKYDLKHTSLMISQTGGGCRATNYIGLLRKALRDAGLGHIPVISLNLAGMEKNPGFKINRRLMQKLAWSLVYGDLLMRVLHRVRPYEKIPGSANMLYRKWNKRCREQIARGDRGAFSENIRGIVREFDHIEIADIVKPRVGVVGEILVKYHPEANNNIINVLEREGAEVIVPDMLNF
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01488_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01489_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01490_hypothetical_protein
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NEYDFEEKAEYYLQHEEERLQIAEQGYEMVRTHHYTGRRALDLKIAIEEICRDWSGAQLSTGKQPFSSRIRVRKGVRL*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01496_putative_enoyl-CoA_hydratase_echA8
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01499_Acyl-CoA_dehydrogenase,_short-chain_specific
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NEDGTQGAWNDVTSTGIEHKMGIHGSSTLSLSFGENDNCYGWMIGDGPVDGRGKGMAQMFQMMNEERLNTGTFAQGCIGSAYYAALDYCKMRVQSPKFTDPKGPSVRIIEHEDVRRMLLFQKSIMEACRALLYTTYFYQDLSHDAADPAEREYYDDMTMIQIPLCKAYVSDMAWISTEQAIQCLGGYGFIEEYAPAELARDCKIYSLWEGTNFIQAQDFNNRKTTMKKGEPMKKWVAQIA
DFLATKKDPAFADEFAMMDDAFSAYNEILSTKEAWRASNPQLVQLFATRMLHAASMMICGKLMLDQALLAAKKLAELGEDHFDAMFYKGKIATAKFYIMNVVPGVFGTLKAMKVADTSAIDMPEEAFM*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01501_Transcriptional_regulatory_protein_ZraR
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TDGEGNTLRLNQGFVRITGISMEECVGSNMRELVDTGVFSDSGTLLALEKQERATITLVARTGKEVLVTSTPIFDEQGNIAFIITNVRDITELNELERRLKHIGLRDREDLTILDSSFDGIFITDGEANTLRLNQAFERITGVTAQECVGRNMKELVDEGYFSGSGTLLVLEKGERATITLVTRTGKEVLVTSTPIFDEQGNIMLVVTNVRDITELNKLEREFKKMVGLRERELDAVFESSYDGLYITDGE
ANTLRLNEAFERILGVKAEECIGRNMRELVAEGVYSRSGTLLALEKQDQVTITLQAKTGKTALVTSTPIRDEHGNIILVVTNVRDISELNELQEKLGHAEGLSRFFQSELQEMKLRTQCVIHSSKMRELISMVVRIAAVDSTVLIQGESGVGKELVANTIHSNSNREGQPMIKINCGAIPENLLESELFGYEPGAFTGASKQGKVGMFEVADQGILFLDEIGDLPLGLQVKLLRVLQDKEILRVGGTKPIK
VDVRIIAGTNYNLKEMVEKKLFRKDLFYRLNVIPITVPPLRERREDIPILANHFLDNFNQKHGMNKKLSGSILAYFMEYDWPGNVRELENLVERLVVTSLNQTITAHDLSAWSELKPENKSDNEHGIVRLQDALENTERRILENAFSVCKSTYEVARALGISQPTVVRKAAKYGIRG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01502_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01503_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01506_Periplasmic_[Fe]_hydrogenase_small_subunit_precursor
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01507_Periplasmic_[Fe]_hydrogenase_large_subunit
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01508_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01511_putative_ABC_transporter_ATP-binding_protein
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TGHQIKAFGREEESIARFKQINEELYEVGWKAQFMSGIIVPLLSLINNIGYVLVTVVGGIFVINRTITIGDVQAFIQYSRQFTQPIVQTANIVNIIQSTIASAERVFEILDETEEVADSDDAQLIAFPRGNVNLQNVKFRYQENVPLIEDLSIEVKAGQTVAVVGPTGAGKTTLVNLLMRFYEIDGGKITVDGVDIRDIKRTALRSIFGMVLQDTWLFNGSIRDNIAYGREGASEAEIIRAAKTAHADHFIRTLPE
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01512_putative_ABC_transporter_ATP-binding_protein
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ADATVIVIAQRVTTLMDAGQIIVLEDGRIVGMGTHKELLNSCDVYREIVYSQLSEEELA*
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LSEKHELLVELLREVNRGVGKYVKNVLAEHDISVPAVIICKQLKGEAGITISELARRTGMAKSHISNIIRELEQKGWVRKKTDSSDHRVLRLYLNEAASAHLELLRIDIRQNINALVADITEQKAEDLIQGLREIIEALDKVRTEENGCEGKRRQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01514_(R)-2-hydroxyglutaryl-CoA_dehydratase_subunit_beta
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DDPARAAQMANNLADELEQRINNGTGVFPANTLRIMISGTPMAIPNWKLHHIVESLGAAVVVEESCTGTRYFENLVDETATTLDGQIRALAERYMKTNCACFTPNSARIDDIIRLADEYKVDGIIDTNLQFCNLYSTESYLIKQLMTERNLPIMHIETDYSEQDFEQLRTRVEAFLEMLRK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01515_2-hydroxyglutaryl-CoA_dehydratase_component_A
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EKVIRLTEELGAYIVAMENCSGYKTLELQTDTNSADPIVALAEKYMAIPCSCMSPNPYRLKLIENMINEFRVDAVIDLTWQACHTYNIEAFEVGKLVKSKGLPYLHLESDYSNSDLESLKVRIEAMLEMVEK*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01518_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01520_Endoglucanase_precursor
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SIVAAGSSVLINGNQKLELESTSDNPDLIIDNNRYAIRRYSLSGNKLVAYPGCRKFNRISPGTYTYNSDYIKLYINSVNSERYLSDLEIVDEYTVKLGEKNYNLSQDKITIQLDKDFYDIKRVIMGDSDTSPQLNKTDPVVFEGLSMSDILAIFTGTGTSTLNLQSSNRIDFIIDGKRYTMSQVKLDAKGNFTVNSTNYPSANVIMIIDGTQYKINHIDINNSRFIFYCDAGSTHEWVIINNEYHNPDDVRILWDGG
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01522_GTP-binding_protein_HflX
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01523_Regulatory_protein_MsrR
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01530_NADP-reducing_hydrogenase_subunit_HndC
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01551_hypothetical_protein
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HIGRSNVPGIISRYAENALLASYFEKLGSTSVYKVGEMTSRKDAYYRQINEDSGSRVWAHPDIEGFLQEFYQGLFLPREIRLVLSQGEELNQESVFTTEFDRGREQVTIRPLVFGEDAEHNLTQHINSLQKEKLFNIFLEMDLGKAWQPSLTPYLLSSGFKPCLLLPYAGDGDLLIFQFEAGDAL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01552_CRISPR-associated_endoribonuclease_Cas6
MNLCFHELLFTIQFNQDIPVRQVQSSLAALIANGMTFSEPLKELHQQNIFKPYVFSMPYPLEPNRIYRRGRMYCFNLRTLKLDFALAMKNYLPQAQGNARVVATELRTYSQPQISQLISLTPIIVTVDNLCWMPENGIGLLASRLHNNAAKKYKAINSEFAEPEEMFFELLEILNRKPIGVNYKGTTLLGHKVQLKVKPQPWAQQLAVTVLAQGLAEKNSIGFGYCIARR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01553_hypothetical_protein
LLKDLLNEFVNHPDFDVDTMVLDNYQLKPGLYIRFNNDNTMNEIYVSKKTDFAENDPLAEWFKKADFYSSLIEMNKPVDPKKKIHSNNLFTLFCKRDVFYQEGKVHPELQEHIDRYFSALLNPRNRETAEILAAAYYESLPEESVNYSKARFNSVLDMVAEYIKKEGIRDNCYIKIFLNAEEEAYVYESGRYLLPKIFNNNSCNVNVGGRILGLSNTDMGMNAKKPFLEHKTTAFKVPYRISAEEALLLR
KLYLWLFGQGRGGRPLYNGYIPVWEHAPQLLLVANEVDVRKPVIYLHFERGINLTIDDCEFLPSFSDKMSKAIAFTNYFDNCLNKSNYKGGILDKLSAVEAHINENLYAFQLLRNYDVENIKVTDKLSQALANQIMLSREAMRAWLRKGYSLPMQSGVDKITMGVILARLQKLEFIPALAYALNVRFSLMKYFREEEKDMGLTIQTAYLNLREKVLNTKDTANCENDLEFYLATGQLLRYFFSLSQA
QTLHYDVLWRGITAARDAGDIKTECRKYFQRYAHDINNNPRFNNMLSIVSSYLPEKEEPINLDALFYGFAADNIIYYKDKEDDKNDKEQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01554_hypothetical_protein
MIKNNRVYGIIGVGAYMANFNADLSGYPKTTTNNDIFGSDKALKYPMKRMWFIEGDKVFYIKSMTISKSKKDKEMEILQPKDLIERYEDLFGKIWDANLTVKDVAKDLFSTVDIMNFGATFTGSESESKTAKKKIGHNISITGAVQINQGFNLYEKTNVLAQDILSPFRNPNDKSEDKTATSIGTKIVTDEAHYVYSFSVNPANYADYVGLIDGFEGYTIEAYEKFKRAARVATTAFNTNSKSGCENELV
LFIELKEDSKLFLANLDRYVEVRKKEKQTLYDLSKLAEIIAPQQEEIQSIELFHNPISVEVNYGSLPCAVNSIF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01555_CRISPR-associated_protein_Cas5,_subtype_I-B/HMARI
MKSLRFTLSGPLACFRQPDVNAKVYFTYNNIHKVALLGLLGAVIGLSGYRNAELYGQGEKLYPSFYEVLSPLLVSVVPNAKNGYFSKKIQYFNNSVGYASKEEGGNLQVREQWLENPNWTIFLAQHELDASMWDKLCDYMLQGQCVYIPYLGRNDFPAQISDVHMVELSASRSGRIDSLFLYGGDLNTLDGGDPSQYLFVETAPTGLVPKHNFYEFGRYIFTNCTLPEDELPPYLYSDGVRQYSFY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01556_helicase_Cas3
MQKVSLVSPYQLQDTRYLAHTRTINGYKQTETLLAHSQLTLHYFKIYGSIKDIDKIIKRLIDACGFQGEEADKVYLAFVYAIYLHDYGKINPRYQYDVLKNKVFYAIRGQAINSNHALASAYLYLDHMYRLWPEKPTPVLAKCLANFAYCISKHHGNLGNGHDFSDLEHFAEKYYISEIDHSIFEYTQYYMQQQKLIKQPIAFYILCRFLYTLIVGCDYCATQEFMTGCAMHPAIIGEGGRELAQSYNESAI
CQSIRQYQHNPTDFDGDPINKLRNELFLEAERNLIANPDAHIYYLEAPTGAGKTNMAINLALRVLQTNSNISNIFYVFPFNTLVEQTKTTLLPLFGDKLAIINSITPVVVGGDDRAEDYNVAWLDHLFNNYPIVLTSHVNFFNALFSCGRNQGFPLLKLCNSVIVIDEIQSYKNAIWREIISFLQKYAKLLNMKIIIMSATLPQLDKLLKTADAKFATLIEKPEKYYHHPLFRDRVRLDFSLLAEEKITLDRLK
KEVLRFKDKRVLVEFIKKKTARIFYMMCKDECNAVLTGDDNAIRREQIIKRIRNGEQLVLIATQVIEAGIDIDMEIGFKDISLLDAEEQFLGRVNRSCLNQEGALVYFFDYDDASLIYRGDARLYHSIRDAAIQQLLNEKCFSEFYATVFKDLIARTSRSNEKNIANLDKHCAQFNCKEIEAHMRLIEPNLQLFVPYVWGDLDGYQVWEEFKALGSNKALSYAQLMVEYSRMALKMSYFTYQVFRNNIPT
GAEEYGGYFFIDGGERFIEEGVLNREELEKYYGGIFL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01557_CRISPR-associated_protein_Cas4
MLTGTLVNYYTHCRRQCWLFYHHINMEDNSEDVRIGRVLHELKKQDKKEIALEGIKLDKLTAEYVTEIKKSDADIPAAMAQLEYYLIVLRDKGIMRKGRLECIEKNKQNKSIHTLTLTEERIGELKKEYRGIEEFLNSDVPPPPPKIKPMCKKCAYFEYCFI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01558_CRISPR-associated_endonuclease_Cas1
MNSDTRYIFSTGELFQKDFSIVFRKEDGNIYLPVKDTRELYCFNEVTLSTKLMQLLAKAGIVVHFFGYYENYIGTFYPKEYLLSGRLTVAQALAYGNNRLTVAKPIVCGIAKNIHFVLYHYYRHGKSDLKEFLDWLHKSVPKLVDDTGDIKQLLRIEGAIWAGFYQTFCEILPESFAINKRVKRPPDNPINALISFGNTLLYTKTITEIYRTHLDQTISFLHEPAERRFSLSLDLSEVFKPILVYRTIFDCVNNR
KITVEKHFDKSLNYALLNDAGRKTFIEAFDERLNQTFEHSALKRRISFKQAIRLDGYKLIKYILEGKKFIPFCMEDKK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01559_CRISPR-associated_endoribonuclease_Cas2
MKNKLNYNYVIVFYDVGEKRVAKVFKICKQYLKHFQKSVFRGHITPANYLELKGKLLKVIDLDYDFVTFIQTISDSSFNEESIGNTGINPESIIL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01560_hypothetical_protein
MIFSNPDCILTGRKWLKYCGEGRGTIILLGINCRLEKMEGKSDIMLISRLV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01561_CCA-adding_enzyme
MKINMPENVQTILNKLHSNGYQAYIYGACIRDYLLGKEPISWDITTNALPNDTIVVFDENEGFTAIPSVEDYGIVTIHFKGESYQVNAFRTGEERRFADDINEDLLHKDFTMNSIAYNEQAGVVDPYNGVGDIEKRLIRCAQNPYKQIQEDSARILRAVRFESQLGFKIEAELLQAMKDLKDSVPASGSARVRNEFIQILLSELPSQGIRRLLELGLLERLIPELMPAIGFDTCSSYHDKDVFEHSLVVLDNT
EPNLTLRLAALLHDIDKPNCLTIDEDGEGHCYGHASGGGEMARTILGRLSFDRKTIKAVSALIKEHMNDYENISELSIKRLIRRVGPDNIDRLFELQLADIKGSALSSRDPERITKIRNKCFEVLSRREPLTVHDLDISGYDLLSLGYPPGKEIGEVMDYLLDQVIDNPSLNQRDTLIALLKNRQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01562_mRNA_interferase_PemK
MAYIPEQGDIILLQFDPQAGHEQRGRRPAFVASNNIFNQFTKMAIVCPITNTNKGFPLHVPLDERTRTTGVIMCEQAKSLDILARKASLIEKAPQDIVKEVTDILMVSIECSD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01563_Antitoxin_ChpS
MYTTIQKWGNSQAVRLPKDILEEANLQENDKVQIKVRDGNVIIIPDKKRKTLKERIAEFKGDYECNEWNTGKPSGNEVW*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01564_Cellulosome-anchoring_protein_precursor
MKTGRRIILLITLMLALLLLGGSSLLAAEASNEAQLQKAITEGNDDTITIMNNIALTKRLIINRPVTLTGVDCSINTGVNCIYVDSNGNLTLSGKLSITGNGEGLPTLDVSEGNANIIAGVIEATGAFGNGIYSSGNLNISGGEIRATGKESIALVLSGSVNMTGGTIKAEGPKSIGVGVSRGQFTISGGNITATGPGISVYTGTVNINSSENMNLSGGVYSEDLSTDQIQYTAFFTTLPKPVIINDNHANTFKL
LGIDPSLSFTVGNSTSKILGASISGNTVSLNPTRIGDYILILSSNIAKQQSINLTIPVKVNNVSSTNSTSPQPNGNITSDLSGHWAKDSIMQLINAGVIKGYPDGTCQPDKTISRAEFAVMLVQALKLEPKAGNTFSDTASHWAKDSIATVAAHGLVSGHNKNIFGPDELITREQAASVYSRLAKLESSTFALNCTDKKSISAWAEPGVAAAVKIGFFNLYPDGSFKPQGYTTRAEAFFALYKYLSPEGPQTVK
Q*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01565_hypothetical_protein
MQSAAPLFSKAIFYKNMNRFWPIFVAYTVILLLIGFSTVANGRYERLAYVPNTFANTIFGFSGVMPALIAIFSIMVAAAVFSFMYNPMSVGMINALPFKRRTVFTSNYLSGLFMIIVPLLLFFLSMLVIGLNYECLDMVALLNWLFIFFSLSLLLYSLAVIIGMLTGHIIAHIVFFVIANFLIIGLKVLTDFFLDRFLYGFVGTLHNIDGFFMQATPIDYASGLQSTYTSLNWTVWLVYLLLGVLFVWLAQILYKNR
KMENAGDVLAIRKLNPVFKYGVTLCSTLALGAILLEIFNVQYNTLVIPLLLFLLAGLVGYFIAEMLLKKSFRVFGAYKGFVIYACLLIITSMSVYYDWYGYATRLPDADQVEAVVFSYNGGQYDVLQTLQAEQNHVDLDISNLPESLALSYGTPLSMQKNPDSNDYVYPESRAFTPEETRLLWSICPGIYTEDESIDSTLKLHQYLADNIKTVRSNYRQRSMIKDYDGEEIQYFNISFIYRLDNGKIEKHSFP
MIIPVQPSEEIDQKTISQLASLAGNREERVKRLAAIDLPLNDIRHITVDLYRLRDLMHDNLKSNNEVRRNVKYQPDKKYTPIEVRDEDKKAFFEAVKADYQNMSNEKMVRSQMLRHGEGDIGNFTLAIERSNLPQTNRFRDGRSTYGISVYYENTFRLLRDKGYITEDVYNFVNIHREMLDEKYSNQTVRRIVSIAYL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01566_ABC_transporter_ATP-binding_protein_YtrB
MIKVLNLCKSFDGFQALHNVNVTVPKGSVYGIVGPNGSGKTTLIKHMVGILIPDQGTIKIDENEVFDNPAVKKRIAYIPDDIYFFLQDDMKDMINSYRRVYPAFNDERLEKLIPLPFPLDPKMPIRRFSRGMKKHVAFIMALCSMPDVLVLDEPMDGLDPVARRKVWSLLFQDIAERETTVFVSSHNLRELEDVCDHVGIMHRGEVVLERSLDELQNNIFKLQMAFRNESPDFNSLNVLAEHKVGSVI
QLVVRGERKEILDKAVMLNPLMIDVLPLSLEEIFIHELGGMDYAISSAII*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01567_HTH-type_transcriptional_repressor_YtrA
MQYSTHGTRDFFILQWEVIIIISIDLKDPRPIFKQVRDGLKKLIICGILKPDEKIPSVREMAQNLAINPNTIQKAYRDLEAEGYVYQVTGKGTFVASTEPGENSEKIEQLLLEVLKLARELIYLGISKEEIVAAVESL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01568_hypothetical_protein
MDMTKREKLIERLMQRPSNFEYDEARTLLSRLGYSEETRGCTSGSRVAFVNNETKHIIRLHKPHPGNTLKKYQVEQLIDELSKQGVIKS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01569_putative_protein_encoded_in_hypervariable_junctions_of_pilus_gene_clusters
MKDIILYKDYIGSVHYSTEDEVFFGKIEGINDSISFEGSSVTELKAAFEEAVEDYIELCQLNGKEPKKTYKGSFNIRIRPELHKQAVQLALMEGKSLNQFIENAIEDRIMQSV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01570_hypothetical_protein
MSIFILDSLIIFGLNLFSTCMGNLKTSFLAQKTIKPVYVITFIDALVFVYAFKLIATSSGYGYILAFALGRLSGVFLANKIEKKLAFGLLEIDVYKHPEEGKILADNLREQGYSVTTTLGYGVGGKERLVLTAILPRKQFPDFYAIMEQDGKVNMSVKSITKTYGKVGSINVLAE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01571_Putative_anti-sigma_factor_antagonist_BtrV
MDINEMKKDKATVITIEGRLDSSTSGILEKKLLSLMDTGEKNFLLDFSGMDYISSAGLRVLLMVAKKSKTAKGKVLLSALTDNVKEVFDIAGFTDIFTIFATAEEALKDF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01572_Serine/threonine-protein_kinase_BtrW
MEFRLKNELEEIRLLAEAIELWGEENGIPGKTLFQLNLALDELLTNTITYGYPEGGEHEIMLRLIPEGEKELLIEIRDDGLAFNPLEVKAPDLKQDIEERPIGGLGIHLVRQMLDELEYRRENGQNILLMRKKY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01573_Low-molecular_weight_cobalt-containing_nitrile_hydratase_subunit_alpha
MESKTNEQDKIMGKLISRCWMDKVFKQRFITDPAAVMREAGLSLPAGVEIKVVENTDKINYVLLPARPTELSDEQLDAVAGGVALSPWLTSIYTESSCDCDY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01574_RNA_polymerase_sigma_factor_SigM
MKSSSLKNENQLLLQATIDPEAFAEIYDYYFTRVYNYVRSRVNRSSVADDLTSQIFERVLFKLDKFHPERGSFGTWLFTIAHNIITDYLRNQEQRHTVSLDAVRELACARNGPEEAYILQESQQDLQAALELLNNRERNLIGLKFWAGLNNRQIAQMTGLSESNVGVILYRAICRLQFALKKEAFENE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01575_hypothetical_protein
MNKQERIKQFNHAVDLLLEGKAKGLLPGDGTCNKELELVQKLMQLDSSKQSKIRQPLRQSLQSMIKNTINPESDRKSELSDDELEGISAAGDSWDKGTGPMAPPRRCQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01576_SagB-type_dehydrogenase_domain_protein
MGDNLILSFRPDLKIKEEAGKIYLQSPVRSLVCQRVSRGLRQSMKTLTAGGGSEDFLSELAFKEDGAGGLANFYYHLQQFIERGFISYNVMMEQEILAIYTPFSGAPLFNEKPFKQKRRYRLSRFTYSRRDGQEIILESPLANGRVVLTHWLAAAVLHLLAEACTAGEIRTQFPTLPKKSLQLFLELLLSAGMLEEVDDAGISPGEGDEVLQQWEFHDLLFHARSRLGSHEQPVGGTYRFRERIAPLPAVK
NPMSSERIKLYRPDVEKLREDDYPFSLVLEERKSIRNYADKPISVQQLGEFLYRSARIKELIKANPPAGLLYEASNRPYPGGGAAYELEIYLAVNECEGLAGGLYHYDPWQHELEKLSTRTSEVEGLLKYCSAAAGLKELPPVSLHITARFQRVAWKYQSIAYSVILKDVGALYQTLYLVATAMDLAPTAIGSGPAKLLCRMAGLNYLEESAVGEFILGNKRI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01577_hypothetical_protein
MDATPGEGEWRERFTLRVLLVFHPAGVTIKVADQDGRLARYPLSRETSRRCCPCEAPCRAQLMLPSVAIKDAGAVYLCKPMNTKKFLQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01578_bacteriocin_biosynthesis_docking_scaffold,_SagD_family
MHEKPQFKAHFNIHIVEDEKAVFLLSELDCYVLQGRIYCLLAPLLDGKHGIDQIIDHLAGQASIAEIYYALALLEKKAYITEAGGDFPREQLAFWSALGVETPALFEKVKSNPVSVISLGSDSTGTLLSILQEMQLEIAAKAELLIVLVDDYLQPELEELNQKFCREKQSWILVKARGSIPWLGPLFIPGKTACWQCLAQRLQNNRDVEEYIRRQQELQSPVNIPPGTLPATRGLVWNLLAVEVAKQLLNG
RSLFSENKMISLDIYNMSIESHALVKRPQCPICGQAADIHKAAQPPLLQSTQKLFTFDGGHRSISPEETLQKYGHHVSSITGVVKFLHNPVEDDSFLKVYHSGHNCAAKYGNLALLRGGLRSQSAGKGMSEMQAKAGALCEAVERYSGVFRGEEARIRASYRELGEEAIHPNRIMNFSSTQYLNRELSNAREGKFNQVPEPFDENQEMDWTAVWSLTREKFRYLPTAFCYFSHPENKTLFSCSNGNAS
GNILEEAILQGFFELVERDSVAIWWYNRLQMPEVDLASFNEPFIHEMQRYYRRHDREIWVLDLSSDLNIPAFAALTRKSSGAQEAIMMGFGAHFDARLALIRALTELNQMMLFVLELENGKWGEENIIDNATPEWLKQATVANQPYLLPHSGKSVRKAGDYNDLSGEDFLSDIKSCRQIIERKGMEMLVLEQTRPDIGIAVVKVIVPGLRHFWKRLAPGRLYDVPVEMGWLPLPRLESEMNPIGVFL
*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01579_Glutamine_synthetase_1
VFESFDEALGFCNEQAIRMIDFKIIDLLGRWHHLSIPLGRFKPEILEYGIGFDGSNYGFAPVENSDMVFIPDLSTAVYDPFTVVPTLSMIGDIFVIAQPDNYRFDQDPRSIAAKAEEYMKSTGIADEMRIGPEFEFHVFDHVSYECSPQKSGFTIDAKQAMWNSGDNEKQNLGYKIPANGGYHVAPPQDILYDLRARMCLLMEDNNIPVKYHHHEVGGPGQIEIEVEFGPLREMADRTMLAKYLIKNLA
FQEGKTVTFMPKPIFAEAGNGMHVHMHLFKNGEPLFYDASGYSNLSQLALNFIGGILQHAPALLAFTNPSTNSYKRLIPGYEAPVSVCFATANRSAVIRVPAYAKSPYHKRFEFRSSDATCNPYLAYSAILMAGLDGVQKKIDPVTAGFGPYDMNLYKLPPEKQAQIKSLPRSLDEALDALEKDYEFLLPGGVFPRRLIEIWIEKKRRETRKVNEIPHPMEFELYYDL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01580_hypothetical_protein
VNKLKRTRLIILILIALLLLGLAASARSIEEYYIKSQLDPQIELQTSIKNMTTVDSYRYKLTSCFTVAERKEVISRVEGEKSGANTHIKGEMVNTAVDIYYIDRTIYNYDAFSKKWLIIESDTNKSEELLISELNPLSNFRFKQIAAVEKLRFEEVDGVECLVVGCRPSIESRLLENLWKSFEYRLWLDYKERMVKKADLTAVNKKAPDTRLNLLVEFSDWNQKIDIRPPDTSGTKKN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01581_Hypoxanthine-guanine_phosphoribosyltransferase
LDLVKVEVLFDRETLKQKVAEMGKQISRDYKGRDLLVVGILKGAFVFMADLIREMEVPVELDFMDVSSYGISTSSSGEVRIVKDLEYSIKDRDVLIVEDIVDTGLTLKYICEILRNRNPRSLKIACLLDKPSRRKTDIHPDYVGYTIPDKFVVGYGLDYAEQYRHYPAVCVLKPAVYEN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01582_GMP_synthase_[glutamine-hydrolyzing]
MKKETVVVLDFGGQYNQLIARRVRELSVYSEMLPYDTGYEEIVAKEPQAIILTGSPASVHGGEAPHCDPRVFSLGIPVLGICYGMQLMAEQMGGKVQPSSLREYGRAVLQLTGEDEIFKGLPDQMQVWMSHGDTIISVPEGFRITASTANCPIAAISCPQLQLYGVQFHPEVRHSTYGMDILKKFLFEICGLRGDWDLSDFISEAIAEVKNKVGNKRVLCALSGGVDSSVAATLVHQAVGEQLICVFV
DNGLLRKGEARQVIDTFAKEMKMNLVFVDAGERFLAKLTGITEPERKRKIIGEEFIRIFEEEKAKLGEIDYLVQGTIYPDIVESGTSTAQTIKSHHNVGGLPEDMDFQLIEPLRLLFKDEVRLVGERLGIPAEILWRQPFPGPGLGVRVLEEVTFEKLGILREADAIVRDEIKKAGLEREIWQAFAVLPPVRSVGVMGDARTYAYPIIIRAVISEDAMTAEVAKLPWELLDIMARRIVNEVAGVNRVAYDITSK
PPGTIEWE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01583_hypothetical_protein
MPEAIEKQSGSQGNQSGTGSNQQPEISSNEDTCFLLSYVSYLRLRILPIKEQSLFIVMITRLREKQC*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01584_long-chain_fatty_aldehyde_decarbonylase
MNPSEFERIMKLAIEAETEAYEFYRDVSEKITDTSVKKIYQEFAQEELGHRTLLEQILRHDIKSFSFTGASNYKVSETVELPRLSLELKPVDAIALAMKKEEEAMKTYSSLAALSADPEKQKILSELAKMEEGHKARMEALYTNTAFPEVW*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01585_hypothetical_protein
LEEYIKQLAARLASELEELEQGSGFAHFLAAPDSEVREEARELKEQIRNLRAKLQGIL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01586_Extracellular_esterase_EstB_precursor
MLDILSAMALGDYLSRGLGQIGLEFWQSVSHDIFLNVGMEYKNSNRFWERVECREVESLAGKEQHFCENNRQLDKDIIAHFGSATPDAKNYLLHYAVGWDSNRNAVPLLLLHGAGLDATSFCDVFALGYTGLQQQLVELGYRVFALSFSHPHGDNYYQALQLADAISRVRELTGAPQVDVLAHSKGGLAAWIYLSGLASTPYSGEVRRYIMLGTPNGGTDFAFRNPLFNYLIYISGSNGVMAWD
QVLSLGSLVDCSKQAIYHDGCFPGQSQMLARWDEKFALDPLQQDWWSTYYGGSGLISHSRGIEAAIQDGGSCMQKLNRHGLPPEIELAVLAGDKHFLNCLPGECSAPSDGLVLVDSVLYTDGLMREGAHLLEKTVLPLNHLELLFFARRAGRWVDRQLRD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01588_N5-carboxyaminoimidazole_ribonucleotide_mutase
MPRVGIIMGSDSDLAIMKNAGDILREFAIEYEYTICSAHRLPAETAAYAKEARDRGIEVIIAGAGGAAHLPGVIASYTLLPVIGVPIKTSSLSGVDSLYSIVQMPRGIPVATVAINGSANAALLALQILALHDESIWQHLQEYRNKMAREVREKDRKLQDLGADAYLNIKK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01589_Adenylosuccinate_lyase
MIERYTLSEMGRVWSEENKLKNWLKIEIAACEAWAELGKIPLSAVEIIRGRAAFKLDRIKEIEAEVRHDVIAFLTNVAEYVGDDSKYIHLGMTSSDILDTGLALQMRESADLIQDKLEKLQRVVAEKAIRYRYSLNIGRTHGVHGEPSTFGLKMALWYSEIKRNILRLEQAREIISFGAISGAMGNFAHLDPRVEEYVCHQLGLKPCPVSTQVIQRDRHAQFMTTLAIIASSLEKMATEIRNLQRSEILEVEEP
FRQGQKGSSAMPHKRNPMMSERVAGLSRVIRGNALAALENVALWHERDLTHSSVERIIIPDSCILLDYVLEKFRAVVQGLVVYEENMLENMKKTRGLVFSQELLLALLTKGLSREEAYHLVQRNSMKSWQERLDFKTLVEKDAAIMQLLSHDEIEGIFDLSIYQAQVDYIFKRCGLD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01590_Amidophosphoribosyltransferase_precursor
VLEEMKDLDLLSTCCAEDKFHDECGVFGIFLNESEDDCEAARTTFYGLYALQHRGQESAGIAVSNGHEIQLHKGMGLITEVIKPDHIKKLKGRLSIGHVRYSTTGMSNVVNTQPLVFHYLNGMLALAHNGNLVNTVELRKRLAAYGSVFQTTSDTEVVANLLARYSQDNKIEDALARCIMDAKGAFALLIMTEDRLVGVRDPMGIRPLCLGELNGNYILASESAALDTVGATLIRDVNPGEIVVID
QDGLHSRQVIDSPRRAHCIFEYIYFARPDSTIDQVNVYQARREMGRQLARECDIDADMVISVPDSGTSSALGYAEEAGLPFEEGLMKNRYVGRTFIQPTQKMRELGVKLKLNAIDEVVCGKRIIMVDDSIVRGTTSKKIVQMLREAGATEVHMVVASPPTRFPCYYGIDTSRREELIASTMDKTEIEKFIGADSLHYLSMEAMFAAMKSGEDTFCSACFSGKYPMEIET*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01591_Phosphoribosylformylglycinamidine_cyclo-ligase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01592_Phosphoribosylglycinamide_formyltransferase
MIRVREAGRISLAVLASGRGSNFDALCQAVERGQLDADIKLLLSDRRDAPALEKAARRGIESIFLSPAAFTSRDDYEACLLQKLREHGVEIIALAGYMRLVGKVLLDEYKWKIINIHPALLPSFPGLNAQSQALNYGVRFSGCTVHMVDEGMDTGPIILMQAVVPVYQDDEEDSLAARILLEEHQIYWRSLQLLAEGRVFLDGRRVIIADKQGG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01593_Bifunctional_purine_biosynthesis_protein_PurH
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01594_Phosphoribosylamine--glycine_ligase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01599_ATP_phosphoribosyltransferase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01600_Histidinol_dehydrogenase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01603_Imidazole_glycerol_phosphate_synthase_subunit_HisF
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01606_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01607_Anti-sigma-V_factor_RsiV
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GSHLYLVSNRHLDWYRIQEKEENILPSYRDTAVSSDFKQIDCGQINYFPGEIYPAYIIIAAVDINRNEPAQVKTCLGNGENIYASINHLYIAVSRQEPARPLLKDSDFPSPDAEIGPKTRIYRFGLQQGKVEYQGKGEVPGRILNQFSMDEEKAYFRIATTSGEIWRNDENTSKNNLYVLDQEMNIAGKLEGIAPGEQIYSTRFMGDRAYMVTFRTVDPLFVIDLKDPAKPAILGKLKIPGYSDYLHPYDEN
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01611_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01613_YcfA-like_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01615_Metallo-beta-lactamase_L1_precursor
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01616_Manganese_transport_regulator
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01617_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01618_hypothetical_protein
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ESRQLLRDNDELEKQVRQQKEAIIQLCRESKMMARCQALDSGISAGGEAGEIKKRRLLLVGGNSGLNNHYRDLINGMGWEFRHHDGCLNGGRQSLTEMLKWSDLILCSLDANSHGAVHCVKELAPKLHKEYRLLGNSSLSGISRALAEQSDTCTA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01619_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01620_Cyclic_di-GMP_phosphodiesterase_response_regulator_RpfG
VIKMLAEKLDNKTIENRNTVPVSLNKLIAALSAAVDLAGSSDRKHSLRTAYIATRLASNMSMEKAEVDNIYYAALLHDLIPAQSYFNQSLIFEILGNLPLSSQVAKQVVALWQYKQGNGIASRLGHLSLSERIIYLAECFENQYCNGESEEYLLRRSLSNWSNRVAAAADKKIAAALADCLREEAFWQDLKENRVQRALEQMAPDWRQQLNIDDLEKVSRSFSLLIDRKNPYTGQHSQRVGMIAGCCAR
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01622_Ferric-citrate-binding_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01623_Nitrogenase_iron_protein_1
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01624_light-independent_protochlorophyllide_reductase_subunit_B
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01627_putative_ABC_transporter_ATP-binding_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01628_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01630_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01631_Regulatory_protein_PchR
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VPLEVNETLLDDMPDSAGARMGYIEKIDLGCSKNACGNCYMKAGGDSHKPLMWAITKKGIDFMGKQTLI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01636_cysteine/glutathione_ABC_transporter_membrane/ATP-binding_component
MNNAALVRKKTGIPRLLEIAGEKRGLLVLSGVLSVISTVLMFFPFVAAYFIVAELLQHAASPALSDMDSIRQWGLWALYALLGALLFLYASTMASHIAAFRILYSLRVRLTEHLARLPMGYHTRQSSGTIKKLLELSVEKIENFIAHQLPDLVGAVALPVIMLTVMFILDMAPGGCLCRPYYSGLFPAGAGVLWRGGDGQYQRYA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01637_Iron_import_ATP-binding/permease_protein_IrtA
MANIRDMHDTQERMNAAGVEYVRGMPAVKVFGLTVSTFLQFHNSITGYRDWAVQYVRFCKRPYMVFITILASLIVFILPVGVFILSQKPDNQAFALTLMLFLVVAPGFVTPMMKLMNLGGNMRIIAEGVERIDEIFAQEPVAEPINPQKAEGYNIEFDHVVFSYDDPAVSTRTEALAGVSFTAREGELTALVGPSGGGKSTIAYLIPRFWDVGTGAIRIGGVDIREMGSEQLMDMVSFVFQDVHLFY
DTIEENIRMGRSDAGYEEVVAAAKAASCHEFIECLPQGYQTRIGEGGTYLSGGEAQRVAIARAILKNSPILVLDEATAFADPENESKIQAGLSELIKGKTVIIIAHRLSSIREADQILVVDEGRIVERGRHNELIDRDGLYRRMWRAHIDADSWTIAAEQASKAVNE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01638_Putative_multidrug_export_ATP-binding/permease_protein
MRNFFYNITSGNPTALLVPSLASFFDGLGKIIPAALIFDVVNNTMYLFFAHPGTPLNTGRLWTVCAILLAWMLLQYLVSGWAYSQTFTAAYAVSAQGRIALAEHLRRLSLGFLGSRDPGDLTTMMLGDYAAVELTISHYVPQLVSATALPVIAFIGFSFINWKMALAMFIALPLAILIVWLSAGLQARLGLNHVKAKVDSASRLQEYLLGMREIKSHNLSGERFERLREAFARLMRESIKIEGVVGPIMMAA
IALVRAGLTLMIFVGSYLLVGGELTLPVFLMFLVLGNMVFEPLTGVLINYAEIRYSVLSAERIMQIRREEPLAGAKNPPPGNHIEFDHVTFAYEDALVLKNISFSIPPGSITALVGPSGSGKSTITRLIARFWDVQGGEVLLDGQNIKEIDPEKLLTRISMVFQDVYLFKDSIRNNIKVGKMDASQEEIEWAARQACCHEFIMKLPQGYDTPVGEGGCTLSGGEKQRVSIARALLKDAPIVLLDEATASLDPE
NENQVQRAINALVSNKTVVIIAHRLKTVKKADNIIVLDDGRVAEQGRHEELLANQGLYHHLWTLQQESAGWSMKAS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01639_Endo-1,4-beta-xylanase_A_precursor
MKGKSRIVSNGRTLRKIIGMLLAVAMVVALLPITAYATFSDMQGHWGQTAIEKWSDMEIVQGWDGAFRPNAPITRGEMAVIIDRVMKYQTKSKNSFSDLGSAFYTDAILKANAAGVIKGDGTTVRPMDNITREEAAVMLGRALGLSENPTGGTAFSDYADISGWAVGGVNAMANKGYVKGFNAAFHPKRSITRAEVVAILDNSIKQLYNGNKEYTGNVSGTAIVNTPGAVLKNMKISGDLIIAEG
VGDGDITLNNVTVAGNTLLRGGGSDSIHIQGGSQISNLIIEKTDNGAIRVVTSGGAVVETVWVDDGRDDIILTGSFESITVAADVTVKAVDAKIERVEVTVKNAVLDVDKESAIDALNVTGTAANTEIKVFGKVGTLTADAKISVNNQGIIARAQINANDVSINGNAPATMNVAATVTTRPATGSAPSSDGSSGGGGSSSPSFAGGSGTESSPYQIATAAQLDQVRNYLDKHFVLTADIDLSGYENW
TPIGAFRPLSDAPEHVETPDPEAAFSGTFNGDGHTISNVRINQPEGMFVGLFGCTVGQEDNPTSIYNLTVENVDVTGFHLVGGVVGMQYSGCILENVNLISENTGDNTVCGNQGVGGITGISFEDMKNCRAEADIVVLGDDGAAAGVLAGGMEGCSTIECRVTGGTVRAEGKNCWGLGGLAGCIFKGIAATNCHVANVSITASGANTRLVGGLLGFTGTYDNDPPTQITECSADTTITVSDS
TTRVGGLVGGSYDDETKWPVPSVYAIANCETHGSITGGSEALGSIAGYAYRSTVENCRSDMTINGDSNPPQVVQAEGFENLSAWANRGSGSFESLVNYVNDDALNDVWNAAASSEMAQMMAGMFGATVTDGASLKAMFANMASTPANNGTQIYQIKFAYDYKTIYFCDNDGHVIASHPYTFVERNDNLGMLAGETTYVFKADDDAGVLTYMAMLKPHFDEGMDETTMPAHIHFYYAAT
KDTLGTYKPDSVTLNGWMPTMLQMGDEFSTADKTALLKCLFGINNAPEEPVAATGILVVAHGSDENWNQRVRESVTQVEVPYPVELGFLDVETENIAMAVQALEQKGVKRIVAVPIFVCSASSHMEEIKYMLGLPSSLNDEAAQKKGLERIEKTATVELTPALDDHLLVAEIINERLKNLSQNPEKEIVVLVAHGTSDPENLAVWKEKMASLGDKLQQIQGFKQVCCGFVGAGTPKIRTVVEEV
KNSNPDCTVIVMPVMLSAGVYTDSKIPTSLEGITYLPEAGQRALLPHANIAKYIAFRANDAIMGDIEMQESGQLYVVQYSDVALEEGGKVCVCGSLAYRAMQEALEVLSPGTVAERSRFTVLGPKSKGTEAALQAILGDGRFQLEERPHNEAYYSYQITDCERGTILTVKARPEVFSDNFFALKTKIKNNTATSEEKKAFQVLRAQVVEKVRWEEADNLFAIEASTAFAGGSGTQSDPYQIATAA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01640_Demethylmenaquinone_methyltransferase
MNSSDISTYEKSLLLSQPLREPGLKNIIQYLPLPSSGIGLDIGCGTGFTTFMLAEALGPAGSVIGFDIEERFLQSARLLRQNKPQIRERVEFVQGNAGDLPFSGKSFDWAVSIDCVGVLDIDPVVMLKEIGRVLKPGGRVFIIMWSSQMLLPGYPLLEAQLNATAAGIAPFKTGMAPDRHIMRAPEWFRSAGFQDIQTHTCAMDVCSPLSAEIIVAVSDLFIMRWGSCEKEVAPEIWHDYQRLCQPDSTE
FILNVPGYYAFFTYSVFSARNS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01641_Cation_efflux_system_protein_CusA
VSVVIVCYNTDAGSDEIDKANRELREKIGEIKDDLPDGCFEPEVNTKVAEVAGVLLSLSGGGYSYEELSAYAEEIEDALSEIDGIYKTKLVGKVEKQVTVEVDSDRLNQLGFSLSEVNQVLYAQNLEIPNGALENEAGKIYVKTEALYQSLDDMKNIIVGVSRQTGAMVRLKDIASVYMESKDDAYKCKQGDKNAVLVAAYFKDDRNIIPVGKKVRETLENLRESLPSDLDLSETAFQPDDVDKSTDNF
AGHLIAGIILARSPASILFSIHK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01642_hypothetical_protein
LEANSFASYFLVPDDALRYYLNLRLQNSSRKPNMRDLIYLENYFAVSHALMLLRLINMGVISEAEAEQMKAGVISAAIRLGYSPALYRDTADDQGRVIYSNYAELAEELLEAGQITYGKYEELLLEGGYGEILFGDGEENADSDAGNL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01643_mRNA_interferase_YafQ
MYIVKRTRKFDKDLKKLLVKRGYNIDLLTEVVKKLANGDKLAEKYQDHALSGNWIKYRECHIIPDWLLIYRIDKDTIVLILTRTGTHSDLF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01644_bifunctional_antitoxin/transcriptional_repressor_RelB
MAQTSITMRIDENLKKQAEELFEEFGMNMTTALTVFIKAAVRQGKIPFEISVDIPNAETIEAMKEADRIIHDDSVKGFYDVDEMMKEIIG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01645_transposase
VVIDEIGFVPITRPEANLFFQLISSLYEQTALIITSNKGFEDWAELMGDPVIATAILDRIAHHSEIFNLTGDSYRLKHRDSILSP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01646_YcfA-like_protein
VAGVDKIIEKMKRQPNGIRPEEAEKVLKANGYEYKRQKGSHRHYLHQNGDLITVKIETPLKAVYVKDILTRIGE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01647_putative_protein_encoded_in_hypervariable_junctions_of_pilus_gene_clusters
MRTEEYVKLPYTRIIQEINDESGHYFYGRIMELDGCQSTGDTLEELYKNLNEALEGYIETKLENNLDISLPVNQEDYSGKFVVRLPKSLHMRLVLEAEKEGVSLNQYALYKLAR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01648_Demethylrebeccamycin-D-glucose_O-methyltransferase
LKPPPVWRLRGALPHLLCSMAALCNLLSCISAPSWRTIIKRIALLLQPEDRVLEIAAGTGIIALGLADRMQNIDAIDFSPSMVAKAQKKAQHLGLANVHFSAQNACDLRFAPGSFDAVIICNTLHIMPEPEKALAESHRVLKPDGRLIAPTFVHAGSKKALLFFALMSLSGLRAYHKWTQQSFHAFLEENAFTVLDSVLLKASFPLAYVVARPKQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01650_RNA_polymerase_sigma-28_factor_precursor
LSFLLWALAITGILKGSLCLFAYLNNQVFPQPLSEEDERKCLQEMQRGGEEARNILIEHNLRLVAHVVKKYESSGEDLEDLISIGTIGLIKAIRTYNFERGIKLATYAARCIDNEVSMSAPGGKNWYTVKMIKACY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01651_type_I_restriction_enzyme_EcoKI_subunit_R
MWLFWSLDESGIRRIYTWAQNTEFKCKLVVVVYPACPTGYLDLEELLQLRQNTEGKLDFRLYVTNSTRGEKEPYIAISVDMLDTGIDVPELVNIVFSQEPPSLPLPKIFMSD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01652_hypothetical_protein
VDRVKSNFLAVILFIPVMRATLGNLYLTVFNTVNKAVTIINSSTPKPLEFISQRLWLADAIIAVAVNVL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01653_addiction_module_antitoxin,_RelB/DinJ_family
MTQINVNIRMDENLKKQFEAFCSEIGMNMTTAFCVFAKTAVRQNRIPFEISAESDPFYSEANQARLRKAIADLNAGKGKAHEIIEVTDE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01654_DNA_topoisomerase_3
MKSLVLAEKPSVAREIARVLQCSKKSKGYIEGPRYVVTWALGHLVTLAEPDDYDKRLKQWRMEDLPMLPEKMKLKVIKQTSHQFQVVKELMKRNDIEELVIATDAGREGELVARWIMEIVRWKKPFKRLWISSQTDNAIREGFARLQPGTQYNSLYAAAACRAEADWLIGLNVTRSLSCKFNAQLNAGRVQTPTLAMIVKREKEIKDFVPRDYWTIRADFGDYYGDWRGKDGGRLFDYARAEEI
LSRIKGRMAAIKEVKTEARSEAPPLAYDLTELQREANRRLGWSAQKTLSVLQELYEVHKLVTYPRTDSRYITEDIVPTLPLRLKSMGVGPYADLARPLLQKTLKPGKRLVDNSKVSDHHAIIPTEQPLQLNSLNEEERRLYDLIARRFLAVLYPPYRYEQTTIITVVEGENFHSRGKVEIDRGWRAVQAVPGDKDEKDEEQLPEQTLARHKKGETLEVKSGKASKHKTKAPARYTEATLLTAMENCGK
LVEDKKLRESIKGSGLGTPATRAEIIEKLIRTSYIERQRKELVPTSKGIQLMDLAPPDLRSPELTAQWEQRLAEIARGQGKRPDFMADIRRDTVQLVQSIKSDSSTYRADNVSKSKCPQCGRFMLLVNGRKGKILACPERSCGYRQPEAEDFSGRGGNSRVNRRLMAKYSDQEELETNLGELLKAALAKKEQG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01655_hypothetical_protein
VNTAKKDLLELVNRISEIEAKEVLDFALFLEMKRRKTEFKDLEMASQTSCDFWDNAIDDEVWNNA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01656_PemK-like_protein
MPKQGEIVLIPIPFSNLQSIKKRPVLIISNDYYNELTGDIIVLAITSNLNEKKYSIEITDDNLDEGQLKIKSCIRCDKIYTLSQEIIVSKFGIVSHDIMEKVRSKISELIK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01657_Chaperone_protein_ClpB_1
MERLTQKSRQALLAAQNLALEKRQQEVQGKHLMMALLEQEGGLVPRLLQQAGISIPAFTQQLGQRLDKIPSVYGYEGNVYLSGSLGRVLNRAEKEAQDLKDDYISVEHLLLALLEEGEPDLKDLLQKAGLNREGIFQVLHGIRGSQRVSSDNPEDSYEALERYSRDLTRLAREGKLDPVIGRDEEIRRTIEILSRRTKNNPVLIGEPGVGKTAIAEGLARRIVARDVPEGLKDKRLLALDMGSLVAGA
KYRGEFEERLKAVLKEVEDSAGQVILFIDELHTVVGAGAAEGAMDASNLLKPMLARGELRAIGATTISEYRKHIEKDAALERRFQPIMVNPPSVEDTISILRGLKERYEVHHGVRIQDSALVAAAVLSDRYISDRFLPDKAIDLMDEAAARLRTEIDSMPAELDEITRRIMQLEIEAAALGKEKDEASRERLEDLLKELQDLKSEAEVMQAQWQAEKEAISRVGQLKRDIEDCRYEMEKAEREYDLNRIAEL
KYGRLNELERKLQAEEELLAGKEKHSALIKEEVDEEDIARVVSRWTGIQVSRLMEGEKEKLMNLEEILHQRVVGQEEAVNAVADAVIRSRSGLKDPNRPAGSFIFMGPTGVGKTELSKALAEALFDDEKNIIRLDMSEYMEKHSVARLIGAPPGYVGYEEGGQLTEAIRRKPYSVILFDEIEKAHSDVFNILLQILDDGRLTDGKGRVVDFRNSIVIMTSNIGSQEILNFQQAGGDYEDMKNRVLGLLRL
NFRPEFLNRLDEIIVFHALGVEQIKEIAEILLQKLALRFRQNTRAGLEWDEKALDYLAEKGYDPAYGARPLKRLIQHEIETALSRAMVKGEIRNEGEVIISAEGGKIALKIG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01658_hypothetical_protein
MRLVKVYYHSKEEKIPLSWLNLHPDLLKIMEEMGIIELAGDSIKADGLQKIYKMMRLKNLLGVNFNGAAIIVDLLERIEELEDEIEELKRKR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01659_Heat_shock_protein_J
MAVNYLDYYKILGVERDADAKKIKAAYRKLARKWHPDLHSGKKREEAEEKIKEINEAYEVLSDPEKKALYDRLGPNWKNGERVDSSGFGDGVFYRSSNIDPEDLQGFSEFFSSLFGAEPGRQSRRASYRSAPVRGQDIESTIELSLEEAYHGLSKSITLSTAAACPECQGSGLAGRGFCRRCGGTGSVSEARTLQVKIPPGVHEGSSIRLKGQGGEGLGGAERGDLYLQVRILPHPVFTLRGRDLETEITL
RPEQAVLGDRVTVPTLDRKLTLKVPAGSRSGQKLRLKGKGMPARQGENGDLYARIKIDLPHDLSEEEKELYRQLAELRAPRQAERGVAE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01660_Heat_shock_protein_70-2
MAKAVGIDLGTTNSVVAIIEAGDPVVIVNAEGNRITPSVVAFKDNNERLVGQIARRQGALNPENTFYSVKRFMGRRYSEVESERKLLPYTVVSGPNDAVRFKSRDKLLAPEEISAMVLKKLVEDASKYLGEKVKDAVITVPAYFNDAQRQATKDAGRIAGLNVLRIINEPTAAALAYGLDKKANQTILVFDLGGGTFDVSILEVGDGVFEVKSTNGDTHLGGDNFDKAIVDWLAEEFKKDYGIDLRQ
DKQALQRLVETAEKAKIELSSVLETSISLPFITADASGAKHLDMKLSRAKFEDLIHEDLERLRGPVKAALDDARLSARDIDEVILVGGSTRVPAVQKLVRELNGKEPNLGVNPDEVVAVGAAIQAGVLAGEVRDVLLLDVTPLSLGVETMGGIMTRIIERNTTIPARRSEIFSTAEDKQPAVDIHVLQGEREMARDNRSLGQFKLEGISPAPRGVPQIEVSFDIDANGILTVSARDQATGKEQSVTISGSSN
LDKAEVDRMVKDAQTYSEEDKKRRQEVEVMNQGDSLCYTVERKLKAVGEQLPLHEKARIEELLQELKKALEEKAGLDRLKELIDELGQAAYSLDNIEPAAAGPDRSGPAAEGNAEVVDAEFEEN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01661_Sporulation-specific_penicillin-binding_protein
LPLRRLYFLMSFILLLYMILALRIAYFQVIKGQELAAQATAMRSQGIRLSEYSRGEILDRNFQPLTGSYTSTALYGLPAEMRSSRSVSNEIYGRDTLQMTAEILGRILNKQDSRKIQEQFRQAAQSGAAFVRIASDLSEAEIQRVLSRNLAGIAVAPLIKRYRQDGFCCHVLGYTGGYHNNEGQAGIEKRYDALLKKGNSPQELLSVYDARGAVIKGLNFKFYEEEDRARGSVVLTIDKRIQEIVEKEISAKVKS
GAVVVMDVDSREVLAMASRPSFNPYHIEYLLQHDQNSSLINRALSRYHPGSLFKILVATAALEENLVSERDKFHCSGKYFFNETQSTSCWKEEGHGELSFAQAFACSCNPSFIEVGQKLGREKLLTYVDKLHLCDETLLGYAYHPGSYVRINPGKIALSNACLGQEGVMLSPLQITSLLATVADDGLWQAPSLLRYTINSKGERSRIAASRKERVISPETAGKVQELMELVVSEGTGKNAALAEIKVAGK
TASSETGNWKEDGEQSLDTWFGGYFPADNPRWVVLVLVQEGESGAVDAAPVFKNIAREMLKIF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01662_Antitoxin_HicB
LDKYLFMAVFTPAPEGGYEVRFPDLPGCFSQGDSLEEAMTMAKDALELHLWGMENDNDPIPPATLPENIELKKGCFTVPVSVYMPPVREEMDNKTIKKTLTIPAWLNRVSEEADINFSQTLQKALKQQLGIQD*
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MKPKELLKLLYTDGWVKKAQRGSHIQLIHPTKTNKITVPYHNKDIKPGILHDIIKQAGLK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01664_putative_protease_YhbU_precursor
MKEPELVLPAGTLEKLKTAVLFGADAVYFAGKEFGLRAYAGNLSRAEIEEGLAFAHSRKKKAYLAVNILAHNRDMHKLPAYLEEMASLQPDGFIISDLGVLRLAQKYAPSIPLTISTQANVSNYEAVCFFQDLGARRIVLARELNLGEIEEIKKKSSVEIEIFVHGAMCVSYSGRCLLSCYMTGRSANQGACAHPCRYRYALVEEKRPGEYFGIEEDERGSYILNSRDLCLLEYIPRLLEAGVDAFKVEGRMK
SPLYLASVASVYRQAIDRYRERATPFTREELSAWMAELHKTATRPFTSAFIGGEEDRAQDIDKEEMPLRAEFCAIVTGYREQQGLIELQQRANFGCGDYLEFLLPGGELLGFVLEKLYDEDLAPLDRARHPQQKVLIPFDHALPEFSILRKGGKINQG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01665_putative_aminodeoxychorismate_lyase
MSEIKLRLEKPKVVAIILAVLFIILAGVFFTGQMIARQYQPVDPADKSMVDIVIPEKTGARQVADLLYNERLIHKQSVFLAYCQKNGYDSSLKAGHYRFSRSQSLKEIVDDIVQGRIVNISFTIPEGYTLEQIGQLLIKKQLCSQEEWNMSIKQDYDFAFLKALPLENENRLEGFLYPETYFVPEDYNCRQAIELMLNNFEQVWQKKFAEQAQAKNWSVYHTITLASLIEKEAQVPEERAMIAGVILNRLNA
GMLLQIDASVLYALQRHKELVTYADLEVNSPYNTYKYAGLPPGPIACPGEASINAALNPKEHSYYYYVSKGDGSHFFSRTYSEHLRAQKKYGQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01666_Vancomycin_B-type_resistance_protein_VanW
LANERVKTSIFFSLILLLGIALAGAMYFFQVFYKSPYFMPGVKIASTTVGGYTSKQAASRLERDLEEYKKTPVIFHYQGYSFESKLEDLSYPVNYEETVNKVWQQEQERDWPSKLTNLDGSREVIYPLKLEYKPEIKARMIDEWNKVLGAAAEDARLEIEKQKGLVLIPARKGLKVDPEQTFADLPQEWGQMEEIKIPIAMQEEWPQVKDEDLSNMGELSSFSTWFNVNEINRSHNLYLASSAINTSMLP
PGEIFSFNRRVGERVIEAGYRDAMVIVNGKFEPGLGGGVCQVSSTLYNTVLLAGLEIVERHNHALAVAYVPVGRDATVVYGLQDFRFKNNSPYPIYIRAWAQAGKLTMTIYGNLTEKRDIHLSTIVDRVIPFKEIRENDPSLNPGQEKLDHAGIQGYVVRSFRNYMDEEGRLLKSEQLASDYYKPLDRLIYVGPGVKVESPPENVDNPENPPNGIEPDPLGDSTGEAAPLVEPGPSEIPSPQPENGDEG
TPPITI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01667_hypothetical_protein
MTEEFLEEDFPILVLVDEDGIEHLFELLAELEIENDKYRVLVPLDEEDEEYDEEDGEVVILKVIIDEEGNELLSDIDDETEWEMVVEAWQELVDSEDL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01668_Putative_Holliday_junction_resolvase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01669_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01670_Alanine--tRNA_ligase
VWSSAEIRKTFLEFFKERGHSVVESSSLVPVNDPTLLFTNAGMNQFKDVFLGLDKRKYVRATSSQKCVRAGGKHNDLDTVGRTPRHHTFFEMLGNFSFGDYFKREAIGYAWEFLTEVVGLPEEKLWVTIYRDDDEAADLWPEISGIDPARIVRLGEKDNFWSMGDTGPCGPCSEILYDRGIEYSCGAPDCGIGVCDCDRWLEIWNLVFMQYNRDESGEMTPLPRPSIDTGMGLERLSSILQGVDS
NFDTDLFIPIIKRIEELTGKAYEQGERGFPFRVIADHSRACSFLIADGVLPSNDGRGYVLRRILRRALRFGRLLGIEGSFLYKNVDVVCDIMKEAYPELLEKQDFIKEVIRLEEERFLLTLNDGLKKAEEIMERARQRGDNVIPGEEAFMLYDTYGFPLDLTEDMAEENQFTLDKAGFDRSMEEQRQRARQANKGEDLLGQERLLSEKLAGIAPSSFTGYENSRDESVLLAIIKGSELMDKALNAEEVILITSR
TPFYAESGGQVADRGIIKGQEGLLRVQDVKKLSAWILHYGIVEGVLTTGEGVSMQLDDRARMDTARNHTATHLLHRALREVLGEHAQQKGSLVEPARLRFDFSHLKALSNEELSRIEQMVNEAIWKLYPVTTTETALNQAREMGAMALFGEKYGEEVRVVQVDTYSSELCGGTHVQNTGQIGLFKITGEGSIGSGLRRIEAITGSYALEYLQQLEGEIKKAASALRSSPLELTKRIENLHNSLKEKE
KEIESLQQRLSRSSSDELVNKAFQLNDAWILIEEADIEDPGSLRQNAEMLKDKLGRAIVMLASIKGEKVSFVCFVSKDLLEQGLHAGKIVAAAAQVAGGGGGGRPDMAQAGGRDKSKISEALAEVRKMVKKTLS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01671_Transport_of_quorum-sensing_signal_protein
MLPANSKIYRYFFFIVVVLATIYFLFLVREVLLTFFLGAVLAYLLFRPISFLERKGLKRVWAILLLYLLLLAVFSLFFSLAVPAMVVELNQMAGILPDYADQARDMAKSIDGMELGKLTPVLKENLNQIENKLFKGLKDFLGGFYSFLGKFLALAFSPILAFYIINDWEKIRDAFLGLFSPSFRREIKAVLEKIDEALIEFLKGHLIIATFVGIFTGIAAALLGVKFPLLIGLVAGVADLVPYFGAFLGGFFALLIALSES
LQLALYMGLAVLLIQQVESNIITPRIMGGKLGMHPLLIVFALLAGGKLMGIWGMLLAVPLAAALKVVIQWAFLKMVES*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01672_hypothetical_protein
MIIKCPVCGGLQVGRVGSDQYYCWNCFLEFNFRKGMLNLYEVAEDGTLVAMENSSQLL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01673_PRC-barrel_domain_protein
LKTRNIQHLPVFLATRAEVVAMVQKAVIGDDFGLLYLVVKGEDGKAGLIFRDDFDLTPDAVKIWDLHCIKSYAYGEELSIYEKKLGDTVFDRQGKELGIVSDFILSPAEKQVQGLEISSGTINDILKGRMELSLQEVSWKSVKGGVLAGEGSQEE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01674_hypothetical_protein
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LKKITSLLLVVLLMTTLITGCTKQTTTTNKEVKKLADYKIGVVTPTLSTSEDEFRAAEQMAKKYPDMVKHITLPENFSTEIETGLSQITSLADEPKMKAIIVISGQAGLLPALQKVEEKRPDIITMTAPIWDDPALMSKYVDVNLDTDWVRRGVTIAQKAHEIGDKTMIHYSFPTHLAKEVISQRKDAMEKTCKELGMQWVEVATPDPQTGNGTGPMLQFLREDIPRQIAKYGPDTNIFGSNCPMY
DVIIDEAFKLKYTVVEQCCPTPLQAYPTVLGLQISEADAWNFSKVNSMISEKAAAAGMTGRLGGWRVPATVFMPQFAVELAKKMIEDPSFNYKDVNNLNQFAKEVMGSEVSFSKFKAKADSPELDNYFVMIMKTILY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01714_Anaerobic_sulfite_reductase_subunit_B
VHNCNCENPLVPQIVEIVKIIDETPDVKTFHVRNENGVPFDVKPGQLAMVSLLPVGEGMFSVSWQEEKEHLQFAIRRVGLMTDELHSVGVGHKIGVRGPYGNGFPVEACQGKDMLFIAGGIGLAPLRSFIKYCLKHRADYGKIQVLYGARSYADLCFKDELFELWPKEKDTEVFTTLDRPEEGWDGHVGLIPSYLEELKPAPEGKVAVICGPPIMIKFALKSLEKMGYNDEQVITTLEMRMKCGIG
KCGRCNIGSEYICLDGPVFNLAQLRKLPPEW*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01715_Anaerobic_sulfite_reductase_iron-sulfur_subunit
VKVLNKNKLPAVFDKLAQQSELFVPLQKKEQSGFYSWKSFDQASDQLALDLLNVYLPPKQVLLPQTEKMYSFRQEEGGVAISEVYEESQARVIFGIRACDLQAINCLDQAFLTRGFVDEFYKARRDNTTIVASACYKPGANCFCSSMGVNPLEPAGADAIIRDTGTEYFIWEARTPAGEELSRQLAEFLEEKELPLPQSQAFERQVDMEGVAEKLSQVFSSPLWEELSDACQTCGICTYLCPSCYCFDI
QVKNQGEAGYRFRCWDSCMYGEYTLMAGGHNPRASATERFRNRFLHKLEFFNERYGMPLCTGCGRCIIACPAGIDISKIITAAKEAEWSA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01716_putative_NADH:ubiquinone_oxidoreductase,_subunit_RnfC
MDITGKIREIAARLLQNGEVDLFMAWEKGDLPFQSKPFFARRVEDVERIIFDEYSIHNLSNALLKFRDRQEKIGLVVKGCDSRGVVRLLEDGQIERDRLYIVGVCCPGMKDPLQAMRDYSGFNRNPEAAPLAAKCENCIQPNPVIYDELLGEEQPPRVQGERFARVRELEQLSPDERYRFFEDILSRCIRCYACRQACVACNCRTCIFDETKPQWVGRETSISDNMMYHLVRASHMAGRCIECGECER
VCPVNIPLMLINQKLIKDVDNFFGPYEAGMQYVEGAKPPLSVYQENDPDDFI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01717_Coenzyme_F420-reducing_hydrogenase,_delta_subunit
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01718_NADH_dehydrogenase_subunit_I
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EFYQRSLNAGAKYIRGRVSKIYPRGERLVLKSEDTLLGRPLEVEADLVVLATAMVPSEGAGALAKAIGFSSDKDGFYQEAHPKLQPVETFAAGVYLAGCCQGPKDIPDTVAQASAAAVKICGLFSKNELATEPMVTQVDVSKCSGCGFCVPICPYNAISLEPIQERGHHGPFTRNAAQVNSSLCQGCGACLPACRTLALNLKGFTNDQLVAEVDALCL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01719_Dehydrosqualene_desaturase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01720_Lactate_utilization_protein_A
MKLAYYPGCSLDGSAIEYGLSTKRTAELLGVELLEIEDWNCCGATSGHNTNKLLSLALPARNLALAEKTGLDVLAPCAACYNRFRNTEHVVRHDRKMQEKITAVIEMDYAASNQTLSILELIVNKVGLEKLREKVSQPLKAMKAACYYGCLLVRPQEHTGFDDNEDPRSMDLIMQALGAESVEWSFKTECCGAALATSRPDVGYRMIYEVIRNAREAGAECLVTACPLCMMNLDMRRRGVEKAF
NQRLDIPVYYITELLAIACGDSPRDVGVHRHFVEAESYLASLPEKAARIEAEEAARLEAEQAKKAARAAQAKKAAQDKAKKKEASEAEAMAKAGDEKKAAPAAEAAAKAETKEKAAPAVEAAATLAEVGDKGSKAAPTQAQAAAPAAAEAVDDGALQKKITAMIKAWEKSPEKVAARLIEDEERAAILAQVVSGDEKKTARLAELMITDKDKAAKAAEAFVTGELKKRQKAQES*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01721_sn-glycerol-3-phosphate_dehydrogenase_subunit_C
MGNALQLLPATQSDRALLKHLEEEAGTEVNLCYQCGKCSAGCPVGFAMDQTPRQVIRLLQLGLLEEALSTESIWICASCETCSARCPRGVDIASLMDALRREALKQGRITDRKVAVFNRAFLSGVKNFGRTYEAGLLLQHNLFTGQLFKDAELGLPMMQKGKLSFFPEKIKGREAIKKIFERAENPGGE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01722_addiction_module_antitoxin,_RelB/DinJ_family
MAKTTNISIRMDKDLKERADAVFNEMGMNMTTAFNIFVRQTLRQGKIPFEIYADPFYSERNMNALHQSIQEAEEGKFVTKTLDELLAMEK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01723_Toxin_YoeB
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01724_putative_distant_relative_of_cell_wall-associated_hydrolases
VSKKIRFQSWISLLIFPSLTIILVLSIVAQNQAVFSNSDAVMYTYLKNACQGHAGYAYMSNCGNNISFAELEPGDILLGGYPDCAYGRFSHAGIYLGKGRVAEGYVDLGITIQTLDHYNNYSDICLLKVKAPQDVKLKAVDYVLEQEGKIFYPLAFKPGDRWWNCSKIMWKAYYEQGINLTPEADFWIAPDAFYQSPLLDVIAEEGWFK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01725_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01726_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01727_hypothetical_protein
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QQKNRLVKILDDENIYRQFYKVLRRVIPVYSLLFGLPDCLNRAKSIYQHAFPRILPDSASLQYLAVYESVLAGLNAVLQHPQWEIIIKISPIQKQRPSEPPLLLPSEVGSGLSPRRWIELQELIEQKMASLPHEAFITLEYLRFLQLHFTPDREQQLAQRLMAGYLALWKWLPSPLFINPSLLEQLGPLLPASERTEAQKILTFLDDHDKQSLNNELDSRPELFHNKAKSTLREILIGQFAGVW*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01728_hypothetical_protein
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PAYWHTQELEFFDLYLTSLKNGGVLRVVKALQLFLSDTLLFMTKALASEGENKNIGTGALAMMDYCHIKTLNPNLKELEEIISKNWQNLDHLIKEFPARGEMDMDYFLERFQEIISDSYPAVSTAKSSLGSRQNTALASALYRATLELSSSKAHIELLKEKQHYGKAIQQSYLQLAALLSQHKEWIANFRSDLERLLAPRNLSRSWKDLSLRVEKINLQKGREFPEEFLYLLDKYQIASRVSPERPNLILEEE
GDIFIFKVDDLQEELIPFFVVSAGPVDSGSE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01729_Heat_shock_protein_70
MQLGLDFGTSYTKLGLQHNGEFINLLGNEDEGQIPTVAAYLPSQRRLCFGPLALRIDEAGAETAFFFKLALKRQASLTLGSYSLPDLLLAFFRFLQQEYLESRGIKAESLNISVPNYFGLNSRRILLEAARQAFGVKKVFLLPEPLAAALGYNLLHPLFPLQGDILSIDIGGGTSDFSFLTLAHDKREMLVETQFQIGHDAFSGSEIDQAILQRLLFPAFTMQTGLRLPREFYSGKFTSSRNKFQYNRLRQLA
EKIKIELSREEYYHLDFPDFHAGYSLNLELTAEMLAARLEPVFERLKSYIEEQVKLRAKALQLFSADKWHIDAVLLLGGASQTRGLKDLIAGIFPDLKVICPEDPSFYVLRGLCHWENDGNSGATSIKSIYPFNFYIERISPDGSSHLLEKIPFDTANLELDLQKRYPIFSLPLDSVYNLAPDPDSILFRIYEVEEEDNQVNLERFSGQEMVWQWEGPRQELHNYLELYLDLKKSRIESGEALSATRTRPLDSNIL
SGLLARQKEIQKLMADSHSNPRLAEDFGEHLSRLEKVNKPYSNHSETTLYKLLYLLDFFTRPGN*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01731_HTH-type_transcriptional_repressor_YcgE
VQEIYYKISEISEILGVEQYTLRYLENSLGLKIKRNERGDRLYSESDLETLKLVLQLKNKGLNTTAIKMALENIEESEEKAISPLENKGQGMMEVVSMAKKIVEQNQTLLEQNRKLEQRMEKLEQKIDKRNLERERKIDEFLELWKAEQARGKSWLSRILSK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01732_Acyl-CoA_dehydrogenase,_short-chain_specific
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SDNDFQTTGVEHKMGQAGSVTAALAAGENDGCRGWLLGNDPREHEGKGQGMAQMFQMMNLARMETGHMALSCIINAFCNARDNAKERVQGRLLTNPKAGRVAIINHEDIKRTLLMGKAHIEAIRAMMYRVYLAFDQRERDPDPEVRKAASDLIEMTTPLCKAYPSDEGWWLISEAIQSYGGYGYCEEYPVAQIARDMKIYSIWEGTNYIQSMDLVGRKMQMKGGSLFGAWVKEMVDFC
EANKGNEALAKEFAILDKALKAYQEMLKVYAGYAKTNFSLVPLYSRRVLTTTSQLYCGRQILDQAVLADKKAKELGADHYDYNFYSGKVASAKYYLHNVVPNVWSVCEIIADGDSSALEVPLEAFEYM*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01733_Inner_membrane_protein_YaaH
MSNSNEMHVSGHIQELVANPSPLGLLGLAMVTLVASSQKLGITTGTAFIIPWAIFLGATAQFVAGLMDYKHNNTFGATAFCGYGFFWFGVAMTWMMANGTIGMSADITPDIHQLGFAFLGYFIFTVYMTVGAAGANKVLFIIFFLIDLLFLGLFMNTLGLGGEAWHELAAYSEMGIAIMSFYGSAATVLNSHYGFTVLPVGAPFGSLARKAAQLKK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01734_hypothetical_protein
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GWWKFGGLALPEQNNYCGLSVTGKAATATEDLRGANPQKVRFIEGKHGAFFDSPANGVEAHIQHLYAYATAAPLPAGKELLDPRFILVNRGCAPRWIDLGGKWATPGFDRNKYSGFAEAFAAEDTYGHSILANYYWKALPPATI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01735_Autoinducer_2_sensor_kinase/phosphatase_LuxQ
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EAPHELDREQLGNRDDSLLDFIPIRVLLVEDNPLNQKIVGQMLYNYGFEVIMAPNGLEALKILQDKPVNIVLMDMQMPVMDGYEATQFIRQHSKWRDIPIIAITAHSLPGDREKCLACGCTSYIAKPFKAHELVQLMKEYIKRDLKESVSSQRLIAELLPEFLILLDEMIDDLEAAINSRNIDKIQAISHDIKGTAGMYGFMDFSKLAAAIEQASRIKDLTKVKQIFSELYQEVEKVKIQVS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01736_5,10-methylenetetrahydrofolate_reductase
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AGVHLYSMNKPRQISEIVYNIGLAYPGKD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01737_hypothetical_protein
MVPLELRDKPQVLSMRSALRAQLMLPTVVIKGAKRYIYTSQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01738_Isocitrate_dehydrogenase_[NADP]
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EYDRIKEEKGTAAADQAQKEAEEDGKLIIKDAIADIFLQQILTRPNEFDVVATLNLNGDYISDALAAQVGGIGIAPGANINYVTGHAIFEATHGTAPKYAGLDKVNPSSVILSGELMLRHLGWNEAADLIIAAMGKTIASKVVTYDFARLMEDAQEVKCSGFADALIANM*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01739_2,3-dimethylmalate_dehydratase_small_subunit
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01740_2,3-dimethylmalate_dehydratase_large_subunit
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KADADAVYARIKEYDVSRLEPQVARPHTVDNVAPIGEVAGTPIQQGVIGTCTNGRIEDLRIAASILKGRKVKSRLIVAPSSRQVMLQAIREGLIEIFLESGAAVVTPGCGPCVGTHNGVPSDGENVISTANRNFKGRMGNNRAFIYLGSPATVAASVIKGEIGDPREFLR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01741_2-isopropylmalate_synthase
MTRSSMNKDWFLEEGARVNIVDTTLRDGEQTAGVVFTNDEKVQIARYLDQIGVDQIEAGIPVMGGFEKDCIKEIVALGLKSSIMAWNRAVIADIKESLDCGVDAVAISISTSDIHIEHKLQTTRQDVLNRMSDAVKFAKDKGLYISVNAEDASRSDIDFLTEFALLAKRSGADRLRFCDTVGTLTPLSAFRYIKTLIDAVGINIEMHTHNDFGMATANALAGVYAGANYVGVTINGLGERAGNACLQ
ETIMGLKYLMNVNLPYNTTLFREVAEYVAQASGRALSVSKPIVGSGIFAHESGIHGDGVLKNPLTYEVFSPEEVGLERQIVIGKHSGTAAVRSKFTREYSIELDDTEASQILARVREMSIELKRSLFDKELMYIYEELHGKTR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01742_Aspartyl/glutamyl-tRNA(Asn/Gln)_amidotransferase_subunit_B
MSKEFETVIGLEVHAELKTESKIFCSCSTAFGAEPNSQVCPFCAGFPGALPVLNEKVLELAIRTGIALNCEIPEYCKFDRKNYFYPDLPAAYQISQFDQPVCKNGYLEIDLDGEIKRIRINRAHMEEDAGKLVHQGDITTTPFSLVDLNRCGIGLLEIVSEPDMRSAREARAYLEKLRSILLFAGVSDCKMQEGSLRCDANISVRPAGQEELGTRTEIKNLNSFRSLERAIEYEARRHVEAIEDGEELLQETRT
WDEEKQLTRSMRSKEEADDYRYFPDPDLPPLRISRERIEEIRRQMPELPDAAQERLVETYGLPHYDAAILTTTPDYLEFFDRVIKIYPDAKVVSNWMMSELNKYLNQSNLEISDCLLKPEKLAEMLQLIDDGTISGKMAKTVFAEMFNSGKSAPEVVKEKGMVQISDEKALSAIIESIVNGNPKVVEDYRNGKEKAFGFFVGQVMKATRGQANPAVVNKLLKEKLK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01743_Glutamyl-tRNA(Gln)_amidotransferase_subunit_A
VDLYKLTVHELQDKLLAGEISSEDIVKSLFSRIAVVEEKAQAFITLCEETAWESARRIDQQGEYGGIKGIPYGLKDLFCTRGIKTTCASRMLENFVPSYESTASKLLNEKGGILLGKLNLDEFAMGSSTEQSAFFPSRNPWDWERVPGGSSGGCAAAVAAGEIPFALASDTGGSIRQPASYCGIVGLKPTYGRVSRWGVAAFASSLDQVGILSRNVRDCALILKIIAGKDLLDASSADIEVPDYSAFLDGEVK
GMRIAYPREYFRQGVTESIRTAVMKALRKFEELGAIVEEVSLPHSEYALPAYFIVAPAEASTNLARFDGVRYGWRDGEAANVADMFSLSRAQGFGPEVKRRIMLGTYALSSGYYDAYYLKAMKVRRLIAADFAEVFRDFDLIVSPTTPTTAFQLGEQIDDTLTLYMNDALTVPVNMAGLPGISIPCALDDGLPVGMQLIGRAFDEATLLKAAYAFEQNTDYHRLTPVPGGGINE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01744_Aspartyl/glutamyl-tRNA(Asn/Gln)_amidotransferase_subunit_C
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01745_putative_membrane_protein_YdfK
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01746_DNA_ligase
MEVSSRIKELREEIQKHDYHYYILDAPLISDASYDRLMQELKKLEEECPQYITADSPTQRVAGKASEKFSPVRHRFPLLSLDNAFSYQDLLEFDRRVGRVTRTLSYMAELKIDGVSIALVYENGVLLNAATRGDGLVGEDVTANIRTIKTIPLRLRYSLPRLEVRGEIFMPKQEFIRLNEEKEEKGERVFANPRNAAAGSLRQLDPRITAGRALSAFVYDIIYMEGQNLAEQQEAWHFMQELGLPVNPEVRF
CADINAVLAFTEEYAEKRHELPYEIDGVVVKLNTLAEREELGATARSPRWAMAYKFPAEEKETRLLGVEINVGRTGIIAPTALLEPVFLAGTTVSRASMHNFDLVKEKDLRIGDMVLLHKAGDIIPEIIASLPEKRSGEERVIMPPENCPACDSKVARFAGEVAYRCENINCPARLKESLIFFASRGAMDIDGLGSAVIEQLVDKEMVKRIDDLYRLREEEITALERMGPKSAANLIKAIDESKSRPPSRLLTAL
GIRHIGARSAKILSRHIHDIDDFYKLGVENLTSIPEIGPKMAESIVNFFAEPRNRETIENLKALGVNTREAIEAGEQLLQGKTFVLTGTLPSLTRQQASEMIESRGGKVSNSVSKKTSYVVAGDDPGSKLDKAQQLGLTILDEAGFLNLLGLS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01747_ATP-dependent_DNA_helicase_PcrA
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01763_Phosphate_import_ATP-binding_protein_PstB_3
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01788_Intracellular_serine_protease
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01789_hypothetical_protein
VKGRLRAEDGRWNGRQMSGERGCSSVAGHQLSENERMKAEGRGRWQKGGIFIQANEY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01790_4'-phosphopantetheinyl_transferase_sfp
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01791_Tyrocidine_synthase_III
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VLSTGYSGRNFGEDLNEAMGMFVNLLPQKYPYNPEMTFIQALENAKGILKGGLTHGRYPFNLYSEELKQNNIDAGMLLNYSIVSNSWKSDYIDVLELSHAEFPLLFRINPGRDDRDGLQRIRIEYRYDSFSDEKIDSLVDNLLTMLRDMVNNPEIACDEISIWGATEKRLIAAGAATPENSFAYQEAQKYFEKIFAGNEIDSNLIPDLPGEKAPPLLASYTLSGELPHDQTTCLAAFAYTLAKYSNQEEVI
FCSVIEGKTLPVYTNIDEEQAAPEYLQQIKKYLARTQKYSFYPYTEIKKNFALSSDVLLLFGESELNEPFKFSVKLSENGITGVYNANLYKEESIERFLTSLQAVILALSEGQRLSEIEIISGKDLDLIKSFNDNNVPLDRELTIVDMLRAQAARTPERTAVVYGDNSYTYRELDEITDRIARFLTAKGMGRGQAVGVLIHRSELMAICSIGVLKSAAAYLPLDPNYPSERLEFMLNDAAAKILIVDDDLYDRVPN
YQGEIILSSSIWDLEDSKLALTAPRAQDLFILLYTSGSTGTPKGCMIEHRNLVNFCLWHQDYYAVTEEDKSAAYASYGFDACMMDLYPFLTRGACVHIIPEEMRLDLPALNDYFEKNGISIAFMTTQLGRQFALSMDNKSLRHLSTGGEKLVPCAPPAYNFYNLYGPTECTIISTAFLMDKEYANVPIGKPLSNTDLYILDKQGRPMPVGVPGELCISGYQVSRGYLGRDDLTAEQYVANPYKRAEGY
ERYYKTGDVCRWLPDGNIEFVGRRDFQVKIRGFRVELSEIEGKIREYPGILDATVVAYDEAGGGKYVAAYIVADHQVKIAELNDFIAQDLPAYMVPAVTMQLASIPLNQNGKVNKRALPEPKVTFAEAIPPQNTLQQRIFNCIKSITGNDEFGINTDIYLAGLTSIGAVKLNVVLAKEFGINIKSRDIKQHKTVEKLEQFILGNSQGEKSYEKLAEYPLTQTQIGIYLECLRDEKSTIYNIPMLFKLGEAVNA
ERLAAIEKTIDAHPYMKCYLKTDANGDIKQLRNDDFEYKVPIIKTCAFEEMKNTLVQAFDFASAPLFRIVIYQGESGQYLFMDIHHIICDGSSTAILLNDINRAYKDEILAVEEYSSFDLSLDEIEARSGKEYSEARAYYDSLFKDVEINSLPARDVFNDSEQCQSWERVEKLPRGQIDAFCQENNITPNALFTGAFAYLLGQFTNQDEALFTTIYNGRNEARKAHIVGMLVKTLPVYANLDQRQNVAVY
LQGMKEHLMELMSNDIYSFAEISRAYGIKADILFAYQGEEFTDFQIAGEACELMYLEAKDAKAPLSVDVFVEGEQYRFLSEYRSDWYSEEMIASFTDAYIETIKSFLEAETLADVNMCSEQALAFLEGFNQTAWPVRDIPAAHLFEEQAALHPDKVAVIAGDEQLTFSELNERANRVANSLIEKGIQSEQMVGIMLPRTVNVYVAIQGVVKSAAAFLPIDPDYPDDRIQYILEDSAAPYIITSEAIKSKGCSIC
SQGNYEVLSIEQLLDNENNKNPLVDIKPEHICYCIYTSGSTGKPKGVMIEHSNLTHYCNANPLNPEIMSYVNNASVSLALAAITFDVSILEQFVPLLNGITVCLANEEEIHNPLALSDLILKNKVDMMTCTPSFISNIVDMPEMRRALRQIKAFNVGAESFPAALYEQIKALGSNAAVFNGYGPTEATIGCTFCEVLGEKITIGKPMSNVQIYMINENHKILPAGAPGELVIAGAGVGRGYVNKPEMTAEKYI
SINGRRAYRSGDLARWNFNGEIEFHGRIDDQVKLRGLRVELGEIEKVINDYEGILSSIVVVKENQGGQFLCAYFTAQGIVDKAALTRHLADTLTYYMVPSIIQLDKLPLTNNGKVDKKALPEPDFIMVEREYVAPANKTEADLCEIFKSVLGLPQVGAVDNFFEIGGTSLSASRVAMQCMSRGLKIVYADIFKFPTPRDLAAICADTGAAEIEAFADKEDIISAYDYKKLAAALAPNDLRYIDEVEYTPIGNIL
LTGATGFLGTHVLKEFLDNYSGKVYCFIRQGQRKSLEEHLKTMLMYYFENTYEDLFGDRIMVIDGDITDLDNVLALEQYNFDLLINCAANVKHFVADDSLEKVNVEGVKNLIKLGQKTKKRLIQVSTASIAGERGDRGRPPVDKKLLENEVYFGQALENAYIKSKFLAERAVLEAISEGLDAKIMRVGNLMSRYSDGEFQINFLTNSFMQQLRGYKIIGKFPITAMDAPAEFSPVDSTAAAILKLSGTNK
AFSVFHPYNNHLIYMSDVIYAINQYGFKIEVVSEDEFQKSLLEAMGDENRNEAISRLIAYLSNDADSKIYWLDASNKFTTEILYRLAYKWPIISDEYMKQSIKALDGLNFFDQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01792_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01793_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01794_transcriptional_regulator_MalT
LLTAIARASIPRLHILIISRSYPEIPVDELELKGLCKEISQNLFEFTQEETVELFAQNGFQLSAKEQILLCNNTDGWVAAIYLASTIKTKGNCCRW*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01795_ATP-dependent_transcriptional_regulator
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PLTERERVLTLLVKAAPKKKLP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01796_mRNA_interferase_YafQ
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01797_Antitoxin_DinJ
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01799_Magnesium_transporter_MgtE
LPAKEVCLPLRPILPYSRFFNLHFHYCLSIAATGEMEVYMEELREQISNLINQQLWNQLRQLAWDDYLIPDVASLLIGLNKADRVILFRLLPRPVATAVFSYLEKEDRNALLKDLTNEETRYLLTNLPPDDRTTLFEELPGQVTQRLLNLLNPDDLKEARLLLGYPEESVGRLMTPDYVAVRPQWTIQEAINHIRLKARNSETLHTIYVIDESWKLLDSLELSLLILANPQETVEAIMSKSFISLSAFDDRE
MAVKVMQKYDVFSLPVVDSDGILLGLVTFDDVMDVAEEEATEDFHKTAAVTPLKASYQESSIKDLVGKRMGWLIALVFVSLLSSGVIALYEQTLQTVIVLTVFIPLLLGSGGNAGAQASTLMVRALATSDVTADEWIRVFFKELMVGLLLGVFMGIISSIFGSMRGGLQIGLIVGLTMLTIIIAANLIGVMLPFILTKMKLDPAVASNPLITSITDVMGLLIYFAIATMVLGPL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01800_hypothetical_protein
MRLIWKHLSSGLIYLRSFRLIPGLVGTIIPFFWQLVNLYGTLPAVIIIAGVFQMLIVTMAAIIYPFFFFKWSFIEIYSLAAIFMLLAVISWQFINTGVNRRAGFKLVKLQFSSRAALLLLGLLLGNRWLSLSISPRTTFWDLHLKPQLAGQLRYWSREQIVAAISHDYRQALNLMEDAIFFGCSPCGSFKKLINAAGLKESQYIIMETIIPPKHAEIFGLRRPFYFYVISIRNQTGQ*
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MATGKSNSMELHYYSDRLKRKLEQMRLVPVTIVEAPSGYGKTTAIRDFLQNSLPQGTPVCWFTAMDEKTSAGFRRLCREIEKIDSRASERLLKIDFPNAANIGEASEALRSVQCKHETYLVIDNFQFLQDALPPAFFLALLEHGGQGLHVIIATQMLKRDTLAIVASHGVLHITTADMRLSAEDISRYYALANVKITPEDANEIERYTEGWIIAIYLQLSTFLETGTFSDTPGVLALMEHLVWDKLTEAQ
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YSRLTNGHGSGVDALFRAELAYQRGNLNDAEILAYKAAFLAESKQQSVVLLGAAILLAHVALHKADIVGWERAIDSMERAASFDRQDTLVIRSLLDIIRGVLLNEFQDHMSIADWLQNADFAERRLPPAMIQIGLFVHLGFLMHQGEFARVIGTAQAIRPEDGLLSPYRDLFACFLMAISHMALDNRTQAAALVEDAARKVLPDGLVSPFASYSQLLGNLVDEVIARDYPALLEKFKTVRKRFSEGWF
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DLSSYYTGSGWEPIGSDGSPFTSIFNGNGKIISNLTINRSTENYTGLFGFTGTTAKIRNVKLENNNVIGQQNTGALVGYNQGTIFNSYATGNVTSTDDCVGGLIGCNQQNSSITDSYAIGNVVGGQCTGGLVGYNQGTITRSYATGEITGRGKVAGLVGSNSSGTITNSYATGAATGTENYVGGLVGWTYCGTITNAYSTGAVTGTGGVGGLVGWYDSKFSAPYVTNSYWDINTSGITSSAGGNG
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ITSVSNVEVAYGTAEAIALAALAATTTITDSNNNTHTVSLSWSIASYDSNNAGNYTATGTFTLPAGVDQSDPQTELKITATVRVNAAVSTDKTLVSITAPSAITGIANGTANTAEALGLPTKVTLITNDGNVQANVTWYVAACSYDPAVTTRQTFTVNGNVTLPAGVVNPNSVELRTSISVTVNTAASPPPPWYPVSGVTLNKSSLTLEVNGPAQKLAATVQPSYASYPYVYWNSSDTAVARVDNT
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01804_hypothetical_protein
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GTEDIALTVIEDGKSENQISISEIIRKGVYKTNYSYSSGGSLHNHSVTGIPLAALLNAMGVCVADGQSIQIPATSDNYAANAISQADIDKWFVAYDALENGSQVTNNTILRLYGPGQFGNQVLVKNLSTLTITGQSAAVSKTALTDAIKAANTKYMNAAEGIEAGQYAVGSKDAFKTAIDTAQAVADNAEATQAQVNQAVTDLKTAEGVFDAAKVTAVSKTALTDAIKAANTKYTNAVEGSAAGQYA
LGSKAALKTAIDTAQAVADNTEATQAQVNQAVTDLKAAEGIFDAAKVTDGKAAGGDTENAVFYIAVKESADSTAKYYYYTKAELEAYETTEDFLYNDHSVIKTVTAKGALLSNLLYNLNGVTITGDMIIQYAESDGYHADQATSIDNSSYKDKIAWLTAPHYNGSNTIEAARTVIAYGIHEEYLNPDENNINDAPGVFKDADKGSGYLRAYRETGSGKNDANIGGANATVIKYLMGVVSYDGAQ
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GGGSVSTSSGQQVQSSGATVTKNGVVVVIPSGAVSSGIYVHVAIVSSSGLTVDSGSKLISDVYEITKDKEGNFAKDITVTLPFTKSKADQSKDELTICFWNGSKWVELDNVKVDWSTGTVSGTINHFTKFAVLAKKKESAAVPMISQPAANQTVLTDINGHWAAESIRNMLGIGILSGYPDGTFKPDQTITRAEFASMLAKAFKLSASGNKVFDDTAGHWAQDYIAAASDAGIVSGFNNNNFKPDEPI
TREQMAVMVTKAAKAGKPTQAISFKDKNDISVWAQEAVASAVSAQLLSGYPDQTFRPKNNASRAEAASVLTKALNLK*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01808_putative_polysaccharide_deacetylase_PdaA_precursor
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01809_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01812_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01814_Putative_K(+)-stimulated_pyrophosphate-energized_sodium_pump
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EDDPRNPGVIADCTGDNAGDSVGPTADGFETYGVTGVALVTFIVLAVAPALQTALLTWIFVMRVLMVITSIASFFINRAFSQAKYAGKEEFDFEQPLTSLVWITSLLSIAVTFAVSYFLLGPSSDAPANLQSLWFILAAIISVGTLGAALIPEFTKIFTSPKSDHVAEVVKASREGGPSLNILSGLVAGNFSAFWIGMVFLALMFTAYYFSGFGLAEIMIYPSIFAFGLVAFGMLGMGPVTIAVDSYGPVTDNA
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01818_Multidrug_transporter_activation_protein
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ERGMTQVSHEQVLLWNPDLIICWGQCFKEIFSDTKWQNIKAAQDKKVYMVPSGPFNWFDRPPSVNRILGLKWLGNLLYPEVYAYDIAKETREFYQKFYHYDLTDEDITFLLKDSGGK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01859_ubiquinone/menaquinone_biosynthesis_methyltransferase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01860_iron-dicitrate_transporter_substrate-binding_subunit
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TPVSLEQLLSWNPDVILSWNMGQGGYYEKMLSDSKWESISAVKNGKVYAVPSGPFNWFERPPSVNQVLGLKWLGNLLYPDVYKYDMAEETREFYKTFYHYNLTDEDLTSLLKDSGGK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01861_glycine_radical_enzyme_activase,_YjjW_family
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01862_ferrichrome/ferrioxamine_B_periplasmic_transporter
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01863_hypothetical_protein
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QLLDILGEAGAGYHFYSRCADKITLYPRKDN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01864_hypothetical_protein
MLSLEAANELIWKKFRELPLEYVNFCDGITFRKVEANECDR*
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CCTLMTAASVSISGMIGWVGLVIPHLARMIVGPNYRVLLPASILLGGGYLLLVDDLARLLASMEIPLGILTALIGVPFFLYLLLNSKWGWK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01868_Copper-sensitive_operon_repressor
MENESKNSCANCIKTNNKNRSWSDENAVKELTVRLNRIEGQVRGIKRMIEEGVYCDDVLNQITSAQSALYGVARLLLQKHMKSCVKEQLASGDEQVIDEVLATIFRMMR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01869_Copper_chaperone_CopZ
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01870_Copper-exporting_P-type_ATPase_A
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TDIISLDGYVESEILHWAGILEKHSEHPLGEAIYASAREQYGDLPDPEDFKNYPGQGVTGKSTNLALAIGNRSFMHSRAIDTTEAEQQARQLEEAGKTAMYLAIDGKLAGLLAVADTIKENALLAIQELKDMGLEAYMISGDNQHTAQAIARQVGIETVLAEVLPERKAEEIEKIRQSGKIAAMVGDGINDAPALATADIGIAIGSGTDVAMETAGIVLMSGDLSGISAAIKLSRQTMRIIKQNLFWAFFY
NSIGIPFAALGFLSPVIAGAAMAFSSVSVVSNSLRLRRFEP*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01872_Acetoin_dehydrogenase_operon_transcriptional_activator_AcoR
MISRMQKEFTPLESCWEEFVGNGSLDRDALSTEIADAWERCARLGTNPYVGNSKRRLAESEVQEMLQRHKELIDVARPFMAKLHRFVAGSGFVVLLADERGYLMETIGDQDTVREAENIDLLPGACWREEEIGNNGVGTAVVLKKPVQVSGKEHYCRKHHSWTCSGAPILNEDKQVIGILEMSGPLEKTHLHTLGMVVAAVEAISDQLRIQQKNRELVLLSNRLGYIYNTVSDGIMVIDRQGIIT
QINPAVERILGQNSRKIMGIPVKELFEPGQRVEEMLDSGRDFSYSELTLGIGEAVQCLVSGKAIMDEQGKVNGGVIFINPINHIKSLVNRFSGAQASLHFSDIIGQSQELSRVVRIASLAASSESNILLEGESGTGKEVFAQAIHNASSRRDAPFIAVNCGAIPRELLGSELFGYVDGAFTGARRGGRPGKFELASGGSIFLDEIGEMPLGKQVSLLRVLQERTVTRIGGDKVIPVDVRVICASNRKLHEEVEKG
NFRRDLFYRLNVIAITLPPLRQRKEDIPLLFHHFLQDISQKLGVKTPQVEAEVIHSLQDYDWPGNVRELQNVVERMVNIAEESRISQEHLPQEISHPAARSLKELENGEDSQLLSLSTERRKRKEMEQEREREEIMALLVLHGGNVSQVAKSLGVSRNTIYRKIKQYRIKI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01873_NADP-reducing_hydrogenase_subunit_HndC
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YAQSVASLQKAIEEAENHGFLGENILGSGLDFDIEIVRGGGAFVCGEETALIASIEGHVGEPWDKYVFPSEKGLWGQPTIINNVETWANIPVIMERGASWFTSLGTEGSKGTKVFSLVGKVANTGLVEVPMGTTLREIIFDIGGGVPQGRKFKAVQTGGPSGGCIPAELLDLKLDFDSLSQAGSMMGSGGLIVMDDRTCMVEVARYYLSFLAGESCGKCVPCREGIKCLLEILTRICHGQGEIEDLELM
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01875_NADP-reducing_hydrogenase_subunit_HndA
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01876_putative_oxidoreductase_YdhV
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VLVNILNEHGGLPVKNFSEAAVFAKAENVSGEYQAEHCLVRNKGCFGCSIGCGRVSRNRGKYKGIGEGPEYEATWGLGPNLFIDDFEAISKANFLCNELGLDPISLAGTLACATEMMEKGFIPWEKADLRWGDADMLVEMTIKTAYREGFGDELAEGSYRLAEKYGHPEFSMSVKKQELPAYDPRGQQGIGLNYATSNRGGCHVRGYMTSPEVLGIPEKVDPDSTEGKAALLKIFQDLTALVDSA
GICLFTTFGQGLPEIAEQLRQATGLDLSDEEFLLAGERIWNLERSFNLQAGISSKDDTLPPRLLREPMKGGPHQGNVVRLELMLPEYYTLRGWDQAGVPTPEKLQELSL*
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LLGRGELLRKRILLFNLLDMEFEVLDL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01879_MoaD_family_protein
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HPHRETLQVLGKYGAELLRTDEDGTLIITSNGQKIEAYKKGKKEASAGLSPVPVSTAVQGEEGVFYIGNLKSRVFHRPDCPNLPAAKNQIRLPSREEALEKGYRPCKNCQP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01882_Superoxide_dismutase_[Mn/Fe]
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01885_lipoprotein_releasing_system,_transmembrane_protein,_LolC/E_family
MTILTRRLFRTIQAGRGQFLALVLIVTLGVIIYIGMSSSYNNLSRSQQQFYQDYAFADYTFQVVKAPESIVARVEALPGVLNASGRIQKDVPIIKEGQERITGRLTGYSLPMENELNRLHLLSGRQLEPTASGKVAVLLDPQYARANLLAPGQDMEIIADGKKVSLAVIGTATSPEFIYPMKDAGSLFPEPERFGILMLSQLQAQQILGLPGQINQLLVDLAPGVDEEKIKEQVEKILAPYGNITSYPRKDQS
SHLVLQAELDGIKLFALTLPFIFFLVAAGIQFIILTRLIRSQRLPIGVMKALGFDNCRIMWHYTSYGLAVGLVAAILGTGLGIALTAVLNNLYAQFFNLPNMTNEINFRVVLYSFLITSLVGIASGFFASRSVIRINPAEAMRTQPPSSGRRTPLESWYWFWQQLSSSWKMSLRSIFRNRGRFAVSVLGIISSVVLLVFSCFSLDATDTYLMNQNFEQINRYDYMIRFTEPVKYSEILDWTRWNEVQRMEPMMEV
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GLALFFVWIGQQLAIRKVERLDMVEALKNQD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01886_Lipoprotein-releasing_system_ATP-binding_protein_LolD
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01887_marine_proteobacterial_sortase_target_protein
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SSVLDEAGFHSFQASIEVEQDGVADNNEAYAFSMVQGPPRLLLVEGKKGEARGLEAVLSSLNMDYDLLSPRELPASLTELQRYGLMILCNVPAEDLRAEAMQAVHTAVRDLGKGLIMVGGEDSFGPGGYFNTPVEKALPVYMDLRGKKEIPSLGLVLVIDKSGSMSESSGGYSKVELAKEAAIQATSILGPLDMAGVVAFDDTAQMVVEFQAVKDKDAIQDDIATIRADGGTSIYPALALAYAALK
DAHTKFKHIILLTDGQSASTGDYYFLSRRMARAGITMSTVAVGEGADTLLLEQLAAWGQGRYYFSDEISNIPRIFTKETMKAIKSYLVEESFFPVLTAESPLMDGISAVPVLEGYVATTPKKAAQVVLSSHRQDPVLAQWQYGLGRSIAFTTDGGWRWSSAWTAWGDYNHFWGNLISWTLPRSQQDARLELKTSREGRQGLIQVDSRELSLSLPSEAVVVDPELKAQKIKLEPVAPGRYEGRFSTGE
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01888_hypothetical_protein
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SDIELRVDGELFDIREIKLEAEGAREIIWEDLPAGAESIQAILQRPDFLPADNEAWAVVEELTENRALLVSQGNLFLEKALNLLPGLELFKTSPAEYDPALADYQLFIFDSWLPAGLPQASIIIVNPPPGNPWLAINGEAKNLSGIKAAGEDSNLRYIDSSDWQVARSQKLLCPDWARTLLESEGVPLLLAGQLSGRVAIFSFDLHESNIPLQTGFPILVHNLVGWLLPGNAGASFDLNRSRISFDPHPEAEAI
YLQRPGEKEERYLPPFPRSFSASHPGLYQINQVLGDRIESNFLARNQGDPLESDIKPATLPWQAFEAESRGGGERLGKKELWPWLCWAVLLLLLLEWEVYRRGY*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01931_YibE/F-like_protein
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YVENLNLDMRGLLFSGILIGAVGAIMDVTMSVASAISEIKRANPEMNTAELVAAGMNVGRDIMGTMANTLILAYTGGAMPFMLLFMVYEMEPLRIVNWELIVTEIIRALVGSIALIISVPITAVIAGWLTATRKV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01932_hypothetical_protein
LSNENIVEALKDTNKKIADLKSFNIPIILKTIEEYEKSGVEECFIEQQRLQLQKVYARINELEAKAERLFNRLE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01933_hypothetical_protein
MELSVECLPCLVNQAVRLVKIHLDNEKAQRILVKKIMLEIGASDDTASTPYIAHKMQQVLKDVLQNPDPYRDVKLYYNSEMLKLEKEFLAVIRSAEDQLGTALKLAAAGNIIDFGPGHDLSRAEVIKVLNQTLEKEFNHEVFTSLRSKLQAARKLLYLGDNAGEIVFDKMFIRTIKAEYPDLEVDFATRGAPVLNDVTEEDAYFIGMNAYAHIINNGTDIPGTVREYCSASFNLAFDNADLVIAKGQGN
FESLYGTGRVNLYYIFLCKCNLLMERCGVLQNDIILMKE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01934_Flagellum_site-determining_protein_YlxH
MSENCDQDCSICGDDCTERKEPKTDFSEKPHELSNIKKVIGVVSGKGGVGKSLVTSMLAVTMNRKGYNTAVLDADITGPSIPKAFGVKEKATANALGLLPIKSKTGIDIMSINMLLEDDTNPVVWRGPLLAGAVKQFWTDVIWYDVDFMFIDMPPGTGDVPLTVFQSLPVDGIIIVTSPQELVSMIVSKAVKMAEKMNIPVIGLVENMAYFKCPDNNKDYWIFGESHIEEVAEKHKLKLLARLPIDP
KISEACDKGMIEFYDGVWLNGIAEILEKTEEKEMLKIAVANENGMVTEHFGHCESFMIFDTEKNQIIKSETIANPGHKPGFLPIFLNDKGVKVIISGGIGSGAIDIFNEKGIEVIAGARGDAKAAVEQYLQGMLKSTGSVCHEHQYHDECGH*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01935_Ferredoxin
MYIDDTCIGCGLCLESCPVEAISLVENKAVINKEICIECALCADVCPLEAIQQED*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01936_hypothetical_protein
MPRPRKRRKVCCLPGNSRFGPLDSPANTKNFVNMTIDEYETIRLIDLERFTQEECANRMNIARTTVQGIYNEARKKVAESLVNGKVLKIEGGDYRLCDGSGDFCGSEGCHRHRHGWGK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01937_hypothetical_protein
MPRRNGTGPLGMGAMTGRGLGACTGVNAPFYGSEFGRGCGRGFGRGFGFGRGRGFGFGRGFGFGAYNNYNYSQTASKEVLQAQKEQLQITLDAIDKRLGSL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01939_putative_secretion_ATPase,_PEP-CTERM_locus_subfamily
MFESFYGLERTPFSRDIPTDQLYQSHMLEETLGRLEYTAQRQMFAVLTGDCGTGKTTTIRKLKEALDTSRFMVMYLADSKLTPRHFYKGLLEQLGCEAKFYRGDAKRQLHKEIELMQGIHHLQPVVIVDEAHLLDKEMLEEVRFLLNFKMDAQSPMALILVGQLSQKSDNCPYPSNYFILNIIVKA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01940_Integrase_core_domain_protein
MRDQKKADEIAEQRVQILSPLLAEGLDSAQARQIKARICEQTGISERTLRRYLAQYRKDGFSGLKPKGKGERRSDEAIPVNILEQAILLRRQVPSRSIAQIIQILEWEGLVEPGQIKRSTLQEKLAERGYSARHMRMYADTGTAARRYQKKYRNQLWHSDIKYGPYLPIGKDGKKKQVYLVTFVDDATRYILHGQFYPTLDQVIVEDAFRQAILKYGVPEKVYFDNGSQYRTKWMKRACAKMGIRLLFA
KPYSPEATGKSERFNRVVDSFLAEAVLEKPQTLDKLNQLFEVWLEECYQNKPHSGLEGNISPQTAYRSDRKSLKFLDPETIASAFLHCEERKVDKAGCISFAGKKYEVGLTFIGCKVDVIYDPADISELTIEYEGHKPFKAKELVIGERSAPRPKLPEHLQKAPADSSRLLNAAARKNQERKETQIPAVSYRKVRKEGESHV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01941_hypothetical_protein
LEQLPCPCCSGQLKVIGSRQRKCINASGEKIILIIRRLRCIECNRIHHELPDMLVPYKLHVSESIEAVVSNDSELSVISDESTLNRWRKWFNEKADYFQGCMESITIRYGSESVEDKSDLPESKLQRIWHYVGDAPGWLARVVRPIANLNLWIHTRLAFCP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01942_Acyl-CoA_dehydrogenase
MAFGFTYNEDQIALQKTVRKFVENEIVPVRASYDESEEFPWPEVKKMFELGLNCMNAPEKFNGMVFGNVGLCMVVEELCRGCLGIAISPIANMLASEPVLYGGTEEQWDYWYPSICEEGKLAAYAVTEPGAGSDVAGLSTTCKKDGDYYILNGTKIFITNGKHADKLTVLATHDKSKGNRAQSFFMVDTKTEGVSFGKSEHKMGMRCSETSEVILDNVKVHKKYRLGEEGDGFKLAMKAFNSS
RPFIASASTGVASAAFEFARDYAKERKAFGKSIADFQAIQFMLADMAMDIEASKLLWQKAAWLLDEKLMAADLSAMSKCFAADAANRVVTNAVQILGGYGFCREYPVEKMMRDAKILQIFEGTAQIQRVIIGKSVLA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01943_Glutaconate_CoA-transferase_subunit_A
MNNLFDKRPRLARSNKVVSLSEAIDEIRNGDVLMMGSFVDTRRPMAAAYEIVRQQKHNLILLAQCSLAEDIMVGAGCAIAWRGCYTGIATFGLSPATLRKTEAGKFFPDEIGHLDIIYGALAAMVGSPFVATRATLGSDVLNDQLDRNRILIDKAGNKAMIPKKKFELIEDPFYNQGLVKLLPAMPADAAIIHTQMAGEKGTARISGSLAFDHYFVHAARTVIVTTEQIVPEEYLRRDPNRNQIPCTA
VDMVVEIPWGGHPSQVMGYYDTDIPFIRDYVLSARTDEGFERWVGEWILDVKSRDQYLDKLGASRLEGLRRAADPQGYRSRS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01944_Glutaconate_CoA-transferase_subunit_A
MKTSKVVSLKEAIQEVRDGDVILTGGIVENRRPVAASMEMVRQKKKNLVLIGTCSLSDDILVGGGCVEAYRGCYTSNGAFGISPNMKRRTEEGTIITDEIGHIDYCLGLMAGQAGLPFVASKTDIGTDVLNPAYDNLSKTAEVARDKTMLPNKKYVLMEDPFFGMGTIQLLPAIKLDVCICHVQMAGEEGTVRIDGSLTFDHLGALCAKKVIITAEQIVPESYIRQDPNRNCIPCTSVDMVVEVPWG
AHPGQVYNCYDMDIPFLQEYAKMCATQEGFDKWAAQWIFNQNGHWDYLDKLGVSRLEKLRALPPYGYVPRNKGGVK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01945_Glutaconate_CoA-transferase_subunit_B
MTKEYAKIGEYSAVEAMVCHSARFLANFDGKKGLIGTGLPLVASQLAKKLYSPNMIIFIETGQADANPQELAISIMDSRLTYGSSWQMGDPEGLYPLSRNEIDFGFIGGAQIDKYGNVNSTFIGGDYNKPAKRLAGTAGAVDIGVFAKTTVILMAHQKRRVCEFVDYLTTPGWMVKKWPEGTLVRREELGLQGGPSCFISSMGICKFNDDDKVMYLDKYFPGITLEQIKENTGFDIDVSRADEADHI
LVDEIRLLREEIDPLNIYKMR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01946_Acetyl-CoA_acetyltransferase
MTNKEVVMVSACRTPIARFLGSLKDVQAKELAITVGKEAIRRANVDPSMIDEITMGEVYPHMQGSLPARQVGLACGLTVESSAVNINQNCTSAMRALEIAAHNIILGKTEIALVVGTESMTNVPYMLAKARMGYRLNAGILEDALIQDALFCGFTGGHMAITAENVAEKYGITREECDELGLISHQRATAAVQNGTFKREVVPVEIKGKKGKVTYYENDEHMIPDANLEAMSKLPPAFKKGGVVTA
ANASGINDGAAGAVIMSKEKAEKLGIKPLMKLINICGAGMEPTLMGLGPAVAIPKCLKQANMKFEDVEYWEINEAFAAQWLGVGRMLKEDYGMNLSLDKVNHNGSGIALGHPVGATGLRIIVSMYYEMERLGLTIGGASLCVGGGPAMCSLWTRNI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01947_putative_3-hydroxybutyryl-CoA_dehydrogenase
MAIKKLGVLGAGTMGAGIAQVGAQSGLQVILVDLEQAFVDKAIKGMIKNWDKDLSKGKITDQDKTNFLKNLKVSTNNNDFKDCDLVIEVIVENIDVKKKVFRELNDICAPRTVIASNTSGFSITEIAAASGRPDKVVGMHFFNPVPVMKLVEVIPGAETSQETIDLAMEACKTINKKAIPAKESPGFIVNRILVPYLNDAAVAYGEGVASAAEIDEAMKLGANMPIGPLALCDLIGIDVLLMVVDYFFK
EFGDPKFRPALAFKQKVRAGHYGVKSGKGFFDYSK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01948_3-oxoadipate_CoA-transferase_subunit_A
MKAPKIITLQEAAALIKNGNCLAFSGFTIWRRPVAMCYELLRQSKKDLHLFEVQGGFHSEVLIGGGAVKLWEGSWIGQEILGKTGVNMSRKQVAKEILVDDYSHGHAVGRIMAGSVGIPFFPTALAMVQIS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01949_hypothetical_protein
MPAMHADKLDWQMFYAAYAKTYIEHDVRALAQVGDQIKFIKFMTAMAARTGQMLNLSAVSRETGISVPTADRWLSILISSNIVYLLPPYYSNITKRMVKTPKLYFLDTGLAAYLTKWNTPQVLEAGAMAGAFFKTFVVSEILKSYYNTGILEPALYYYRDKDAKEIDILIKQNGMIYPVEIKKTANPGKEHIEHFSVLNKLKGVKIGNGGVICSALEHERFPQSTMGA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01950_hypothetical_protein
MTYISRHAETTADKAAKMFPVVLITGARQVGKTTLLKHMTSDIPYLTLDDPILLQNAIEEAGSFFKMTPLPVMLDEIQYAPSLFSYIKMSVDESGKKGQFFFDRFAAI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01951_Anti-sigma-V_factor_RsiV
LLKRIICYAMVLSLIALSAAPALAKAPGDFADLLEHWAQRNVSAVCNLGLMSGMGENEQGSQVFSPDGLVNRAQLALVLQRTFELDYGEKSFIKQPQAGDYYLDVDNGAWYAEAVKFCAINQVFDSAEKFYPEQAVTRIEVARAIHRSIKAKGLNIPMIMLMPYYQDMEGLSQEDSNALVFASNTSLMKGDGQNWRPQEQITRAELATVLNSLLRLLAVDESYDGQEYRLAPGHSFTLMLDSN
PTTGYSWTASYDEKVLALDARHYQQAGEGNIMGQGGKDTWRFKALQAGTTEIKMVYSRSWESVEPIKTFTLKIVIAPGQAETGKVKVSSRMLKEKSDTMDVDLEIPVISGLEAVLQSAINQRFEGDAMELKQSLETGLKAYLAECKAEGYPIRSYQLFTRYQQCRLNDKVLSLYVDYYQYTGGAHGITERRAYNIDLKSGELLPLAAMFKSGYDYKAVIEQEIKRQIALNSDVYFKGDQGFKGLNQ
EQGYYLEDENLVIYFGQYEIAPGVSGIPEFKIPLKLLSI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01952_Membrane-bound_metallopeptidase
MMVRSFKLRMLLVIFLVAAAGLAMQSGESSRRIAEPVIRFMLKDYGVEQKIASFIDNLRDQGRLDLVPARSNSTLTLPCEYIAVKKNYGWHWNSKTHKQEFSPGIYLEVNRNTAVNPILDGRVIEISSNKEGRQVLLEHNENFYSLYGGLDEVFVEEGKEVAADSLIGKTGKTLYFEIRNQDGPQDPTPLFE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01953_Putative_zinc_metalloproteasec/MT2700
LGIPIRVNPLFLLLAILYSCLGLGREIIIILAAVFLHEIAHTLVALMLGIKVAEIEILPFGGQAQIEDFTGLDPSKEICLALAGPAVSLLLAGLFYFLQPYLNVDLRFFVNINLLLGLFNLLPALPLDGGRVFRALISPLLGFKRSTKIAAFLGQLIALLLFAYGFYLSYTRFTGANYIAIGVLLFWAARREGKLLLYSFMRYLINKKAELARKGFLSCNQLVAYTYTPVKEILNAAGPSYYLVVVVLDEKHHPRGMISE
VELIECYLEKGPRVSLEDCQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01954_Ribosomal_protein_S12_methylthiotransferase_RimO
LKDRLFRDILPRVAKPARYTGSELNMIKKDWEQAGVKMVFAFPDVYEVGMSHVGGKILYGLVNEKSRHLLERVFAPWPDMEAIMREEQIPLFSLESFRPVLDFEVLGFSLQYELSITNVLNMLDLAGIPLWSRERDEAHPLVIAGGPVVFNPEPFAEFFDIFIIGDGEEVLLEFLDQVEASRGLERLEKLKRLAAIEGVYAPALYSVEYREDGTLKSFAPMFPGVPARVRKRVVKDLDQAYYPDKPLVPY
MEITHDRAVLEVMRGCQRGCRFCHAGIVYRPVRERSLEILENQARRQLQNTGYEEISLASLSSLDYSGIDPLLKALVGNYGEKGIGVSLPSLRVDAFSIDLANEVQKVRKTTLTLAPEAGTQRLRDIINKNVSEEQLLEAVEAAFKSGWLSLKLYFMIGLPGEREEDLEGIIEILQKVKYIGDKYSRRPVEIRASLASFVPKAHTPFQWRPQNTMAELDSKQQFLSRRRRKRIKLSFHDSRTSYLEGAIARGDR
RLAPVIYLAWQKGCKFDAWSEYFNFDCWQDAFRECAVDPEFYTGRQRPYEEDFPWDFIDIGVSKDFLQEEDQKAEEGLTTADCRQEGCSDCGICPAMEVSLNIKGGNVDAIEKQI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01955_radical_SAM-linked_protein
MRLRSRYRVGPELKFLGNLDMMHLMERSLRRAVIPYALSEGFNPHIKLSMGTVLPVGLWGENEYFDLELSQRMDTIDFRQKLSAALPSCLQLEECQEIADGAPSLMKIINAASYVFLLEPPFPSLDKWKEELLARPSLTVRSRGKKKGLDKELRTGIYRIEVEQSLNFGRVEIWVAVGEPVNVRYDELGELLLQTGFTQKSIAEVFRSGNYIREGSSYLSPLEVLLDKHTSPCGHSWCSTLRCHY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01956_Ribonuclease_G
LIKEIIAEVYPWESRVAIVEDGRLAEVFWADQGENVGKIYKGKIKDILPGLSCVFIDIGLARNAFLYAGDVVRVGKKKGLNVYELLKSGQDIMVQVKKEAFSEKGARVTGDLSIPGRLLVLLPFQNEVSISRKITGDERRKHLRSLLEESKPENGGIIVRTACLEAEDQEIIQELNRLLKTWEEIKQRYQNRKAPSLIYEDMDVLERTMRDYLDGNLSRIVINNQRLKDKILEYISGKKIFNRLTVDYEEGALFE
KNNLEKDIKRSLRRKIWLKNGGYLIFDRTEAMIVIDVNSGKFTGKDNFEETVFKINMEAAIEIPRQLRLRSLGGIILIDFIDMKEKSNQDELVRVLKTELEKDKANTRIIGITGLGFLEMTRKKSRYGVVEFFTDECSNCSGRGHIINLQALASEAKRKMAHMGYLENSQIICKAEPRLLKILKDDEKDIGYIESRSGKSVLLLSDPDLAPGEYKIFAGSE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01958_50S_ribosomal_protein_L21
LYAIIESGGKQYKVAEGSVIKVEKLDIAAGEKLTLDQVLFLNDGNGNVKIGNPLVAGVRVIAEVMEQGKHKKITVFKYKRRKNYRKKQGHRQPYTKIKVEKIEA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01959_putative_ribosomal_protein
MLALTINYKNNKIISFKIEGHAGFAPEGEDIYCAGVSAVAQTALLGLIKQLTVEPKYKMEKGFLECELPPSLNEEELEKAQIILSTMEAGLLSMQEAYPGRIRVNIRRC*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01960_50S_ribosomal_protein_L27
MFTFDLQLFAHKKGVGSSKNGRDSQSKRLGVKRYDGQIVTAGNILVRQRGTKIHPGQNVMIGGDDTLFAVIDGRVKFERKGRDKKQVSVYPLETMIM*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01961_sensory_histidine_kinase_DcuS
LEAKHSMEILRRVRHDFANHLQVVSGYLELGRCQQVKEYIAEIVKDMAEEKKIFEAGLSAKEALYFFEKTLTARELGIILRYKDLEVNSLDLAKLNHKLDEVLNELSDQLKGREEEPVVYLSVHNNEEEITMLFSCTMLAQSLVRISIKE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01962_Spo0B-associated_GTP-binding_protein
MFVDQARIFVKGGDGGNGIVAFRREKYVPMGGPSGGDGGRGANVILMADEGLKTLMDFKYRRHFKAERGVHGQGKNMHGAWGHDLRVKVPVGTVIKDDESGEVLADLLLHGQEAVVARGGRGGRGNARFSSAINKAPSFSENGEPGEEKWIRLELKLLADVGLVGFPNAGKSTLISRVSAARPKIADYPFTTLVPNLGVVMTRERDTFVLADIPGLIEGAHQGLGLGHEFLRHIERTRVILFI
LDAAQTEGRDVVEDYRILYRELELHNPDLLKRPQLIVANKMDIPDARGNARRLESELGKTVYCISAVTGQGVEELMEKTYALLQAAPQDIPRGEEPVVRRFEEELPFQIDKVEGVFEVSGPRIEKLVVMTNFNSDEGLQRFQRTVIKMGLEEALKEQGIKEGDSVRIKDFEFEFTE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01963_Glutamate_5-kinase
MGWRDKFNKCRRVVIKVGTSTLTYNNGQLNLLRIEHLVREMADLHNRDMEVLLVTSGAIGVGANRMGYKKVPKTMPEKQALAAVGQGALLHLYEKFFGEYGKTVAQVLLTRDDLDDRMRYLNATNALLAILAMDVIPIINENDTVVVDEIKFGDNDTLSALVAGIVNADLLLILSDVDGLYDCDPRTNKEAVLQHQVSEITRDMEEKSASRGSSFSSGGMITKLKAAQVCMAAGVPMVIANS
DEDNVIRRVVGGEELGTLFIPREEKMHAREKWIAFGTVCQGKLLVDAGARQALLNRGKSLLPSGVTGVEGDFDRGTVVAVIEPDGREIARGLVNYAAREIALIAGKRSGEIEAILGEKDYDEVIHRNNLWVRG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01964_Gamma-glutamyl_phosphate_reductase
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IVFNAKVQRPSVCNAAETLLVNEKIAGEFLPAMIAELKGAGVEIRGCERTREIVPDILPAREEDWDEEYLDLILAVKVLDSVEEAIEHINCHGTGHSEAIISEEYSSVRRFMSAVDAAAVYANASTRFTDGNVFGFGAEMGISTQKLHARGPMGLQELTTTKFIIYGDGQIR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01965_SNARE_associated_Golgi_protein
MLEHLLPVLQAYGVWGLLILAFAESSFFPVFPDFILIPLCLANPEQAAFYALLATVGSATGAYFGYVLGNVVGQPLLRRLASGEKIALIEKTYQKYGAWAVCIAGLAPLPYKLFTISSGIFRLSLPGFLTATLLGRGLRFFAEAILIMSVGEQALVFISQNSGWLSTIVISGIIILLMLFFKRQSVSNFLLGLRDKAGLTRISKGRILGPRLQLLGEWLVALGSGAFLSFFLAGSIKDILNNRLFNTDQVLNQLFAPVI
GPAWKTVDWLFNGWVLFLLILISSYLFLRREKWESVAFLFLSLMGSSTVLWGFYRIIMENYSLNPFSSHLFTHPTRVLINTLWACYIIWLSASRKTLWRKEKLVKFLSGLLVLLLLGVSRVSAGFRPSEVVVTLAIAGLWSVVVWIIFLYRHSLREN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01966_Cysteine_synthase
MEWDANNKIFDNVLEVIGRTPMIRLNKIGKGLKPDICAKLEYVNPSGSLKDRVVHKIVEEAEKRGDLKPGMILLEGTTGNTGIAAAMVGAAKGYRVIIVMPEGMSEERKKTIAAYGAELLLTPGAETDVDLVLEEVKRIKQEYGEQIFEVGQFYREDNLLAHIDNTAPEIWEQTAGEMDVFIMCQGTGGTVTGTAKYLKEKNPAIKVYVSEPEDSPILACGRIGQHKIQGIADGLIPEILDLQYIDGIIL
VSSDEALETARQMARKEGIFCGSSSGINVAAAIKAAQKYPEKKCIVTIINDNGLRYLSTELCGTMPERQLLDREYRLSQEDLDKLARYNFEII*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01967_hypothetical_protein
MLKKLELTFHNQGLRSYIELDLCTECPRQDDKGCCGYYSPVFYPCDFAYLLQYKPEVLDYIFSLDNLTILDASVTVNSRPEGQSYRCSFHSNTGGCLLPQALRESVCRHFVCPGVAWEKEDKLAHWKDFFTALADYEIELNNRIAGILKEKGLSLREEKRREEFLAELLILFEQETAITAPFLAECPPLEKFSLFRELQYGTDWPL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01968_Nicotinate-nucleotide_adenylyltransferase
MNWDKIGQVVKVEKIKPWGILGGTFDPIHYGHLIAAEYACHNFKLDKVLLIPAASPPHKELGQVLPAMHRYRMAELAVKSNPHLEVSPVEMEREGLSYTVDTLAYFQAKFPEVEFFFIVGADSLFIMHSWKEPERLAELCRFIVVTRPGYKIERSEAALGRLPDIIWDRMLQMEIPGLDISSSDIRQRAAAGKPIKYLLPPEVEEYIFEQGLYRGDKYAEG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01969_putative_nicotinate-nucleotide_adenylyltransferase
LSRDYTGGINMLRDRQQLMDIIKRRLSPNRLQHSLQVAETAVQMAGQYELELEQVYLTALLHDYAKGLSGQELLRLAEENNLIEDEVDREVPDLLHAPVGAFMIKRDLGIEDEEVLTAISRHTLGSTKMSELDKIIYLADMIEPGRDFPGLERLKCLSFRDLDEAMLFGLESTIKYCLDRGRILHPRTIEARNHFLRIRS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01970_Ribosomal_silencing_factor_RsfS
LLNEEELAQAVAAACLDEKAVDVVILDVNELTIITDYFVIATARSRVQVQNIVEMVQERLKEFNILPSRVEGVEQGNWAVMDYSSTILHVFQPEEREYYDLENLWGDAKEVDVNESYA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01971_hypothetical_protein
MSMSAPKPDREYTYGDYLQWPDEERWEIIGGVPYDMSPVPSGKHQEISGELFFQLRSFFQDRSCRVFAAPFDVRLPQGDEKDEDITNVVQPDLSIIRDLDKLDERGCKGTPTVVIEIISPSTAKKELNEKFNLYEKSAIPEYWVVFPGLNVIVVYSLDDEGKYQKTGEYAANQVLTSPLFPGLEVKLEEVFQIK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01972_Methylated-DNA--protein-cysteine_methyltransferase,_inducible
MKWLVFDTSWGWAAVLSDNRLIKRTILPFAVGLNEFKTGLESSGIESRLFGENDVTLPLINNIRRYFQGQLIDNWEAQWDINSLPAFTQKVLQHISQIPYGVTKTYGEVARELGKPRAARAVGRALSLNPLPLLIPCHRVLAQNGGLGGFTAPGGVETKKALLALENEVISCHNSDRRVHQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01973_Leucine--tRNA_ligase
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DEVLTVFTTRPDTVFGVTYMVLAPEHPLVEKICRPEQTETVEKAFVNKMKYLNEMARTSTEAEKEGVFTGAYAINPMDGSRIPIWLANYVLMDYGTGAIMAVPAHDQRDFEFARKYDIPIKVVIKGEDIPLDGNLLQESYPGDGHMVNSGEFDGLIVEEGQKAVIKFMEEKGIGRGTINYRLRDWLISRQRYWGAPIPIVYCPECGPVAVPEEELPVLLPEDIEFKPYGESPLNFVESFYKATCPSCGKE
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AKGQSI*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_01990_Heat-inducible_transcription_repressor_HrcA
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02003_sporulation_protein_YqfC
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MKSGFVSIVGRPNVGKSTLLNAIIGEKIAIVSEKPQTTRTRIQGIYTCERGQVIYVDTPGIHKPKHLLGEYMVKVSARSLEEVDIIYYMTDVTRPFGGGESFILDQLKDARVPVFLLVNKIDLVSEQEVKDYIQIFNQQRSFSEVVSISAACGTNLQLLLDKTLDALPEGPLYYPEDDLTDQPIYLLIAELIREKALMLTHDEVPHSLAVEVEEFKKQSNGKVYLRAAIYMERDSQKGIVIGKKGQMLKTIGEQ
ARQDIESLLDTAVYLDLWVKVKKNWRDNENTLNQLGYRM*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02011_Deoxyribose-phosphate_aldolase
MLAKYLDSTNLQAEARASDIESLCQEARQFQVAAVCVNPFRLELACHLLAGTPVKACTVIAFPLGADHWKNKVDSARRALQMGAAELDMVMNIGAFKDRDYRLVEREIKELLRLREEYAFLLKVIVETALLSKGELQDISALLSNSEADFIKTSTGFSSRGVTLEDIEIIRESRQRKDLKIKASGGIKSLDFALELLKAGVDRIGSSSALALLEEYRQRGGQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02012_hypothetical_protein
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VGDARKLYLAFDYGCISPEEAGEFMKKVSKSSGLPAQIVNEAVKVSSVFWGGK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02013_Recombination_protein_O
MYLRSRAIVIKNMDYRESDKLVTIFCEHEGKMKAVARGIKKPRSSLRACVQPFCHSSLFFSRGKGMNLITQGKLLEFYGNTREDFERSLYALYLMELLDKSLMEGIAIPRLYTSTLEVLSHLNHSGYNPMLIRYFEMNLLVNLGYSPLLHHCVLCGKKDDLKVFSLPDGGMLCRDCSYQASGAVSLSKETLALIGLLGSSRLVTVERVRVSNKAQKELEYFLEKYLEYYLERRFNLKKAMSILKRSMPKDT
HLI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02014_hypothetical_protein
MNGFTNKILSAFSTLVDKQGIKFVYYNEPINKQAAGSNPRFVAAVWLKLLHSFFRCLKIKIQIPSKSNYNA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02015_Magnesium_transport_protein_CorA
VIKTYFYNEQEDRMFHDVDLANAPDLLVSPKNLLWIDIYDCSERELQYIGDIFNFHPLTLEDCLQEENPRAKIDRYDDYYFFVFHALNYFEEAEEEDEISSIELDVFLGPNYIVTIHPIALSAVGKIARICLKDSRFMTRGPDYLLHAIVDNIVDDSFPILQRLGERIDKLEDNIFLQKGQVITEEILTLKRTLILLRKVLIPQRHIFANISGRYSFFARNENIPYYLDLADNLNSILDTVNTFRDLVNSSTEIYYSVL
SGRTSEIITILTVITVIMMPLTVITGFYGMNVKLPGEANPYSVWYISLAMFSLALGMLGFFRFRKWL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02016_putative_molybdopterin_biosynthesis_protein_MoeA/LysR_substrate_binding-domain-containing_protein
MKEDRSLTPQEVAKILKITKYTVYEMVKRGELPAYRIGRKIRIEQRDVDAYIKQGKKYKYKEIDTLEASSKPQAARQDYLSNAPGLVICGQDLLLDVLSRHLESHSQGCRAFRHNIGSFAGLLQLYQGESDMAGIHLWDSDSDSYNIPYVRRMVPGIPTLIIHLAMRQQGFYVARGNPLEIKGWEDLTLPDLRFINREPGCGTRVLLDEHLYQMKLDRRKINGYKREETSHLAVASAVARGTADLALG
NEKAAMQVRGIEFIPLQKERYELVIRKEDHDKAEIRAALDIINSAAFKSELEGLGDYCLEETGRIVAEI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02017_Molybdate-binding_periplasmic_protein_precursor
MRHNKKAKARISILVALIFVLCMAGSAFAANPAATGNLVWKAGDQCSVNASALNFRTGPGMNYKVIKSYTRGSLMTIAEKSGDWYKVTAADGKAGYVFGRYLLTATEAPTPVKAAPSVTTSKAEVTAEPQAKAVSGELIISAAASLTDAMNEMKGLYEKQNKNVKLTFNFGSSGALQQQIEQGAPADVFISAATKQMKALQDKKLIVDESCKNLLKNRLVLVGPKDSAKVKGFSTLKEASLIALGE
PDSVPAGKYAKETLTKMGLWDAVKDKVVYAKDVRQVLAYVESGNVEVGMVYLTDAKISDKVQIISIAEENTHTPIVYPAAVVKASKNPEAAQSFVDFLSSDAAKDVFAKYGFSLVK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02018_Molybdenum_transport_system_permease_protein_ModB
MTEAELIPIWISLKTAGTATLITFILGIAAARWMAYGDFKGKNLLDGLFILPLVLPPTVLGFGLLILFGKNGPLGQLLLYFDKTVIFSWSATVIASTVVAFPLMYQATRAAFEQIQPNLEDAARTLGAKEWTVFWKISMPLAWPGIAAGTILAFARSLGEFGATLMLAGNIPGRTQTAPLAIYFAVEAGRSDQALKWVLAILLISFASIIALNYWKSRQYSSWRNGQPVVKEVVIDAGYRN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02019_Sulfate/thiosulfate_import_ATP-binding_protein_CysA
MLDIEIKKSLPGFKLEVSFAVEREILAILGPSGCGKTMTLKCIAGLIQADEGRIALDDRLLFDSGSGVNIKSRERNMGFVFQNYALFPHMDVFNNIAFGIRQLPVEDIKEKVRLWLQKMRLSGLEKRFPGQLSAGQQQRVALARALVSEPEVLLLDEPFSALDSIVKERLEEELLEIHEFFPGHILFVTHNLAEAYKLSSKIAVYEAGRLLQFGEKEKVVNRPSNRVAARLTGVKNFLPAVVQEVESSSLNLEL
SGLGTRLKAGKVPGEKWESGQVVNLGIRPEYIRINDNGENLIAVLVEEVIEEISSYIIRCSLAGSGGEKILEARIPRTEAVNLSQGDSCQFCLPADKIFIMLE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02020_CobQ/CobB/MinD/ParA_nucleotide_binding_domain_protein
LIKVIMIISNRPACGQTTVAVNLASGLSRKGYRVLIGDTGNNKKLRYWLGIDRQETGTNAAKPLEDKAQAKIFSSRLGIDLLQLLLKPEDSATADYSPHLEKLTYDYLLLTPASSEDCQWLSAMADALIVCSDLTAANELEELKNLEELWRASRINAGGIDLILPNKINTKEWEHNIEQLSILADYFGYEHIADPIPT*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02021_putative_addiction_module_component
MGTDEILKQALKLKIEERFILVESLIKSIDEPDRKLDELWAEEAEKRLAAYREGRLEGIPMEEVFKDER*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02022_Plasmid_stabilisation_system_protein
MRVVFSNYAKLELEDAARFYNLQHAGLGNRFKVEVKNAALRIAKYPTAWSNESGEVRKYLLHKFPYKLLYSIESDHIFIIAVAHQHRKPNYWVERDEL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02023_hypothetical_protein
VLCKNYLGYDSRCFPIKQILDNRRRGNVGDYLVDNIDKKAKLSIVSAYFTIYAYNELMTQLNKIEQLRFLFGEPTFVRDENLKENPPLRL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02024_putative_methyltransferase
MNKFDGKTMDLVQQNIDELKKLFPEALTEGKIDFDQLRLLLGDEVDTGKEKYEFTWPGKSDCIRLSQQQSTGTLRPDKESSKDWGTTQNLYIEGDNLEVLRLLQKAYHRKVKMIYIDPPYNTGNDFIYEDDFRDNVKNYKEKTEQDMMAKPANSGRYHSDWLNMMHPRLNLAKNLLRDEGVIFISIDDNEVDNLKKICNEIFYEYNFVEQLIWKRRSTPPNDRVIGKNHEYILVYAKDIEKME
LYLQPRSEGINSRYSNPDTDPRGDWVASDLSANGKGGRLTESCIYPIKNPITREEYYPPQNKCWLYNEEKMTGLINEGRIGFRANSGAPFLKRYLSEVRQGATLPTIIDNGGFSSDSAKEIKDIFSKDVFEFPKTTKLLKILVQTGSVNNDIILDFFSGSATTAHSVMQLNAEDNGNRKFIMVQLPEPCSEDSEAYKAGFSNICEIGKERIRRAGEKIKEENKDKEGIENLDIGFKVFKLDTSNLKAWDPDVE
ELEETLKGMVDPIKEGRTQEDMLYEIMLKYGIDPTMPLKEIQIKGKTAYSVGLGYMIVCLEDGLTLDVIEAIGDMKQSGQEIARVVFRDSGFADDNVKTNAVQLLKKFGVEDFRTI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02025_type_III_restriction-modification_system_StyLTI_enzyme_res
MKLKFVSDQQFQLDAVASITDIFQGQAVKQTNFSVASTMGSGAQGELGYQIELGYANKLDLLDDELLENINRIQLRNGLPKSTDIQGRNFTIEMETGTGKTYVYIRTIYELNKLYGFTKFIIVVPSVAIREGVNKSLEIMEEHFKSLYEGVNCDYFIYDSSKLGQLRTFATSSNIQIMVINIDAFRKSFVDPNKPDKANIIHREHDRMNGRRPIEFIQQTNPIVIIDEPQSVDRTDKAKEAIASLNPLCTLRYS
ATHVETYNLMYRLGPVDAYQKKLVKEIVVDSIKEAGNFNRPYIRLVSVKNSNGFQAVLELDIKNRSGVVQRKQKTVRVGQDLFDISGEREIYSGYIINNIDCYPGNEMVEFTNGSHLHLGMEMGNISEDDIKRGQISATIKHHLDRELRLVPQGIKVLSLFFIDRVDNYRIYDSNGNPHKGKYALMFEEEYSKLIKLPKYRTLFEDHSYMLNDDTSMVHDGYFSIDKKGRIKDTRGNTLADHDTYNLI
MKEKEKLLSFETPLRFIFSHSALKEGWDNPNVFQICTLIEARETLTRRQKIGRGLRLCVNQEGERIFDPQINTLSVMANESFAEFAENLQSEMEAETGVKFGFIEKHAFAGISYTDDSGKIENLGYEASENLWGFLLEEDLIYTTGKVKPELKEQIANDTFQVPPEFEHVEHGIKQVIRQSLNKLPIRNHNNEVTAQLNKRVYLGPEFESLWNRIKYRTTYSVAMDIEKLARECVDAINKMPAIPKIRLIQES
ARIDIQQSGVSGELTSVKVLDQIDIKHSLPDILRYLQDETRLTRRTIVRILIEARRLEDFKNNPQKFMEAASDIIKQKMKLMIADGIKYERVGDLEFYRQELFEMQELKGYLKSNAIKVEKSVYDYLILDSNTEKEFAQMLEQDDEVKVYTKLPPKFIIETPIGNYNPDWAVLVDKDGTEKLYFVVETKGSTDSGQLRLFENYKIECGKKHFAALETGVTYEVAEDYAVWKLGI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02026_hypothetical_protein
MSFPTIPSITPSISINRTQVINLLLASIALEELGLAHIINAEGEKLQAVLGALPGLSVKATSISGLLSVNREVRRTLQTIIKNQMLLQFKLEDIMDIFSTPTRPPSPPIFVDAGSAWGVGIEYGTGNAQYFTFESTDTEKTVVLGLGATNIPVGTVHLLRQGTNLLVTFTTDFPYVMNQVHLYVGATAPVNSNPGSFPYKYPPAPDGYFTTYTFTVDVSGIPGTIYVAAHAHILQQV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02027_Glycosyl_transferase_family_2
MPEGKPRVLLGSPIRQKTEILSNFLSSIKELSMSTVNLDFYFIDDNSEEESQLLAAFAARNPNTSLTKVQDERPYICNESTHIWEEELIWKVAELKNSIINKAREDDYDYLFLVDSDLVLHPQTLEHLVSLKKDIVSEIFWTRWQPDFPELPQVWVSDQYNLFKCFRGENLSESQVLQRVLQFLNQVKVPGVYKVGGLGACTLISKRAIQAGVNFKEIYNISFVGEDRHFCIRAVALGFELFVDTHYPAFHI
YRLSELGGLAEFKMRINQTI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02028_Spore_coat_protein_SA
LTRALTTDSKPRDKKFSAEMLEIVRVLNSQKHKAAILYLIPENENPKRELMQLLREMSYKGYLCFLCKPSDSGGIETLEEKLILVNQGFSLIPVIKSLSAIVLSTQNIHPDWAEVLHHKLLWFHIDMDTPNDISEDISKQANLISYFPSTSIMEKFSSNSKGLCLKEGQENQANVALIEARIKSLPLGWLPYANLNLLGKVAVMTATFLDFCGEYFYNGGAERYLLDLAEICTELNNQLIVFQYGDYSWMRRF
KNIDIVSLSRRGIRAEGWILKCARDFNQVFYEQVQGRTALNIYSAFFEAWPLAAAPNIGISHGVSWDNPYNDYENAVEYWLMNQRYIDGAKACEDLVSVDTNTANWLQTVFDLGQKTKLIPNYVNLSVFKPAEDYLEKGDKTVILYPRQLYSARGLYMVLEILDDILEQYPEVEFHFVGRGGEQDINQVIEKQKKWSERVRHYPLSMEEMPRAYQAADISLIPSVHSEGTSLSCLEAMASGNAVIAT
RIGGLSDLIINNYNGFLIDPRPEELKQAIMNLLDNPEQLNLFKRRNLEVALAFSQDLWRKRWLLLLKNKINEIPANKITNSRTVEIKLISNPVDYGKLGELIITLLANGDLVVRSSEVPEPELSFARIQWLAPETPLFAPCDLTIEW*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02029_bifunctional_3-demethylubiquinone-9_3-methyltransferase/_2-octaprenyl-6-hydroxy_phenol_methylase
VAGCSDLSFYDQDYFDRGCQSGKSNYVDYSWERIGGEVEKTAAHIIKHYAPAKTLDVGCAKGFMVKALYERGVDAYGIDASDYAVSKVPAEVNDRVKLGLASDLTYNSNEFDLVTIFDVLEHIPEELAYPTCAELLRVSSKWVLVYVVTKYEPDDIDPTHINIKPREWWEAKFVELGGKICSTNVIYNPDIWWFNLAERLILVKK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02030_SPBc2_prophage-derived_glycosyltransferase_SunS
VGQNKKSLSLAMIVKDEENCIKRCLDSVINLVDEIIIDTGSTDKTIEICRSYNAQVFPYPWNNNFAEARNFGLDKVTQDWVLWLDADEEVAPENRNQLNNQTLFEDYDALSVPLINFYGEAVDHDQVVQIAQPRFFRNHMGFRFENKIHEWLNLSSAYEQDRVGFLDLKIYHYGYMNSQVENKQKFKRNVSLLLRELAEEKNHSWTHYYLAAEYYRSNEFNKAFEHVNQSIELFINEGIIPPPSMLY
SLKYSILMETGSWEGAWPGIKSAVKMYPDYVDLKFYMGVILYYKKMYQEALDCFRKCLELGESNLNYLTIKGLGSFSAWFYAGLCFEELKNEEEAFLAYLKALIISNNYIPAREAITKLINMHPSLADRIKYLKPEFMRLLESTK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02031_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02032_hypothetical_protein
MPEFPPQHHRPDLYHTIIDLLDSIALEEIALSHLLNAEAEKIQYFIGHISSCTPADVLIDFNAVVNETLETVIMKEWLLLRKLEKVTRFFHQRFPAPIPPRPPIPPCPPVPPHPPCPPCPPRPYQHIYPCHPKSTCKISCKPRHKVKKYYRYCCEE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02033_Putative_anti-sigma_factor_antagonist_BtrV
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DLRSLIIDKLQELDGKTTSVIGMVAIGQTRPGSGSYYQNYEDLIRNQTLERELLEPQTMLLIGLGGNNGWQADEQLSMLMAQQGIRPGEEFFLGNALSFTGQLDWENMQEPGRILEYCSRLELMQDVIMVHEHTALSQGRVWFFVPGQIRSGEEKQLQLEVQGEIPPEEWQIITRRLYADARRVVLEPLHGGFSPGKPFRVTAYDKDQRRMLPTVLKIGPTALIEKEILNHQKYVQGYILNNST
TIMGQTTCGASTGMRYNFVGISGPDSKLDWLTHRFRERPAEELIPLFDEIFTHILKPWYGQPRWEMIKPYQEHNPLGLFPMVFAAAEAEFGISAQEKTIACPELGLLLPNPYHFLQNEYPARQSAARLWYTGINHGDLNMQNILLDERDNVYIIDFSETGFRNIVSDFARLEPIFKFEMTRMGSEADMVAFLEMEQALARANSLDEVPTLVYRGDDPAVDKVYQMICRIRKYAKTVVLFESDLIPYLL
AMLEWTLPIVAFVNVTPWAKKAATYSAALLVEQIMRLESGDQPPG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02034_Inner_membrane_amino-acid_ABC_transporter_permease_protein_YecS
LPKKLLMVGITIILLITLAGCRENPAGGKLKTLDDLKDKRIGVLLGSIYDEYANKTYPDATILQYKSQSDLILAVKTGKADAAFFNHESSLELMRKDQELAYVGENLYKVPVGTGFNQENDELREEFNQFLQQLKASGVYDDMVKRWISNGISDMPKIDNPKNNGRLVVGVVSDKGLPFAIVKNNRIVGFDIELSERFAAYLGKELLLQDMEFAGLVAAAASSKVDMIASTIVITEERKCQVDFSDPYY
ELGVSVFGLKKNIARYENVQENKALTLEALENKRIGVLTGSAGDNAARQRFPQAQVYDFDNIINATAALGTNKIDAVVFERNSLQSIAQQNPDLTVIEEAVKSVDVAIAVKKNNARLLNQVNQVITDLEKSGTLAEMKKRWFVEGDLPVMPELDMPVTETALRVGTEALMPPFEFVDSNNECSGFDIELANRIGQALGKKVAVSNMNFPALIPALQSSKIDLAISCFNITEERQKVDFTRPYHTSNI
AAMVKKPQLSSPLGDFFNNIKTSFYRNIIMEQRYLLIVDGLKVTVIISLFSVVFGTLLGALVCWLRMSKNRGLQALARVYISILRGIPVLVLLMLVFYVVFASVNINPVMVAIVAFGMNFAAYVAEMFRTSIESIDKGQSEAGIASGFTPWQSFGYIIMPQAVRRVLPVYKGEFISLVKMTSVVGYIAVQDLTKASDIIRSRTFDAFFPLVMVALLYFAISWLLALVLDYIAFKSDPQINRSKGGIGA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02035_Arginine_transport_ATP-binding_protein_ArtM
MIKTEQLCKRYGSLTVLKDVSTEISKGEIISIIGPSGTGKSTFLRCLNLLEKPSGGSIYINNVDLLAKDTDVPKIRQKTGMVFQSFNLYAHLSVLENLTLGPVKLLGKSKAEANQKSLELLKLVGLAEKAHSFPDELSGGQKQRVAIARCLAMEPEVILFDEPTSALDPTMVSEVLAVIRRLAKAGMTMLVVTHEMEFARNISTRVFYMDEGIIYEEGTPEQIFENPQREKTRAFINRVRSFNYHIDNPNYDL
YAMNAEIEAFCEKHLLPPRVCDHILLLVEETLLLQTDFSDISLNLAYFEKTGHLEFRCEAAGEPVNPLAEGVQSDDIGLKLIQSRIEDSQYRYENHKNMLFFKVKSE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02036_Transposase_DDE_domain_protein
MIPDNHILKRIDSAIDLSFVNELLADRYCKNFGRPAKEPEMMLRIQILKYLYNLSDEQLIQDLSVNLAYKWFVGLNPEDPLPETSLLTKFRTQRLKDISMDAIITEIVRQCIESGIIKGSNGIVIDTTHIEANTIKKVPERIMKQLARNIFKAMGQEEYEIPDYTQIEDHVAAKQIMKDYLEDLIEQVSKESSEEVIQAVQEAQEILESDLFIEQKGIRSLVDKDARVGHKTKTQNFYGYKAEICQTTNGSLITSIT
IEPGSYVDGSNFKEHLEETQKSGLTVTGVYGDKAYFRPDILNLIKENQATSYIPVSASAYKIDEKLFSYNKDSDQWFCVMGNETVKVKSKTRERNGKKQKYLDYTFERELCRNCPRRSECIGKSKRIAKLMTISINTPELYEYSQRAKTPDFVEEYRKRAKIEPKNAELKRFHGLDRAKGYGLRSIRIQAKLTALSVNLKRIAKLVSALKGLHVLILKLLSPLVVNRPDCDWVAAQAA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02037_hypothetical_protein
MLMVALFRHTCGSIAKYYPSSFWNKYREHIRNHDFQYPLDAFEENVYKENYSEIKTGRSYHQRNGTIVYLYHICIKMP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02038_hypothetical_protein
MKQPNIDFLMNMTKEYLDGKIDSIAYSLDFPHELEQRYKKAHREDDDYCELIYECLYEEGIGRFNELSDGEFKKLIRKQYNYIKKIAREGFY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02039_Transposase
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PNHPVLGEYLPWSEKVQLECRMQNAGTQAEEKDEPRDETA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02040_hypothetical_protein
VRQYRSRYRRAVYGIVGIRLALPAFHTFVHILDIVFHNQLGRDIFQLRAYFFLANNLQFTGADPTHSFFRVQNTLHGLSGKSCRQFLTITFFAYGSFVFLDGNDARIGQREVICVFFTEQGSLSLCWRRFFTGSAEPLLGGL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02041_hypothetical_protein
MFQPVNLLLQFLVFVFKLSDALIFFVDSLHGGLLPGGFVTSIIPENWHFCQHFRAFSVNDAGSVNPVGVRFFLVYL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02042_IS66_Orf2_like_protein
MQHIADKADHIYLALGATDFRKQQNGLASLVALKFNLDPHAGTSVFLFCNKRRNALRALRWDGNGFILVTKALADEMKFQWPKNQGEVRDITKRQLEWLLAGLQVDQKKAYPDRIDTAGIIY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02043_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02044_Sporulation_initiation_inhibitor_protein_soj
VPKVIAIANQKGGTGKTTTTVNLGIGLVMQGKKVLLVDADAQGNLTDSLGFHEPDNLPASLSSVLTKSMTEEPYEPNEGILHHEEGIELMPGNIELSAIEVSLVNTMSRETVLRSYINTVKDKYDYVLIDCMPSLGMMTINALAAADSVIIPVQAHYLPAKGMTQLLQTIARVRRQINPKLTIDGVLVTMVDNRTNFAKDISFILRRDYGDKLRIFQTEIPLSIRAAETSAKGKSIYLHDPHGLAAKAYE
AFTKEVWDIGEKQRKRQHQAGLSR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02045_Nucleoid_occlusion_protein
LAKSSARDSIKLASVDDLFTTEESRAEEQREKVLDIPLSEISDFPNHPFKVKADEAMLEMADSVKQYGVLVPGLVRPKADGGYEMVAGHRRKKASEFAGKETMPCIVRELDDDAATIIMVDSNLQRESISPSEKAFAYKMKLEAMKRQAGRPSKENASQVGTQKRSDQILAEQSGDSRNQIQRYIRLTELIPPVLEMVDEKQIAFNPAVEISYLAEKEQQELYDTMQSEECTPSLAQAQRMKKLSQDG
RLNMDVIFSILTEEKPNQKEKFNIQRERIDRFFPSSFTEKQKEDLIVQLLESWYKKRQREQER*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02046_hypothetical_protein
MHFTEGPLRAYERIMQEKPKHDSEPAKTVQDRDCKHCLHFDEHHHKCSKKKCVIFNE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02047_SAF_domain_protein
LKLLKNRIFLSALCLILAAGVSFFLLPRFYESKSATIMVPRAAQDIPAGTAIQDKHLVAAEVGSYGLPEDVINDKSLIIGKIAQTDITKGGLWLAETICTLHRPSVAAQMWHQSVSDFVRELHIAEKQIHILQAPGGEFDDKVYRDMTGLSFPFELPYVKRASELQNAGTPLYFHRDRACRHYGKVLEQIADRICGGGKP*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02085_DNA_alkylation_repair_enzyme
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02086_Helix-turn-helix_domain_protein
MSMDKELITAQALAEALHLSVETIWRYTREKKIPYIELGNKQYRYKKDDVIKALSNGSIQESASPYETEEPRKLTYQDYLLLPEEPGYHFEILDGMLIKEPAPNVMHQRVSRRLQRILEDYFWKVDPKGEVFNAPLDVTLHDVNVVQPDLLYVASEQEVIVKDTRIDGPPMLVVEVMSPSSTRKDRLQKRRIYQEARVEHYWLVNPQEKTLECFAWHDGVYALVAGGMEEELVEHPDFPGLSIALKA
LWNREI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02087_ABC-type_transporter_ATP-binding_protein_EcsA
MIEICRVSKSYNRGQVKAVDDVSLTVQGGEIFGFLGPNGAGKTTLIKMITGILNADRGSIKINGRDIKDSPLEAKMQFGFVPDDPNIFSRLTGIEYLNFMADVYQVSSEIRVERIQKLLERFEMSTAAADLIQSYSHGMKQKIVVIGALLHNPPVWILDEPMTGLDPRSSYDLKEMMREHADAGKTVFFSTHVLEVAEKVCDRLAIINKGRMIFCGSLEEIRTHARENRSLENLFLELTENA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02088_hypothetical_protein
MHRFWALLKILLINYFGISIFQMKTSKNRKPYFKKIGLVLLIIVALAPTIALYVKLLVRGFDALAPLGQEGAILTLGIVLVSFIVFLFGIFYIINFFYFADDAQSLLALPLSGYQVLGARFSVVLVNEYLSALPFLLPPLLVYGIKSGASVLYWLYALVGFALVPLLPLGLATIPTVIIMRFANLSRRKDLLKILGGLVVIVLAVGYQFLFQKSGPNAMDTAYLQHLLTDRSGLMNLMSRVFPSTRYLGLALINADQL
SGLVNLLVFAGLSLLVVALAWLTGDKLYFKGLVGSTETTVKRKKLSEADYRRAGKGLPPLLSYWAKEMRLLFRTPTYFINSVMTNLLVPVLLTIPFFIQGRNQETTMPWEKLLSEPRGQTIIMAIIVGGIVFIIGSNAVTATSISREGRELYVSKYIPLSYRKQILAKLLSGYLLGMSGAVLMIIAARVLMPLDNYLIAMLVGVTLVAVIPVVEAGLLIDLYNPKLNWENEQQAFKQNFNVIFSMLLAILLGGG
IIYIVIRYIHTPVQAALFILLGFGLAALFLYYFLMTWGVRRCHELEG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02089_Pyruvate_kinase
MRKTKIICTIGPASEQIENLLLMIEAGMNITRLNFSHGSYEEHQKRIANIREARKKAGVPVAIMLDTKGPEIRTGLLKAGKVKLEAGQRFVLTTRQVDGDEHLVQITYDRLPQEVEKGNSILLADGLINLQVLETSDTDIICQVVNGGELGERKGINVPGARINMPFLSEKDKEDINFGIEQEVDFIAASFVRTADDVLEIRRLLERRDADIDIIAKIESQQGVENLEDIIKVADGIMVARGDLGVEIPAEEVP
LVQKNIIEKCSPRGKMVIIATQMLDSMIVNPRPTRAEVSDVANAIFDGADAIMLSGETAAGKYPVEVVKTMARIAGRAEEVLPYQEILRQRRLQGELSITDAISFATCATAMNLNASAIITPTVTGLTARMVAKYRPQASIVAVTTEKRILNKLALVWGVYPLLIPETSGTDELFEESIKAALESSYINNGDLVILTAGVPIGSPGGTNLLKVHVVGRIMAQGMGIGKDPVTGRVRIVIYPEDMEKIKDGDIV
VTTSADCALAPHLSRIAALVAEEGGLTSNAAIMGLNANIPVIVGARNATGLLEDDMLVTLDTPHGRVYQGIARVR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02090_6-phosphofructokinase
LQKIGILTSGGDASGMNAAIRAVVRTALYHQMEAYGIHLGFEGLMAGNFDPMSRGSVADIIHRGGTILQTSRSQIFMTGNGREKARDELQKRDIQNLVIIGGNGSLRGGYELSKLGINVIGIPATIDNDIVYTRSIGFDTAVNTALEAINRIRDTATSHGRIFIIEVMGRHCGEIALAAGVAGGAESILIPEIETDLDEVTRKIKQGTQRGKLHSIIILAEGVYPVMELAQEIEKRTGKDTRVSILGHTQRGG
TPTAVDRIMASRMGMAAVDFIVEGKRNVMVAEEGDRILPVPLQEVIRGSKTPELAMFEIARILSI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02091_Tryptophan_RNA-binding_attenuator_protein
MNDSGYIGEQYIVVKALENGVTIIGLTRGKDTKFHHTEKLDKGEVMVLQFTEHTSAVKIRGHAEILHRYGMSTSESTISSKNP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02092_DNA_polymerase_III_subunit_alpha
MPGSFVHLHNHSEYSLLDGACRIKDLVNRAVELEMPAVAITDHGVLYGVIDFYREARKRGIKPLIGCELYVAPRSRLDKEARIDDNLYHLTLLCKNELGYRNLVQLVSRAFLEGFYYKPRVDQELLEKYHEGLIALSGCVAGEIPRLLQSGDYLGARNKALYYQELFGSGNFYLELQDHGLQEEKASLPGLLRLSREDNIPLAASNDCHYLRKKDAQVHDVLLCIQTGSVVNDEKRLRFSGSEFYMKSR
EEMAALFPDCPEALENTLKIADECNLDFTFGEYHLPVFELPPGHSAESFLSEMVHEKFRRKYPDAQEKIIERLEYELRVINEMGFAAYFLIVQDLVNWSRQNGIPVGPGRGSAAGSLVSYVLDITTIDPLRYDLLFERFLNPERVSMPDIDIDFCFEKRDRVIEYIISKYGADRVAQIITFGTMAARAAIRDVGRALDVPYGQVDRIAKMVPAELGVSLERALEISPDLFTAYQSDYNTRNILDIAQAIEGMPR
HASIHAAGVVIGRQSLSEILPLQKTPEGHVLTQFTKETVEDIGLLKMDILGLRTLTVIDRALEIIKKTRGEDIDISSIPLDDEAVYKLLSAGDTAGVFQLESDGLRRLLCEMKPDRFEDIIAVIALYRPGPLGSGMVEDFINRKNGRQEIEYIDPLLEDILKETYGVILYQEQVMRVASELADFTMGEADVLRRAMGKKKAEELMAQRDKFIAGAARKGIGLATASHLFDLMESFAGYGFNKSHSAAYALISY
QTAYLKAHYPVEYLCAFLSSVIDNQDKVVSYIKECRRLGIKVLPPDINESYENFSVARDAIRFGLGAIKNVGQNAVKNIVEARKQGLYTSLFDFCRRVDLGQLNKRMLENLILAGCFDSLDFSRKGALSIMEECVNLSLAIKQNECSQQGSLFGDEMEMVEEPIIKLKGEYEPRERLLKEKEVLGFFVSESPLDEFRSLLPLLSTHCLEDINLWEEESYVRVAGIVVNLSRRVSRKGESYARFFLEDLGGRIEVL
VFPSAYRKNGDRLEADRAVIVEGYFDRREEQPKIALRKTGPIPESLREMHLRLAGNGNGEMDRNKLVKLMQKYPGDIEVFLHLPGRRLLVLNEKFNVSPSQDLKQELAAIYGPQNVWFN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02093_Cys-tRNA(Pro)/Cys-tRNA(Cys)_deacylase_YbaK
MDEIERVRLYLSEKNPELKIIVLEEDTSTAPLAAQALGTEVGQIAKSILFKSNGDKYFMIVAAGDVKMDNKALKQLLGSRPRMANAEEVLAVTGFNVGGVCPFALPNPIPIFLDESLKRYDVVYAAAGTANTALPISYEELMRLTGGSPCRVARDN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02094_Phosphoglycolate_phosphatase
VFKAVLFDLDGTLLNIDMDFFLQKYFARMQKMALEAGYSDSKGLVEQVFKSTGVMISDRNPECSNEEIFMRDFFSNWRYPEKDFREFFECFYEREFPLLEPYCKPFAGVPEMMEKLFDQDLKVVVATNAVFPLTALQQRLNWAGVGHFDYDLITSYEIMHFCKPHQEYYQEVAEVIGVKPEECLMIGNDVGEDLPAGKIGMKTFLVEDMLIDRGVGLSPDWRGKLSDLFSFMEKI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02095_Carboxymuconolactone_decarboxylase_family_protein
MATALPWFVEQYKEKDPEYFALLEGSLSGAVNTQRLDARTRYLILLALDVLKGTAEGVKVLSRQAREAGASEEEIREAIRLAYFVNSMDLIKTAVNAF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02096_hypothetical_protein
MFFTFLNKEKADSLDISALIKYSPREVLYYYYDSAIRIPWEGYWKIKELAAASGKAANPIKEWLELFEQELNADADLSSLNDNEFIDSIGPYYYLPGNTRFYFDKNFRNPVDMVSSENLASLAALATILPLNNEIQANCKIKKAKRKATKSKDELLKDINLCLTSLREIERLNKQINYWEKILEQRYFLREREDLFPAEPDSLPQKPEKPAEIEVSDNVLPFSRLLSRQKKQHNLDLNHYNHEIKVYFIRYREYEK
ACDRYKEALENWPEYHQLFLDNCLNDIKKAEEKLNTARQNRQTYSEVIQKSMVHSAYQDIRTLELFKYYLKTGRANELQDCMNIFEEERNWTEIKASQERIENTIHFLQSANPDTHFADEHINLFLNHFQEKTGDLAKVGV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02097_rhomboid_family_protease_GlpG
MIPLRDSTPSNTFPLITVTIIALNLAIFFYESSLGLEGMAKLFSVFGLTPLNYSQGYVPFLAYLPFLTSMFLHGSWMHVIGNMWILWLFGDNLEDRMGRGHFILFYLSCGILAALTHYFVNPLSSVPVVGASGAVAGVMGAYFLLFKKARVLTFIPPFFLFNLPAWIYLGFWALTQIWCGTASIFFSDACGAIAFWAHIGGFLAGMVLYKLFLKKELPLYTV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02098_hypothetical_protein
MIMLGDEDLIFLERVKANLRGQTNIWILVWVLLLLNVFTIIILLWTFSLVILFIFLLLALVGIKVLKSWANVEDIQQELVGSKEAQELMQGVKHIGEEIFDQEVQKFSRPLVNSIYQDFSRSLSWLWEEKDVFIERTEGMILELKSIPALIVSLNEEKGKLIKNLLNNIEIISSLLNDLKITRGISLKEMEQFLKEKLEDLRSTMLKEKDIFYDYVYKLLLAQIRNREEIENEEEFNLEEYFNVNKLGEQFALNLEKSL
ETRTMAFQDGIIRDMEDISADVVGKMQNCTLQLMNSFSEIHQILSRLLDESENEDQMLLQRLNQCCIKIAKLKDEAEEVMLTLAWQDILVEKRWGEIENQLLAIREQVNQNVEEDVIEYIKNFLAEEIPSFGAEMQNRDKAVFAKALVDAEIYQLYSGNKLSEVIRDGSYPLLMFIEPVDYLVRRNIRVTQEGLNRRRSIDLRNVSDEYEKLFQRVIEALESQNRELVQYIKDLFPRSFYSYCNNPYLKQ
RPENLNQAAWALFIDLLDDEYDNSGFYLVGILLVIHQIRNKYIHPFKALPRDLEKETELDYMRNCAIKATDILLSKQNQAVSKADSA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02099_Acetyl-CoA_acetyltransferase
MAREVVLVGACRTPVGTFGGTIKDVGSADLGALVMGETIKRAGIKAEQIDEVIFGCVLQAGLGQNVARQCMIKAGIPKEVTAFTINKVCGSGLRAVSLAAQIIKAGDADIIMAGGTENMDKAPFLLPNARWGYRMSMPKGDLVDEMVFGGLFDIFNGYHMGITAENVNEMYGITREEQDAFGFRSQELAAKAIESGRFKDEIVPVVIKGKKGDIVFDTDEHPRKSTPEAMAKLAPAFKKGGSVTA
GNASGINDGAAAVIVMSKEKADELGIKPMAKVVSYASGGVDPSVMGLGPIPASRKALEKAGLTVDDIDLIEANEAFAAQSIAVGRDLGWSDKMEKVNVNGGAIALGHPIGASGARILVTLLYEMQKRGSKKGLATLCIGGGQGTALIVEAI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02100_Acyl-CoA_dehydrogenase
LPHDNYLYQTRDIKFQIKEWLDIDKILSLDAYKDYYGADDFDAICDVNYKICRDVICPANKDSDEIGMKHVGGNEKAVISPDVFKTVYNTVIEAGMGPGFGDRQVEGRMPLYWYAPILEMQTGASPAIVMLWCLTQGATTVLQYNLSQELQERFLPKMYSGEWGGSMCLTEPGAGSEVGAVTTRCFPTDTPGLWKIKGQKCFITTGDWDGVENIIHLVLAKDPDAKPGTAGISCLVVPKFWV
NEDGSLGAWNDVTTTGIEHKLGIHGSATCSLAFGENDNCYGWMIGDGPVDGRGKGMAQMFQMMNEERINTGIFSLGAFGAAYYAALDYAKARVQSKKSTDPKGPSVRIIEHEDVRRMLLLQKSVMEACRALLYSSYYYIDLSKEAATEEERELAEDFFMIQNPLGKAYISDMAWQMCAEAIQVHGGYGFMEEYAPASLARDCKIYSLWEGTNFIQSQDFTGRKFTMKKGEPFKKWLAEIGDFIA
NKKTPEFAAEFAMMERAFASFNSIVDMNAAWTTTNKQLKQLFATRIMHAAARVICGKLMLDQGLLAASKLAELGDSHFDANFYKGKIASVKFYIMNVVPEIFGTEEAMKAADTSAIDCPEDAFM*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02101_Nif-specific_regulatory_protein
MKVYEVMNPRLLPLRTRQTIGEVSRLFIDFSLDASPVLNEEQELVGLITKNRLLQVLSQESPAIEVQDIMLTDPITIAYDDDVPDIRKQKFTCRPVMRNGQLVGMLYFSDILVALTLEIQKGKKEIEAAIDAVYNPVIEIDNDFRIKIFNRQASRLLGIDMEEARGANAHDLLGGTEVLDSLIHGNHKPLPVNKLVIGDRSFLPYRNDVVQDGNVIGSVLVLREISEFEELVRQSQYTQKLNRELDAIFESSF
DGLYVTDGQAITLRLNKGFERITGVTAAECVGRHMDDLVKEGKFSRSGTLLALEKKERVTISLVSMNDNELLVTSNPIFDEEGNIILVVTNVRDITELNELQRKLEQVEGLTQLYRSQLEQIKLQTSRQLVFNSTKMKELLDLVLRVTGVDSTVLIQGESGVGKELIAEIIHSSSNRKDGPLIKVNCGAIPENLLESELFGYEAGAFTGASKSGKVGLFELAQGGILFLDEIGELPLNLQVKLLRFLQDKE
MLRVGGEQPITVDVRILAGTNRNLVEMIANHQFRLDLYYRLNVIPIFVPPLRERPEDVPVLANYFLNAFNDKYQMNKRLHKSVIDVLMEYHWPGNVRELENLMERMVVTSINNIISMQDLPASFKVPRLKLDNEQDLLPLRQAVENTERELLEAAFARFRSSYQVAAALQVNQSTVIRKAAKYGIKRQDGRS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02102_H(2)O-forming_NADH_oxidase
MKALEIKENVFYVGVQDYGLRVFDIVMRTEYGTSYNAYLVKGREKTVLIETVKDKFFEEYIKDLQEIVKLSEIDYLIMNHTEPDHSGSVEKLLELIPGLTILGSQTAIRFLKEISNKNFSSRELNHGDELDLGGKTLRFISAPFLHWPDSMYSYLPEDKILFTCDSFGSHYADERVFNDLIDFDFTDAYKYYFDMIMGPFKPYVLEALEKIKDLEFDIICPGHGPVLRQNLDYYIELYRQWSTPVEVADGEKK
PSIVLAYVTAYGYTEMIADSLLEGISMMGDFDIKRYNLVEGGLEEALQSIEQADGLLVGSPTINGDALPPIWDLITRLSPITHSDKIALAFGAYGWSGEAVPSIESRLNALRMKVLPGFRVNFKPSARQLEDAFSLGMEFARAVMEKGQDKSKIRWRCLVCGHIHVGEEPPAICPACGVGPENFVQMPLEDEFLNDTSEHFVIIGSGIAALSAAQAIRQRNRTAAITMLTEEEALPYYRPALSDFLSEDLPD
KRLYVFDAAWYQENAIEVKTGFKVNSIDTAARTVSGDNGENLTYNKLIVASGARSNIPPFPGVEKEGVFALRNLKDAIKLKEAIKTSKKAVVIGGGILGLEAVWEMVSAGLEVAVVEFGERLMPRQLDDSSSARLADIIRSKGVQLYLGKATEEILGEARASGVRLNDGQVLEADLVLLSTGVKPNVELAQEAGLEIKQGIVVDEKMRSSAPDVYAAGDVAQHGERMIGLWPVAMEMGRIAGSAAAG
DWLEYKEPRISTMLVAFDKEIFSIGEVNLPPEECRVVEVKDPIEDYYKKSFIKDGVLVGEIIIASRVDSSESMQNLGRDKSGKQRHNRWKCRICGYIHEGPEPPDICPVCGAPKDMFDPID*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02103_hypothetical_protein
MPYIGIIGERRIFLNLHIFRAFPIMYIGSLNGRKLFKGGYDNEGTGN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02104_Calcium-transporting_ATPase
LIPYTANNEELLNHLQVNPDKGLSSTEASKRLAEYGENKLQAKKKKSMLQRFWEQFYDVMILILILAAAISFVVACYEGEGFYEPVLILLIVVLNAILGVVQESRAEKALESLQELSAPNARVMRDGKESIIEASFLVPGDIIKLEAGDSVPADARLIHSNSLKSEESALTGESVPSEKDAAAEVAANAPLGDRFNMVYAGCSITYGNARAVITATGMNTEIGKIARLLDAANDRQTPLQHRLAVLGKYLGLL
ALGICAVIFIIGLIDGMKVMEIFMIAVALAVSAIPEGLPAIVTIVLAIGVQRMVKKNAIIRRLPAVETLGSASVICSDKTGTLTQNQMTLVKALADGASVLEDIGESNSAVIKKLLQYAALCCDGTVEFEDGKERHIGDPTETSIVLAAHKNHLPKDELNRLYPRLAELPFDSERKLMTTVNRIDGKYMVIVKGAFDVLAARCIAGDLEAARRFNNEMSRQALRVLAVAYKEIETLPETASSEELEKDLIFMGL
LGMIDPPRPEAREAVAVCQRAGIKPVMITGDHVETASAIAKDLGIMLEGDQAITGSELANLSASELDEQVRQISVYARVSPEDKIRIVRAWQHQGEIVSMTGDGVNDAPALKAADIGCAMGITGTDVAKGAADMILTDDNFATIVDAVKEGRGIYDNIKKTVGFLLGTNVGEVLAVFMAMILWKASPFLAMQLLLINLVTDGLPAIALGLEPVESDVMERKPKPKEESIFAHGMGTRIILQGAMFAL
LTLIGFFMVWQSTGDIVAGRSMAFLVMALSQVIHSFNMRSSHSLFKTGIFTNRYLNGAAFISLALLALVAFLPPVAFAFGLTQLSAVMYFYALGLALVPVLVLEFSKAFGLVKHQA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02105_hypothetical_protein
MFIGYNINQLFIAFIAPCSAPRAEVAGWRWDIIKMHGVILFTRDILGALLRCSAGNNSL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02106_Glycosyl_transferase_family_2
LQMHYSTNTVRLNRDKLHMRQQGVSIITCTNRPECRDNILANFFRQDFSPKELLIILNSNSMNLREWRMWTAGFPAVRVFQVDESQSQGACLNYALNYINMGYAAKFDDDDYYAPGYLQEMEVFPVSGAHVVGKSSWFIYFENSQILAIFNPNHENSHEEYLTGASLVIKREVFQEVKFRDFSVGEDLWFLKDCMEKGIVIYSSSRFNFVGIRRPNPESHTWQESEEQIMPRCEFAAHTADYRPLII
R*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02107_hypothetical_protein
LQVKVSEFVGESRRSWQDAVENAVSEASRDVNNISGVEVVNWTANCADNKIVEYKANIRIAYLG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02108_stage_V_sporulation_protein_AC
VNTPDPKRWKKIEVEEYENLVQQTKPKPPLLKHCIWAFIVGGLICLLAQLIMNYLLNQGIGKVDASSYTSVIMIFLGAFLTGIGIYDELGKKAGAGSIVPITGFANAIVASAMEFKREGYIFGVGARIFTVAGPTLLFGFVVAVLIGLIKVFLSS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02109_Stage_V_sporulation_protein_AD
MPAKKKRGAQTLVFDKPPVITSWASIAGPKEGQGPWGQDFDWSMEDYLFGEESWEKAENKMLRETVKKALNKRNFDEADAEILMAGDLLNQLVSSNYAARELGIPFLGLYGACSTMAEALLLAAILVDGEFFERVIAAACSHHYTAERQFRFPTEQGVQKTPSSQWTATAAGAVLLEPVGTGPRITAVSIGKVIDMDQKDISDMGSAMAPAAAHTIKTHFNDLNRSSDYYDLIVTGDLGKVGM
AITRELFIKDGLQPEPNYSDCGVLLYDDFQEVNAGGSGCGCSACILCGPLLKKMTAGEINKLLFVATGALMSPITSFQGESIPAIAHAVAIEN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02110_stage_V_sporulation_protein_AE
MVPLYMAFLIGGLLCLLGQLIMDLTRASITPGHILVGYISGGAVLSGLGLYEPLVKIGGAGATIPLSGFGHLLTQGTLKAVEQKGLLGAFSGGVEAAAAGITAAVVFGYLAAVLFNPKG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02111_Spore_germination_protein_B1
LFKKGPHLYLGKDYDINLDIMKKELAEGENFDLIVREVRVGGRKAAFICLDGFVKDDIMTECMKSLLALKKEVFLSSTVKSILEKGVPYVELTTENKIDELLYSVLSGSVLFIIDGSEEAFIIDPRTYPARNPEEPDIERVVRGSRDGFTETIVFNTALLRRRVRDPKLRIELLQAGKRSKTDICVCYLKDVADPALVEDIKSKISGIAIDALPMAEKSVEELIMPGNWWNPFPKVRYTERPDVAAVHLLEGHVL
VMVDTSPSVMILPVTFFHHLQHAEEYRQSPSVGVYIRWVRFIAVLASIIITPLWLLLALSPEILPASLKFIGPKEVGNVPIFLQFVIAEISLDMMRMAAIHTPSPLATALGVIAALLIGDVAVKIGLLVPEVILYTAMVAVGSYCTPSYEMAMANRLARFFILLGTGFFRLPGFIVASILVILLAAFTKSLKVPYLWPLIPFNYRALKGILVRSPVPIQNLRPEILNTQDQSRQPSPAFKRRREEK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02112_hypothetical_protein
MSRVGIPRSLFYYYYYPLWKSFFLDLGVEVLTSSPSNRNTVERGIELAVDETCFPIKVYLGHVAELCREEPDYLFVPRLVSVEARSYICPKFMGLPDMVRALIKDTPPLIDITVDLSRDEKCFKKDIIRVGRLFTRQVPKIQLAYQHGCEELRLCRSLASQGFTMEEAIKIWEGGAMEAERETDLNIGVLGHGYSLYDERISMNLVKRLRAMNCKVLLPEHLGSQEVEAEAATVPKRVFWTLGRKMLGSAL
HLSQREDVDGIIYLACFGCGPDSLVGEIIERKIRDKKPFILLTVDEHSGEAGIITRLEAFCDMLRRRRNCGSESKLSPYGASLHSFENTV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02113_2-hydroxyglutaryl-CoA_dehydratase,_D-component
VKVSFPHMGHLYIPLKTLFKGLKLEVIAPPPISQKTMELGVKYSPEFACLPLKINMGNFIEALEQGADTIVMAGGWGPCRFGYYAQVEREILQELGYDFKMVVLEAPDSRISELLLQLKALGEKASVREAYKAIRFAWKKLVAIEKLEKTLEYCLPRAIDKNYMETVFERALQAIDEAESQQEVEKIAQESLREMEKSPCKGAEVLKIGLVGEIYTILEPASNCHVARCLGRLDAQVSRSIYVSDWVNDHLF
GGYLRKSNHKQIIQSSRPYLNYEVGGHGRETVGSTVDFARRDYNGIIQIAPLTCMPEIVAQSILGKVSEELEIPCMTLYFDEHSGAAGVYTRLEAFVDMLQRKKNLSSSPLLLEARA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02114_2-hydroxyglutaryl-CoA_dehydratase_component_A
LNLYLGVDIGSVSSNFILLDQNGRLYRKLYLRTLGNPVKALKDGYASISDGLDKQHGKIRAVGSTGSGRHLAAVLLGADVVKNEITAHAVAASHLFPGAKTIIEIGGQDSKIIILRNNIVHDFAMNTVCAAGTGSFLDQQSARLNIPIQEFGDYAVKSGHPVRIAGRCGVFAESDMIHKQQMGFPVEDIIMGLCEALVRNYLNNVGKGKKIEEPVVFQGGVAANRGLAKAFEKILGLKINVPAHYEVMG
AIGAAILAREQIELSHSPTRFRGDNFVLEGNFTSNSHECSGCPNLCEVVCIKRDNEVLAYWGDRCKKWESSIKQPREKLKVV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02115_UDP-N-acetyl-D-glucosamine_6-dehydrogenase
MNKLYGKMRFCFYRQERRDVKQVIVMGLGYIGLPTAVILAANAYRVTGVDRDIKLLQELEQGKIHIEEPNLNLLFQQVRSEKKLRFSPQPENADIFIIAVPTPARADKSCDMTNVLQAVESILPQLQTGNLLIIESTIPPLSCEEIIKPLLEEAGHKVGENLFLAFCPERVLPGDIVRELLVNNRVIGGFTRRCAQEAAKFYGSFLQGEISLSDLKTAEMTKLLENTFRDVNIALVNEMTRICSHLGIDVLEVI
RLANKHPRVKLLQPGPGVGGHCLAVDPYFIVEKAPSLTPLIKTAREVNASMPAFIVEKVQNLVAGMDKPHIAVFGLSYKGNIGDLRESPAWEIVKALRQEGYSIKVFDPHVRSVSGENSAPAAVKDSDLILILTEHDEFRHLDYDELAADMRTPLVFDTRNIIPAAANPFSRIRLCHLGNT*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02116_dTDP-glucose_4,6-dehydratase
MKILVTGGKGVVGSSLVRELRAQGEQVWACDLFHSHENNYYRCDISKFRQLQILFEQEEFDLVYHLAAEFGRWNGEDYYEQMWTSNAVGTKNLLRLQEQFGFRMIFSSSSEVYGDYDGIMAEEVMNEVAIKQMNDYAISKWANEMQILNSALMAGTQTVRVRLFNTYGPGEFYAPYRSALCVFIYRALHSLPYTVYRQHQRTSLYIDDCIRALASIPDNFQAGEVYNIAGIELHDMKSVSDMILD
YLGQDDSLVTYKDEENFTTRVKKPDISKAVKELNYQPKTLLEEGIPATIQWMRETYRLGK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02117_Chondroitin_polymerase
LKALVSIIIPSLLRADLLKWNLFSLAQQKIPYPFETIVLNDGIPDDTERVCREYEQSLNLKYFFSGKRNLDGNIKWRGQGFAMNIGARIAAGSILILCDAEMYHLNDTVFYLAEPLLQKPNLIAIPGLGKNDWSGEFLRHIEERQGKYEPQALELCDDLRIRLPFLMAVSRSEFYSIGGFDEDFVGVWYEDDDLVGRLQMNACSYFETGAETVHLFHPRDKGKGVEERIALNEKLYFEKMSQIVRNQGRE
WGKLE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02118_hypothetical_protein
VQMKLLVISGDFRQYLDSSFHSLMTALADLLELYLWHESGSIKDILPLLPSTPDFVLLNEPGEINSPVIDELSSLSIPYAVYLHDLHHDSCKEALQDKKLCWVFTRYRDRFRDWYPEWQNRMSWLPHHIDSNIFKDYHLPKTIDYLMMGALHEYIYSLRYKIREKMTEKPGFVYHEHPGYKHFSPAEMKKLFVGPNYAREINRAKLFLSCDSVYKYPLLKYFEVLACNTLLLAPSSPELLDLGFVPGVHF
VEIDELNFEEKAEYYLKHEKERKEIARQGYEMVREKHSSTRRAAQLLEMVEGILESYSSFPHSRPWLRTI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02120_Hydroxymethylpyrimidine/phosphomethylpyrimidine_kinase
LRKILTIAGSDSCAGAGIQADIKTIQALGAYALSVITAVTAQNTRQVTAVQEIEAQVIEKQLEAIFSDIRLDGIKIGMLGSAGTVQVVSKFLASFFQAGAFREKQLKNSLPLVVDPVMIAKSGDRLLEEEAVESLKKNLLPLASVITPNLMEAGALLGREVSSLEGMKEAGRELLEFGCEWAIVKGGHLKGEPVDVLANKDSLYWLRGRRVDTDCNHGTGCTFSAALATLMGQGWEVPAAAKRAKAYIE
YCLEHGFAIGEGVGIPHHFAAQRPWEPEALNDGSDASIKEEV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02121_Hydroxyethylthiazole_kinase
MLKYCAEIWDEVRSKRPLVHCITNYVTVNDVANIILASGASPAMVEYPAEASGFAPLASALYFNLGTLTGEQEAAMLEASWAAASRGVPIILDPVACGVIGRKVDLIERIKSLCKIQVLKGNAAEIKSLAGLAGQAQGVDSLDTGEGLAEACLQLAAEDKLIAAATGEVDIVAEENRYACILNGTPLFQSITGAGCMAGGVIAACLGAAPEEAWLASITGLLAFNLAGERAASQAGNRPGTFRTLLFDEL
FVLRGEELVKEGRLE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02122_Thiamine-phosphate_synthase
MINSDYSLYLVTDRGLLQGRSLLEEVRKAVKGGVSMVQLREKEAGSREFYELAQALQTELRDLGVPLLINDRLDIALAVDADGLHLGQEDLPLPVARSLLGREKIIGLSINKREEAWEGEKMGADYLGVSPVFATPTKADAPPATGLEFLASLRQEIKIPLVAIGGINKENLKMIKETGADGAAVISALMGASDIEGEARKLRQIWERS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02123_2-hydroxy-3-keto-5-methylthiopentenyl-1-phosphate_phosphatase
MGEKLIIFMDFDGTISREDVCNKMAARYAGRDWEEINRLWEEGVITTGECASRILSSMEVGAAELEAFFQAQEVDPGFSSFLDWVRKKQHLPIILSDGYDRYIKSILRGQGWEIEFYANKLYWNDGWRMESPYLDEVCPQCGVCKSKIIRERSLPGYLTVYIGDGYSDFCPAACCDIVFAKNELAGYCRKEGLTYYPYRDFHDILQQLPGIIRNKV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02124_Phosphomethylpyrimidine_synthase
MNYKTQKEAARKGIVTPEMKKVAEKEGVELKYLQEGLAAGKIALPANRNHLSLQAAAIGAGLKTKINVNLGISRDCSNMAEEMRKVEKALEMQADAIMDLSCHGKTQEFRKALLAISPAMIGTVPVYDAMGFLEKELSEITVAEFLQVVETHARDGVDFMTIHAGIRRSTLERLRQAPRLTSIVSRGGALLCTWMERNKAENPFYQYFDEVLDICREYDVALSLGDACRPGSINDASDACQLEELIT
LGDLTLRAWEKEVQVIIEGPGHMPLNEIEANVLLQKKLCHSAPFYVLGPLVSDIAPGYDHITSAIGGAIAAAAGADFLCYVTPAEHLRLPSLEDMAEGIIAARIAAHAADIAKGLPGASEWDWQMSKARAELDWESMFKLAIDPEKARRYRAESSPELEDSCTMCGQSCALRNMKNL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02125_Tryptophan_synthase_beta_chain
MSRDELTKIILPEDKIPKFWYNVQADMPNPLEPGLHPQTHQPLTPPDLEPIFARELILQEVSSERFIEIPREIRELYKQYRPSPLFRARRLEAALQSNCRIYYKYEGVSPVGSHKLNTALPQVYYNKVQGIKRVSTETGAGQWGTALSLACKHFGLEAMVYMVKVSFYQKPYRRSIMELYGGRCIPSPSNLTESGRQALAKDPETPGSLAIAISEAVEDAVTRDDTNYSLGSVLNHVCLHQSIIGQEVKMQ
MEMVDDYPDIIIGCCGGGSNFAGIAFPFIPDKLAGKNIRLIAVEPTACPTLTQGVYAYDYGDVAGFTPLMKMYTLGHDFIPSGIHAGGLRYHGESPLVSRLYHDKLIEAVAVKQNPTFEAAVLFAQTESIVPAPESAHAIRVAIDEALKAREEGVSRTIVFNLSGHGHLDLFSYDKYLSGETEDVEFSDAELQESLRNLPQI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02126_tRNA_(adenine(22)-N(1))-methyltransferase
MPNKRLLAISDSVIRGKAAADIGADHGLLACFLLEKDIVPRVIASEIKEGPFERLRKAVEKSPFGERMELRLGNGLEVLRPGEVATVIIAGMGGDNIAEILSRKWSHSASYRKFIFQPMTKAGVLRRELSQQGWPILEEKLVEEQQRIYLILSSCPGDNPYELTSLELDLGPIILRCDNPLKKRLLEDSLRKYRRVYQGLLQSKGIIQANSLEEYEKKIKTLEEIIHAS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02127_metal-binding_protein
MQARVKDIISIMEEHFPPWLAEAWDNSGLQLGSTNKAVKKVAVALDLDESILNQALELQVAMIITHHPLFFKPLKQINYESPVGCLIQRIVKAGISVYAAHSNLDAAEKGLNQILAELLGLQDIDTLGNSQKEELYKLVVFVPVSHCEEVRQAINGAGAGFIGNYSDCSFRVRGTGTFRPGAGTQPFLGQEGELEEADEFRLETVVRKRELAQVLQAMQEAHPYEEAAFDIFRLEQAGKGYSMGRCG
LLPEETKLGDYARQVKETLGLEAVRVVGDLNKVIRKVAIVSGSGASLIPGISRQGVELLVTGDLKYHEARDAEALGLSIIDAGHQGTEEIISAHLSRFLQKECQKRGMKVEFIPLYSGPCFKYL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02128_Cyclic_di-GMP_phosphodiesterase_response_regulator_RpfG
MLKIKTSNLKPGIKLGKDIYSYDSQLLLTNGSTITQEHLDNFARRNIEEVFILDESPRIKPEREFEDVYQDALEVVKSFMVGAMLGSPLDFQEIDKTVDFLREQAFDAIDLFRQMRLMKDKGEYLFTHSINVSLICMLLGRWLKCDQNTIRELGIAGLLHDLGKVFIENDILNKRGKLTEQEYEEIKKHTIRGYNFISGNPALNIEVANAALMHHERLDGSGYPSGLKGQINFYAAVVAVADVYDAITSAH
SYADKRSPYSAAEILWQESFGKLDARITKVFYDKITNFYVGNKVLLSNKKEGIVIYVDPSQPTRPIVMVDDEFYNLAIDRSITIQDIID*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02129_hypothetical_protein
VNKSELVKSLAEKAEITQKDAAKVLDALVDSIQQALAGGDKVQIIGFGSFEVRDRKERKVISPATGKEITVPATKVPAFKPGKSLKEAVAVKKKAAPAKAGGKKKTAKKK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02132_hypothetical_protein
VLAIFGSAGAGHGIWANPLVVLAIVVVSIYIFLKFCSWAKSKQLSAGVKKWVFIITGLGLVVFNVLYARGNAMVHESGDWSGATTALLASLVWVFIFAYALMTETKAE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02133_Na(+)-translocating_NADH-quinone_reductase_subunit_F
MEFWTLTGKNLWDSIMTSGMAATGACGGKGNCGQCKVRLEGEINEISDSERQHLLPEELRTGTRLACFCRVKAPLTVYLDPLALAIQDQAWLKSDSPVAFSAPVKNRQILIPGMEKDSPVPLLTRLARALPGIKLELSVDNLNRLAQIDRIGRPALELQALVFKEQAVKYIGRKKEKACGLALDIGSTSLFAAMLNLEDGEHLAISTKPNMQRVYGADILSRVLHCLENPDGLERLQQILLNNLSSMI
EEMLEETGTSPEHIYYLVLVGNPVMLHFLLGLNPAGFAQAPYAGIFCDEFTYPAAALGLPVNPEAEILLLPQVGGFVGADTVAAVLSLPDWRSSSFLLVDIGTNGEVVVGNRGKLWAASAAAGPAFEGGGISSGMIAGDGAIDKICLNPEGGLEYNLIGDSPARGLCGSAIIDITACLCQGAYIDSCGIITELAREKLRVRQGERGAEIILVEENESFRGAPVVFNQEDIRQVQLAKAALRTAIDVLMEEA
GLEYKKLERVYLAGAFGNYLNPHNAVDIGMIPPIKTDTIRNIGNAAAAGAIAALLSPDKQREAREIKEQVRYVELALYPDFQSLYLNKLNFDPTAK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02134_putative_enoyl-CoA_hydratase_echA8
VEYQNIIFSKENKIGIVQINRPEFMNALTMELLAELAHVFEEMEKDEEINAVVLTGVEKAFSAGFDMPSVMSLGENKSAGLKIIEESFLNILKFPLPVIAAVSGPALAAGFDLMVMADIRVMSETAKVGQPEIRWALTPLSDPLWKIIGMGRAKEVTMTGRIYGAEEAREMGLANYVVPRESYLEEAKKLAGRIAAFEREALKANKEQTNRVPGMEVQSAIRTQLWTFRNFVGSEAMCSRMQAFLESNKN
KG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02135_(S)-1-Phenylethanol_dehydrogenase
MKLKGKVAVITGGGTGIGRAAAIALAGEGARVAVMGRRPGPLNETVDIIREAGGEGLAIPSDVTVIEDIEKARDKVRETYGRLDILVNNAGSALFKPFMKTSLEDFDRIYQVDLRSVFAVSQQMLPLMLEGGEGSIINISSILGVLGGKSSSAYCAMKGGVVQLTRALAAELGPEVRVNCLCPSHIITPMMEDELSRIETKGKMDKLTKMFPMKRLAYPEDMTGSILFYASDDSKWLTGNILMIDGGLS
CYI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02136_hypothetical_protein
MNMNRQGDGSFACQSRPLSREVTVLNYRVIVES*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02137_hypothetical_protein
MADIIPFRGLRYNPEKISNLASVVTPPYDIIDESAQARYYAENPANVIRLELGLIFPQDSSSNNRYTRAAQYLEKWQEDQTLLAEEKAALYLYQQEFNFRGEKVVRTGFVCGLKLEPYEKGNILPHEETLSKPKADRLQLMRATNSNFSSIFGLYSDEQKEAEQLLLAEVKEQAPDINIIDEAGETHKIWVIKNEELIERIVALLADRPVYIADGHHRYETALEYYHEMKEQGLQGYDYVMATLVNVFDEG
LVVLPTHRLVGNIPGFKLDAFMNRLADLFEIELYKDKNIGAFMQELESKGKKHRVFGMYSGKDIFFLELKNPEQASKLLPDNKSAAWEKLDVALLDNIILDQLLGINEQKRRSQENLAYTRSEEWLMEQIDNRNYQLGFLLNPTRVEEIIAVAQARDKMPQKSTYFYPKLITGLIINKMR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02138_Histidinol-phosphatase
MLLDYHIHALAHGEYDYSESWLRLFAENARRKRLAEIGFSEHDEYLPRIKPDKLKRLQEDFPELKIKLGLEVDYHPGREGEIQRMLVNSNFDYDYIIGSVHFIDGWGFDHPDFKDQFATRDIDDIYADYFTLLNQAVKSRLFDIVGHLDLIKIWGHRPLKKPISAYVEPVLNTIKAAGMVVEINSSGLRKAVGEIYPARQILELMLALNIPITLGSDAHHPSQLGEGLEEAAGLAQEVGYRQLVTFSGRKR
QLVEI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02139_putative_calcium/sodium:proton_antiporter
MSSIGILILSLGIILLGAEVFVNGVEWLGEKLNLSEGAVGSVLAAVGTALPETLIPVIAIVFGHGKEGHDIGIGAILGAPLMLSTLAMFVTGLAVVFFSRRRIKGSKVQADYSSMTRDLSFFIIVFAAAIITGTMPPALRHWQLIIAGFMVLSYFLYVYVMISEERDLDSSYELPSCYFARKEKSPRLSLVIGQVLFALLLIIIGADMFVGAVKEVAVMYQVPAFVLALIITPIATELPEKFNSVIWISREKDSLALGNIT
GAMVFQSSLIPALGIFLTDWQLSGGAFLSALLALAAAGILYIELLRKKHITAGTLLLMGVFYGIFLVGVFEGIIR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02140_hypothetical_protein
MSNVNSYDKAHELARVITKSEPYLNYCQAKKEVEKKPEWTSKLLELRQRQAEFNRAQILGNDVPKETVQELSLEFARINQIKEIAEFLRAETAFVQMFNDIQEIINKAIKSGLEA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02141_NADP-reducing_hydrogenase_subunit_HndA
VHFCSKNKRPEEKSMLDAQLDLSPVLKIIEEKRHEKGSLIAILQQAQEIYGYLPLSVLKCIARELGIKPAKVYGIATFYTQFRLQPTGKYQIMLCQGTACHVNGSERIESTICQELKIKRGETTPDGLFSLESAACLGCCSLAPVMMINGQAYGPLSAEKAVAIIRKIKAAESLSLVGGEAQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02142_NADP-reducing_hydrogenase_subunit_HndC
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RILGSDFSFDISIQQGAGAFVCGEETALIASLEGERGMPRLKPPYPSESGLWGYPSSINNVETLANVPWIIRNGGEAFAALGSRESKGTKVFALAGKIKRGGLVEVPMGTTLREIIYGIGGGVKAGRRIKAVQMGGPSGGCIPAELLDIPVDYQSLNNTGAIMGSGGMVVLDESSCMVDLARFFLDFTQKESCGKCVQCRIGTKRMLEILERICRGAGREGDIELLEELSAHISENSLCGLGQSAPNPVLTT
IRYFRDEYEAHIREKRCPAKQCQELLKYTIDPDRCMGCGLCVYACPADCIKGGENNQPYYIEQENCSKCGACLDICPERFAAVRVPGT*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02143_Glutamate_synthase_[NADPH]_small_chain
MITLTINDREIKAAAGQTILQAARGNGIEIPTLCYDERVKPFASCGICVVEVAGSKKLLRSCATEVQEGMQVQTESPRVRQSRKLTLEMLLSDHRGDCCAPCRQACPADTDCQAYVGLIANGQFKEAMAVLKEYYPLPASIGLICPHPCESACRRGLVEEPVSMAALKAFVGRYYLEEQKQENDDESGADSSMAEIKAPSGKKVAVVGAGPAGLTVAYFLAREGHQIEVFEAMPAAGGMLRYGIPDY
RLPKKLLEQEIDLIARLGVKFFFNTRLGQDIFLEQLRENYDAVFLGIGAWVSSKIGCAGEETRGVLGGIEFLRAVASREPVLMGERIAIIGGGNTAMDAARTAIRLGAAEVMVLYRRSRAEMPADESEIVEAEEEGIIFKFLLAPKEIIEEDGRVAAIRMQKMQLGEADASGRRRPEPTGEEEIIAVDTVIAAIGQQVDLGGLEKLELSRWNTIASNPLSFMSSMEGIFAGGDGVTGPGIAIEAIAQGRKAAQA
MNAYLQGEKLPDNNSPYRMSREVRAEDLAGIKKEARIEPPSTSPERRLRSFAEVKAVFTPEEALREAGRCLECGCTAFYECKLLSYAGRYEVKPQRLAGETHHHSSEYHHPFLDWDTDKCILCGLCVRICDEVMGITALGLVNRGFGTVVMPEWEWGNDLENSLCNCCGECAAVCPTGALSQRKRCLY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02144_Putative_peptidyl-prolyl_cis-trans_isomerase_Cbf2_precursor
MKKTKLAMLVILGLLLLLPGCNDKKASPSIAEVNSEIITQEQYDKACQNIKQAFEKQNPTQSGDKADSSGKIDPEMEKRLQEQAFDSLVMQALLRQDAEKRGIKIKEKEIDVTIDSFKANLAAEGKDAYQKFLQENNLSEKELREEARMQLLVNQLQKKISFSIAIEEGELQQYYQENIASYQEAAGMQISHILVETEKDARELLSKLQQGADFAQLAQEHSSCASKAQGGYLGVVNENSNYVPEFKTA
ALKLKAGEITQEPVKSDFGYHIIKAGQLQPTTTKSFDEVKNQIRMQLEKEKENTLFSQYMEDLRQQAQIKDHRKS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02145_Ferric_uptake_regulation_protein
VFGKSINNKLKDNDYRLTGQRTAILEVMMDNQGRHLSAEEVLVQAREKQPNIGIATVYRTLEKLAAIDILYKSMFNDDKYRYEIKDDHSEHHHHHIVCLACGKIAELEDDLLCSLEGQLETQGFEVVDHELKFFVYCPVCREKKNK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02146_Ferrous_iron_transport_protein_B
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TPVLLLLAYLAFVLLLKFVAISEGPITALLEPLNQTIESFLSNILPPGMLNTILSKAVPEGLIIPFSIIMPAMLMVACIMSLLEDSGLLPRYSVALERAGSFFGISGEAIIPLSLGFGCRTPAIMASRIMPTASQRFIVTLLSIVVPCAATLGILASVIAAFQASLPVIAGTMFAVLMLMGFILSRLMPREDAFIYELPPLRFPLWSNVGKKVKMRFSGFFTEVLPLLLIMSIAVRALLESGFLEIFRTMEAFTRFLFGIPAEA
FIAVLVTIFQRYLAPLVLLNLDLTPREATIAISMIALSLPCLPAMVMTVREIGWSGLTKILGLGFLTSCSVGIMLNLIL*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02148_antiporter_inner_membrane_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02150_FeS_cluster_assembly_protein_SufB
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MDKARIKSIPQLEAEDANAVLTHEAAIGKIAGEQLIKLMSLGLSEQEAIDTILEGFLR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02151_CysJI_operon_transcriptional_activator
MNLNLFKTYVRVVETKNLSKTAEEFGLSQPAVTKQIQSLEDYYGVLLLERAGRRLKPTEAGETLYQYAREIIKLLEKTDNIMETVVESKKGNLYLGASTIPGQYILPDYIKRFSDSFPYINITLDIGDTEKIFKKVAERELDIGLVGGWLSNRKVEGFQWLQDELLLVVPENHHLMGRDEVSIEELLHEKWIFREKGSGTRKATEELLNNHGIKKEDLHVGMEAGSTEAVLASVESGMGISIVSNWAIKKT
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02152_pyruvoyl-dependent_arginine_decarboxylase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02153_Spermidine_synthase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02156_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02157_hypothetical_protein
MPENRDTKKKRVRIDDPEELKKIEQTRLKNNLIGIAILLFMLVVGLFYRGC*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02158_Tryptophan--tRNA_ligase_2
MRMNNNKKKRILTGDRPTGSLHLGHYVGSLANRVKLQDEYDSYIIADVQALTTHWEKDENLSRDVFQIATDYLAAGIKPEISTIFIQSMIPEIHELTMYYSMFTTVNVLRHNPTIKTEAAQHGLSDMPYGFLGYPVSQAADITIFKADLVPVGEDQIPHIELSRKIVRRFNELYEPVLVEPQVLVGDVPRLIGLDGKDKMSKSLNNAIFLADSADEVKQKVWDAVTDPARIRKTDLGHPEVCTVYAY
HQVFNKAEIEEVEADCRQGRIGCVQCKKKLTAKLNELLEPMRERRQSYLEQPELVKDILQEGTRRAHAVAKETMLDVRSAMKINYFG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02159_hypothetical_protein
MRFRVVVLFLFLLVFFYPNANDLALAAEKQEKKAVILVMDYIDVADLCQADTPNLHRLVAKSATALINIRTKSRLPSSSYLSLASGNRVGSISNAEFSFNGDEEVRELPNIFIDRDSPPSAGKLYQLFTGLPAPPEGLVNLYIEPLKKYAGKHNPSFTPGQLAALAEDCGLKTAALGNADTINSVDRNIVLLAMNEAGQVDEGDVSANLLEKDKLSLAGVRSRQQILLDKIDDSLKKADIIFVDLGDSSRVE
KSRTNCADEVLVRHRKHAIESNDELLGRLLPRLDLQKTMLVILVPNPHKDMVLAGNFGLTAFMYQPGKEAGLLTSSTTRRSGLVNSSDFLPSILAFFNPESIYQNSSMKVVPATDNSLEKLERDLGFFVRLRAARSPLHYSFIALAFLSIIGVACLACNIRTKWKSFWLFLFYTSLSMPLVFMFLSYSSYPSISWSIIIALAASMLLALLLQLIFRASANAFLFLTAAVALLTLADGLRGSPLMILSPLGSDAIAG
GRFYGIGNDYMGILIASSVIALSLLVAKLRLSSRGRMLIALPSLLLLSFAIGHPAYGANVGGLITALVTTGVLVIYLLEQRLHFKQLLIGVLAVLGVLLTAFLDNWLNPNPSHAGKTIKLLISNDPGIFLSIIRTKLGILGSTIYHSAWSIVLLLGIIVLACIWRKKPLQALKEAKPEVLPISNTLLIAAATVFLVNDTGVIAAALIFLYLLSYLGILLAEGGDTGGGFFCMPRSSETSPSVPKKIIIGGLLLVCVFGCAK
PVQAAETERKPEPRQVIIYMIDKLSINDLSPQTTPYLWKLQEQGGIGLLNTITGGERTSINGCCTISAGKLAVGSSNAHLNYEAGEVLEGEPAADIFARNTGIVPEKDNILISSINVIEKNNSQRNLGQAGRLGDSIHALGLKTAVIGNSDRPGYPNRSGCLLLMDSRGIVDSGAIGPQMCRPGGFNESLLPLQSDYDKMRGQFSILRDNNDVILLEFGDLSRLESMYSSFSLARYREERKNILQRIDGSIRQI
QEELLPGDNFIYIISPSPSRNSYIPSALLTPVIIIKPGFEGTLTSYSTRRTGIVLTTSLQNSILNCLNPERKENIFATAANDSFQQLKKLNHREVFNYVYQAIILSSFIALILLLLLLACWLSLRSPDNPLRLPILGFILCLPWSMLLVGLFTFTRPLYFFLLLLLLNLFLTIAGFLLARILRLNPLFLIISATITIAWDLMSKGSLIANSVMSYRVISGARYYGLGNEYMGVLIGATIVLATILILSKSFTSKNRLFSALIFAAIIFLI
AYPLFGINVGGAITASIGLGYSYLALSRGYIRISWKKIVFILVLTALLLLLMALIDLRQPLEVQSHLGHSIALIMNGGWVEIINIISRKVQMQLRVISYGGWGWILLAGMLLVSFLLFRPRRRIKAYSERQPLILQGLRGILLSSMVAILFNDSGITSAASMSLYFAVLFIYSLGLEPARSEKQA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02160_S-adenosylmethionine_decarboxylase_proenzyme_precursor
LQSLGRHVLAEIYGCRFEVLNDIKKVEDIMVNAALEAGAEIREFVFHKFSPQGVSGVVVISESHLAIHTWPELGYAALDVFTCGDRVDPWDACNYVAEMFSAGDMKASEVKRGLMEQPEERLVANM*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02161_Acetyl-CoA_acetyltransferase
MAEINEVVVVGMARTPIGRYLGGLASVRANDLAIIAANAAIERAGVDPGIIDEIVGATCLHAGNGSLPPRIIGMKVGLPVRSGCSMCVSQNCASGMRATEIACQNIMLGKTDISLVTAVESMSNIPYLLQQARSGYRMGDGKVQDAMLSDGLVCQLAGGHMGMTAENIAEKYGITREECDALALTSHQNAVKAVDEGIFDREIVPVVIKSKKGDKVISKDEHPIRGASLETMAKLPPAFKKGGVVTAA
NASGINDCAAAAVFMSKKKCEELGLKPLMKLAGICSEGVDAKVMGLGPAVAMPKVLKQAGWKYEDVEYWEVNEAFAAQVLGVVRMLKEEAGIELDFSKTNHNGSGIGLGHPVGATGLRIIVSMYYELERLGLTKGGASLCVGGGSAMASLWTRDI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02162_hypothetical_protein
MGIKYSFTRELRTELIDVDKVFKENLLPWWDDVYNYIKMLNEDFTWNQLPPLVYIVYRYLGLDRSISISMTNIFKTLYLANSIHFLVKDDKEGQKYDQDLQFAILIGDYMFGRMLKLLVEAGADKLVGLFAVMMAEINEGRVMERKLQADHKEVLQKTRGSMYATAFETAGQLSGMKGILLENCRQLGLNLGMSIELMNCDISREEVLLYIHEAERNYKILNQYQRMVNSNLEAVINEVHSLLCNI
DKVAVV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02163_3-octaprenyl-4-hydroxybenzoate_carboxy-lyase
MAYKDLQEFIQVLESAGELKRITVEVDPELEITEITDRVSKNYGPALLFEKAKGSDMPVLINAFGSEKRMALSLQVDKLDDLAAEIMGLLEIADSVPQSLLDKVKVLPKLAQLSSFLPRVVKNGACQEAVDLNPSLDKLPVLKCWPEDAGRFITLPQVYTKDPESGKRNVGMYRLQVYDGQSTGMHWHTHHDGAENYRKNCQRGQATEVAVALGGDPAITYAGTAPLPKDIDELIFAGFIRKKPV
ELVKCKTVDLEVPADAEIVIEGYVDPYERRIEGPFGDHTGYYSLADEYPVFHVKCITHKKNPVYPTTIVGKPPQEDCYMALATERIFLPLLKLQLPEVVDMHLPMEGVFHNCVLLSIKKSFPGHARKIMSSLWGMGQMMFAKFIIVVDEDVNVQNVSEVMWKVFNNVDPRRDTMIVEGPLDVLDHSAPLPLIGSKMGIDATKKWMSEGHTREWPKDIIMSPEIKEMVSRRWSEYGFE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02164_4-hydroxybenzoate_octaprenyltransferase
LNKIREFLNMVDFGHSLFALPFAYLGAFLAAQGMPSWSQLGWITLAMVSARTAALCLNRLIDRHIDRANPRTSDWTLAAGRLPLSLVWFLVFFFFILLFYSASRLNPLCLKLSPLAVLALWLYSYTKRFTWCCHLLLGMAIGLGPVGAWFAITGTPDWQPVILGMAVACWIAGFDSMYACQDIEFDRDHALYSIPARFGIKGALLFSAIFHIFTIVLLLLNGLILNLGLFYYSGVAFVAIILFYEHGIVKPG
DLSRVNFASFKINHYVGLIVFIMALLDIFL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02165_putative_aromatic_acid_decarboxylase
VPRYIVALTGASGAVYALRLLEELLKQDNSEIHLITSDAARIVMEQELGWDCQDSLPLSLQRYLPPGNISFYDNADIAAAPASGSFICDSMVVIPCTMASISAIAQGTSRTLLERAADVMLKERRPLFLVPRETPLNSIHLRNMLTLSEMGVSIIPAMPAFYHQPRTIEDMVSFVVGKVLDAMHIPHDLFQRYAGQIKK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02166_Heptaprenyl_diphosphate_synthase_component_2
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AQLLASPEACRNETEKIIDIIIDTDGIDYSYYTITRHFARKAQKQLAFLPELPVKKNLYNIADFILAREF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02167_Sec-independent_protein_translocase_protein_TatCd
VALLKDLTPEEKQTLIEHLEELRKSLIISIIAIIAAAVFCFYYNEEILSVIISPLSGLGEGLVVIGVTEAFFIKLKLAFYAGFALAFPIVAWAIWRFFKPALYPGERKYVYILLPVSVLLFSTGILFSYFGILPLVLKFFIYMQGPSLENMFTVERYVSFVTAFTIPFGLVFELPVVVFFLAKFGIIKAETLSKNRKYALLAIVVIAAALTPGPDPISQMLMAGPVYFLYEVSIIVAKMAKPRKKPEEESGEPREPEPEREEKPRK
PEEEKEGEEQATVDES*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02168_Sec-independent_protein_translocase_protein_TatAy
LFGLIGNFGPWELLLILVIVLIVVGPGKLPQVGKSLGSALQNFRKAKEEDFEELEEKKDK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02169_Siroheme_synthase
VSLKFILTKQGLKAILFPIYLDLEAKTGLIVGGGQVAERKIENLLDYGMNIRVVSPQARARIQEWAEQSIIQWQARDFCESDLQGVFLAFVATDNNSVNQAVVEACRKAGVLVNAVDDPPNCDFYVPSIVRRGSLVLAISTEGKSPFFARRLREELENTISPAYGEFVEIMGEVREEIKEKIPDITVRKKIFASLVYSDVLELLKAGEKDKARERIEACMSSWRD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02170_Glutamyl-tRNA_reductase
MYVLLAGLNHRTAPVEVRERFSICGAELAQAYQELKSHADLEASVILSTCNRTEVYATAKDIQKGFQVLEAFLSKYAHMDEEDLIKYLYQPNCYDAILHLFRVASGLDSMIMGEPQILGQVKEAHQKAMEAGASDGVLNALFQRAIYVGKKVRTDTDIDRHPFSVSHAAVELARQILGDLDNKSVLVTGAGEMSETTIRYLMANGLKSVIISNRSYDKAVKMAENFNGRAVYFNQLPTELSRADIVIS
CTAASHYVLKEDNCRQVLESRQGREIIMIDIAVPRDIDPALKDIPGVFLYDIDQLENVVDAGYEERQSVIQEAGQIILDELEKFNDWLGSLYVVPVIKALKQKGEIIKENEIKRACNRLGKLSEQEQNIIASMANSIVNQILHFPMVNLRELAATQQGHLYAEVAKKLFALQIDNEEYEKYEKFEIGNQG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02171_Porphobilinogen_deaminase
MRNLRLGTRGSQLALWQARHVASLLESSLPDLKVEIKTIKTTGDKILDVALSKIGDKGLFTKEIEKELLAGEIDIAVHSMKDLPSELPLGLCIAAVLEREDPRDVLLSHKNYSMEDLPHAALIGTSSLRRIAQLKAWRPDLQLVDMRGNVETRIRKMKEQDLDGIILACAGVKRLGLEEMISDYLPAHLVLPAVGQGMIAVEARAGEQDVLKFLSRINHQDSFLAGQAERAFLHELGGGCQVPVASMA
ELRGGQLHVRGLIASLDGKEKYSGSCDCSPPEAEEAGRELARSLLQQGGAAILCATINSPDGR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02172_Uroporphyrinogen-III_C-methyltransferase
MEKKGMVYLIGAGPGDPGLFTLKGKRVLEKAEVVVYDRLVGDEILSMANPDAEFIYVGKASSRHALSQDEINVLLAEKAAQGKIVARLKGGDPFLFGRGGEEALYLKERGHRFEVIPGITSAIAVPAYAGIPVTHRDATSSLAIITGHEKPGKQESSIHWRELASGIGTLVFLMGVENLEFICDNLISHGREPSTPVALIRWGTLPRQQVLSGTLENIVKRVKESAFQPPAVIVVGEVVKLREELNWLESQP
LWGKRVVITRARAQASQLLERIRDLGGQAIEFPSIKIEKEKNLAALHNAFKNIGQYDWIIFTSINAVDIFFAESRQAGLDIRDLQGIKLGAIGPATRDKLLARGLRVDVVPEDYRAEGILKELRERIKPGQWILLPRARGARSILPDTLRRWGAHVNEIYLYQAIAASQVSQATLKNIIAGNMDYLTFTSSSTVSNFVKIIGAENIAGLKGKVKVACIGPVTADTARENGFSVDILAQEYTINGLLEAILEDL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02173_Antilisterial_bacteriocin_subtilosin_biosynthesis_protein_AlbA
MIGCTKLLCGTATVSEVIKYSGHEGAVPPQLLQFSDRNRPLVVWNVTNRCNLRCKHCYIEAEDRKYQDELSTEEAREMINDLAAMKVPVLLFSGGEPLIRQDIYELGQMAAEKGLRPVISTNGTLIDDAVARKIKKAGFQYVGISIDGAPATHDEFRNHPGAFADALRGIRACLNNGVKTGIRFTVNKYNQDDLPEIFEIIEREGIPRFCMYHLVYAGRGREMADMDTSIGEKRDILELVSRKTVELYE
KGVEVEILTTDNHADGIFLLNHIKEQQPERQEEIEQLLQMHGGCSAGTKFANIDPRGNVHPCQFWQDYTVGNIREKPFSEIWTSDDELMIKLREKDKHVKGKCGDCSYKSLCSGCRIRARAVYDDLWAEDPACYLTQAEMK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02174_Delta-aminolevulinic_acid_dehydratase
MGFPIQRMRRLRSSETLRRMVRETTLRSSDFIYPLFVIYGQDKKIPVNSMPGVFQFSVDRLPEEIKEIDSLKIPAVLLFGLPEHKDSVGSSAYQDSGVVQEATRLIKTICPEMLVITDVCLCEYTDHGHCGLIDQKGVVDNDSTLDLLAQEALSHARAGCDIIAPSDMMDGRIGYIRKELDDNGYKDIPIMAYAAKYASSFYGPFRDAADSAPQFGDRKSYQMDGANIREALREVALDIEEGADIVMVKP
ALPYLDVIKAVKEKFAYPTAAYNVSGEYAMIKAAAACGWLDEERVMMEALTSIKRAGADLIISYFAKDAARVLQEV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02175_Antilisterial_bacteriocin_subtilosin_biosynthesis_protein_AlbA
MLVSWNTTNQCNMFCDHCYRDAGARLEDELSTEQAKKLIEEIKKAGFRIMIFSGGEPLMRPDIYELGQYATRQGLRVVMGTNGTLISPEAAQKLKSAGFMAAGVSLDSLDPAKNNAFRKLDNAFQLTCEGMQNLKAAGLPFQVHTTVMDWNVDELEAICDFAIEIGAMAYHVFFLVPTGRGADIEEEALRVAEYEQTIARLMEKQKKIPIELKPTCAPQFMRIGEKKGLSLRFSRGCLAGITYCIIS
PRGDVQPCAYLDIALGNVKEQAFDRIWAENPMLQELRTMDYKGKCGICDYKDKCGGCRARAYYYSNGDYMAEDEWCLYQPPDARKR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02176_hypothetical_protein
MKEMNALSRTDREILNILQADFPLTTRPYHDVAEKMNLDEEEVIARIQAMKNSGLIRRIGGVMDARSLGFYSTLCACKVPEQRIDEVAGIINRQKGVTHNYIRDHEYNMWFTLTAPSQDKAMQIMQSLQSDAGIEVISMPAKQVYKIKVSFEMSDLNAL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02177_hypothetical_protein
MPYDSTDREIMRFLQGDIPLESRPYRSLAERLELSEEEIVLRVRQLREKGFLRRMGAVLRHRQAGFAVNAMVAWKPEKEEEADRAGKIMAGYKEISHCYIREVPPDFDYSIFSMIHVKNEERLAEIIEEISLRTGIGKYIIIRSSKELKKESMQYF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02178_Glutamate-1-semialdehyde_2,1-aminomutase_1
MAAGKRTVPMPDDPCLKGSTMRTERSIELFARAREYIPGGVNSPVRAFKAVGNNPLFIKEGHGSKVYDVDGNEYIDYVCSWGPLILGHSHPQVVQAICEAAEKGSSFGAPCEQEIELAQLICEAIPSVEKVRMVNSGTEATMSAVRLARAFTGRNHIVKFEGCYHGHADHFLIQAGSGLLTAGVPTSPGVPEAFARHTLVARYNELDSVERLFAQAPADIAAVIVEPVAGNMGLVLPEPGFLEGLRQI
TKRYGALLIFDEVISGFRFCFGGYQNIVNIEPDLTTLGKIIGGGLPVGAYGGKKEIMDRIAPEGDVYQAGTLSGNPLAMAAGSATLKILREGTFYELLENTADSLCGQLDQVLARYDRQISMNRAASLFSIFFTEDKVRDYPSVMRSDTGKYARFHQQLLRGGVYFPPSQFEVCFISAAHDEGDVEKTLKTVDKALQQL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02179_Chemotaxis_protein_methyltransferase
VENVLDWEWFIKKFEALSKIDLKAYKRPQMERRINSFMRSVNAPDYKSFVDLLNSDKTIYRRFLDHITINVSEFFRNANHWEVLEKEIIPLLLKERSSLKVWSAGCSTGEEPYSLAIMFKEKGFPLSGSILSTDLDIEVLEKAGMGLYTNKAVQGLSPEQLKKYFENQGSYYQAKDELKKMISFQRHDLLRDIFPRDYDLILCRNVVIYFTEESKFSLYQRFSNSLRSGGVLFIGSTEQIFQARELNLKSIATFFY
QKY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02180_Electron_transfer_flavoprotein_small_subunit
LKVLVCVKQTFDTEAKIELKDGKIADAGINLIINPYDEVAVEGAIQLKEKGIAKEIVIVAAGSDKAMDAIRTALAMGADRGILVQQDTAADEFARAVALAEAIKAENPNIILAGHVAADDGSSQVPTRVAEILGLPHVNVITAVEIAGDKATCTSEADGGTQVTEVSLPAVISSQVSWNEPRYPSMKGIMAAKKKPVATAAAAAAENKVKILEFSLPPAKAAGIKLEDEPEVCATKLAEWMKNTVKVEVK
*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02181_Electron_transfer_flavoprotein_large_subunit
MAGTWIFVEQRDGNIRKVTFEMLSEAKKFGDEVAAVVFGKGVEALAPEFAKYGADKVYVVEDDVFANYNTGAYVAQMVAMINEFKPNAVLFAHTFNGRDFGSRLAQKLQLGLATDAIKVEVSAGKGVFTRAIYAGKALAKVEVAGEPVLGTIRPGVCEVGNTAGAGAVVKPAVAATAADVYQTVKSFVPTVSARPELTEADVVVSGGRGCKGPDGIKLVEQLADLLGAAVGGSRASIDSGWL
GHELQVGQTGKVVNPNLYVAAGISGAIQHLAGMSSSKFIAAINTDTEAPIFNVSDFGVVADLFKVIPTLVSELKK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02182_Anaerobic_glycerol-3-phosphate_dehydrogenase_subunit_C
MIFGFHPLEGGYDVPMRVVGANIPYEWLIYLIMLIPVSVFLFGFWKKLEVWLLAKGEIHRNDKIAQRIWSWFVFSFAQARVIRKPLAGWMHAFLFWGFLLLFMAAGIDAMHNMIGWPHLEGNIYIGMSWIVDVIGFLGLIGIIVLAFVRYLQKPERLNDTKSSDGWIILLIAILLTGYFIEGLRIAAQIKLSTTLQQIAYERVASPFGWMFASFFGSMSVDAMLMWHRLLWWFHMAIAFLFIALVPFTKL
WHIFASMLNYAFRDLEPSANRMVYNIEEAETFGVENIEDFGWKDLLDLDSCIRCGRCQENCPAYNTGKHLNPKITLIQNMKAHLDAKAPYLLAAKASGAEVEEMAMTEEAAAEEVNPMEQSLLYDVVGSETIWDCTNCRACMEHCPMFIEHIPKIVEMRRNLVMWQGDMPGEAQMAFTNMERNYNPWGVGWAGRAGWLEERGVREMVNLLPEDGKEFEYLLYAGCAVSFDDRYKRVGEA
LVRLLNKAGVSFGYLGTEEYCCGDSARRLGNEYLYQTLVSQNLESFNNYGVKKIIVVCPHGYTALKNEYPQMGGNYEVYHYTEILAKLVAEGKLKPSKPLGVKMTYHDSCFLGRHNGVYDQPRKVLKAAGGQVIEIEKAKEFGFCCGAGGGRMWLEEEAVQKDGIQYKRINDTRTDQLLVPNPEMIVTNCPFCLTMIADGVKAAEAEENTKVFDVAEVLWKAME*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02183_Phosphopantetheine_adenylyltransferase
MEGAITVRLAVYPGSFDPVTNGHIDILEKSSKIFDEIIVAVIHNVTKKALFSLDERVKLIEESTRHLSNVRVDAFSGLLANYLEDKQACAIIRGLRTVTDFEYEMHMAMMNKKLIPNIDTMFFMSDSQYTFISSSAVKEAALLGGDVGSLVPPVVKTGLEEKMMNDG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02184_hypothetical_protein
MNLYCISQVYILLCFSQPEYCVITFSKFYPGKIQYVYGDYPVKVLISSAAYVLVAKHATGIIAAASLHVAQVANLHFYIHQVIVF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02185_ABC-2_family_transporter_protein
MSTSKLKMFSQLYTKDMRELVPEIVIVVAAAVILNGLFYFNMNRYTSFHPAVFIIPTFMVLAVAAFLPFISSFKLVSREWSNNTVYLIMSLPVSGVMIMGAKLAALITQYIAGTLIAVLMGLFLAREAIPDIMKLISNYPDILNLAILFYLLSIAALLFLISMGFLSQITGKLSSRFSSLITFIVFLLTFYCMSKIINFSIVKLKMITPADSLAILNNSSLTGELLILLLAATLVFTLAVVIYDRKIEL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02186_SkfA_peptide_export_ATP-binding_protein_SkfE
VIEFKEVSKRFGSTLALDKLDANFPTGKIIGLFGPNGAGKSTSIKMIAGLNRPDQGQVLIDGELPRMSKARIAYLPEIDHLYPWMTIGQAAGFTRSFYVDWDNNKYHELLKYLNLSAEMKIGKISKGQRAKTKLLFTVARRAPYLLMDEPLSGIDILTREEIINTLVRDYREGEQTIIISTHEIAEVESLVDEVFFIDQGKIMLSGSAEEFRVERGQSLVEIMKEAFRHVHQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02187_HTH-type_transcriptional_repressor_YtrA
MKFDSSRPIYRQIIDSYKKQLIRGELKTGDKILSQREYAEQARINPNTVQRAYREMEALQMVETQRGQGTFIIAAEPMLTEIKLEMARDVLEYFVGEMKSLGYTCAQMISMLEEEEKEQGGGF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02188_hypothetical_protein
MTYISRHTEATADKAAKMFPVVLITGARQVGKTTLLKHMTSDIPYLTLDDPILLQNAIEEAGSFFKMTPPPVMLDEIQYAPSLFSYIKMSVDESGKKGQFFLTGSQQFNMMKNVSESLAGRIGIINLPGLSLREIKNDAFNEPFVPGEEFFGKRKTSVQQSDYKELWEIIHQGTMPAMHADKLDWQMFYAAYAKTYIERDVRALAQVGDQIKFIKFMTAMAARTGQMLNLSAVSRETGISVPTADR
WLSILISSNIVYLLPPYYSNITKRMVKTPKLYFLDTGLAAYLTKWNTPQVLEAGAMAGAFFETFVVSEILKSYYNTGILEPALYYYRDKDAKEIDILIEQNGMIYPVEIKKTANPGKEHIEHFSVLNKLKGVKIGSGGVICLYDKLIPINDKNLSIPVAWV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02189_Inner_membrane_protein_YhhQ
LLKEQNRLSHLFVIIACLFVTSLLLSNIIAGKLITIGSMILPGAVILFPLAYIFGDILTEVYGYGRARMVIWTGFACNILMVGVFFLVMAIPSPGFFEAEEAFATVLGMTPRIVSASLLAYLLGEFSNAAILSRMKILTRGKWLWTRTIGSTLIGEGLDTIVFITVCFLGVVPNAVLLQMVLYQYLFKVAFEILATPLTYAVVGWLKRREGIDTYDHAVSYNPFQLDI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02190_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02191_hypothetical_protein
MYMIRPGSGEEGYGREKRHLPVAIERGDVHENHDCFRETASGRKEKPNSQDTVQNMQKLYRKQALYCV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02192_NADH-dependent_butanol_dehydrogenase_A
MLTFDIQFPTRIHFGRGKIEELAREILTYGKKVLLVYGGGSIKRSGLYEQLLNIFKESGITAIELPGVQPNPRISSVRQGVKLCREHGVELLLAVGGGSTIDCAKIIAAGTSYEGDAWDFFTRRARITQALPLGCILTLAATGSEMNGNAVISNEETEQKLGTGSPLLIPRFSILDPEYSFSVPPEQTAAGTVDIMSHVFEQYFSPTPGTFIQDRLAEAMLKTCIHYGPIALAEPDNYEARANLMWTGSLALNG
LLGAGKRTDWATHDMEHEISAIYDVTHGLGLAILTPYWMYYVLDEKTAPRLADYARYVWGIEGSEDLAVARAGINKTAEFFRSLHLAGSLKEIGVEAERLEEMATKATAWGALGAFKKLEYSDVLKILQNAYKGNIPFSA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02193_L(+)-tartrate_dehydratase_subunit_beta
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02194_L(+)-tartrate_dehydratase_subunit_alpha
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02196_Methionine_import_ATP-binding_protein_MetN
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02197_Sulfate_transport_system_permease_protein_CysW
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02199_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02200_Cell_division_protein_FtsW
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02201_cell_division_topological_specificity_factor_MinE
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02202_Cell_division_inhibitor_MinD
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02209_Septum_formation_protein_Maf
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02210_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02211_Redox-sensing_transcriptional_repressor_rex
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02212_Low-affinity_inorganic_phosphate_transporter_1
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02214_Folylpolyglutamate_synthase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02215_Valine--tRNA_ligase
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TGRDIIFFWVARMIFSGIEHTGEVPFYDVNIHGLILDAQGRKMSKSLNNGIDPIEVIEKFGADTLRFSLITGVTPGNDVRFHWDKVENTRNFANKMWNASRFVLMNMEGFEAVKPGLEELSLADRWILSRLQLTIAEVTSLLDKYDLGEAARRLYEFIWDEFCDWYIELAKPRLVNQANPRERLVVQNVLRDVLVDILRLLHPFMPFITEEIYQFLPAHSATIMLDPWPEYKEELIWLAELGQMQQLM
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02218_Type_I_restriction_modification_DNA_specificity_domain_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02220_putative_transcriptional_regulator
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02224_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02230_Lon_protease_1
MPTEEHQTYRELPMLPLRGVLVFPYTVIHLDVGRKKSINAIEDAMLGSKEIFLATQKEAQTDEPDEEDIYEVGTVAEIRQILKMPGGTMRVLVEGLFRAEINAYLTNEPYMKVRVEELKDKKLKSPELEALMRNLVGQFEQYVRMSKKIPPETVVSVVAIEEGGRLADVIASHLNLRINEKQRILELSDVNKRLNYLCELLAKEMEVLELERKINIRVRKQMEKTQKEYYLREQIKAIQKELGEKDERSSE
VEEFRERIKKANMPKDAEEKAFKELERLEKMPPMVAEAVVVRNYLDWILSLPWSFETRDRLDLKAAEAILEEDHYGLEKPKERILEYLAIRKLAKKMKGPILCLVGPPGVGKTSLGKSVARSLGRKFIRMSLGGIRDEAEIRGHRRTYVGSMPGRILQGMKTAGSKNPVFLLDEIDKMTMDFRGDPASALLEVLDPEQNYIFSDHYLEIPFDLSKVMFITTANSVFNIPRPLLDRMEIIEITGYTEEDKVHI
ATDYLVPKQIKEHGLKESNISFSEGTLRRIIREYTREAGVRSLERQIASICRKVARQVVEDKDTFVHVASNSLNRFLGAGRYRYGLAESENQVGVATGLAWTESGGDILSIEVALLKGKGNLTLTGKLGEVMKESAQAALTYVRSKADELGISDEVRDKYDVHIHIPEGAIPKDGPSAGITLATALASAMSGLPVRSDVAMTGEITLRGRILPIGGLKEKILAAHRAGIAKVLLPVENKKDLAEIPAPVKRKIK
LVLVSHMDEVLEETLLRLEPIQPGEDFPGVLLNPELVGENLNQDRVEPEANKDLC*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02231_Lon_protease_2
MNEFFAQYSGILYLIQLFFAIVIGLYFWNLLKNQQSHKTVMVKESEKESSRLRQMRNIKLSEPLSSLTRPAQMDDIIGQKEAVSILRSALCGPNPQHVIIFGPPGVGKTAAARLVLEEAKKNPLSPFGKDANFVEVDATISRFDERNIADPLIGSVHDPIYQGAGALGSAGIPQPKPGACTRAHGGILFIDEIGELHPLQMNKLLKVLEDRKVMLESAYYTECNRTIPVYIHEIFNHGLPADFRLVGATTRSP
DELSPALRSRCLEIFFNPLAKEDIERITLNAAQKINFPLETAALEEISRYAGNGREAVNMVQLSAGIAQVEKESKISLSIVEKVLNNGRFSPRREIKIKEEAMVGVVNGLAVFGANMGTLLEIEAAALPVAKGQGNWTVTGVVDEEQVGGQERQFRRKSMARGAVENVLTVLRSIYDLEIGDYNIHLNLFPGGIPVDGPSAGISMATAIYSSITGKVVDNLLAMTGEISVYGKVKPVGGVIAKIEAARRAGVQ
KVIIPAENWLNIFDDFPDLKVIPVRDLDEVFTWAFLEQEVFPATTDKPLPTINEPGLGVST*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02232_ATP-dependent_Clp_protease_ATP-binding_subunit_ClpX
MHRYGDEKGQLKCSFCGKTQDQVKKLVAGPGVYICDECIELCNEIIEEELADDLGFELGDIPKPQDIREILDDYVIGQDRAKKSLAVAVYNHYKRINLGMKLDDVELQKSNIMMLGPTGSGKTLLAQTLARILNVPFAIADATSLTEAGYVGEDVENILLKLIQSADYDIEKAEKGIIYIDEIDKIARKTDNPSITRDVSGEGVQQALLKILEGTVASVPPQGGRKHPHQEFIQIDTSNILFICGGAFEGID
KIIENRIGQKVMGFGADIKSREEKKIGEILNMILPQDLLKYGLIPEFVGRVPIIVTLEALDIDALISILTEPKNALVKQYKKLFELDGVDLEFKEDALQAIADEALRRNTGARGLRAIIEDIMLEVMYEIPSRLDVTKVAITRDVIEKKEQPLLVTMEARRKVN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02233_ATP-dependent_Clp_protease_proteolytic_subunit
MSYLVPMVVEQTNRGERSYDIYSRLLKDRIIFLGSGIDDTVANLVIAQLLFLEAEDPDKDISLYINSPGGSITAGMAIYDTLQYIRPDVSTICVGLAASMGAFLLAAGKKGKRYALPNAEIMIHQPAGGTQGQATDIEIHARRIMNMKESLNKILAERTGQPLERIQKDTDRDYFMTAQEAKEYGIIDEVISHPKKTSKK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02234_Trigger_factor
MTAKLEKIENSEAYIEIEVSAEQVEEGLQYAYRKVVKQVAIPGFRKGKAPRELLELQFGKEVLFQDALEYIVPEAYEKALEELNIKPIAQPEFDINDPESGQPFKFNARVPVKPEVKLGEIEGIEVEIPDFQVKEEDVIQRLEDMRRHYAQVAEKIEEPAAMGDKLNIDFEGFIDGEAFAGGRGEDYSLELGSNTFIPGFEEQLVGLKAGESKDVLVTFPESYHAEDLAGKEAVFQVSVKRIETTEARELNDEF
AQEVSQFNTIDELRQDIRKNLEEMAESRRKESIKTELMEKALENCDIPVPDAVINMQVERMLQDFEQRMAYQGLTLEQYFQFTNSNREDFSQKIWPEAEKSVKGDFMLEKLAEEKGMEVSEEELNEHIMKLADSFGMEVDKIKEELGDAIENIRTGLKIDKAIDFLIDKAVIKEAAEIATAAE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02235_Putative_peptidoglycan_binding_domain_protein
MAIKRNLILLITSALLLGVLGGCGGQVAQYPQRSPDLPPPADKQMSALDEVITDPNIKKDTNLAHDENIQELKHLKYGVRPGEGSELSSPDSKDSSEPGAAPLRKPRASYREEPYTRVNIQLLTVEELDAVVEELIKQDYLQQKPATEEELGNALSRFQSDHNLTPTGQVDAATLELIKGK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02236_FtsH_protease_regulator_HflK
MANNGDYREPDWTKNRGDRLNAPAILLFIIGAFSIYAYIIMQQIWLTVILGIAAILAAWSLKVAREWDRVVVLRLGKFRRMAGPGLFFIIPIIDEAPIWIDMRIRTTFFAAEKTLTKDNVPVNVDAVMFWVVDDPMKAALEVEEYQKAVFWAAQTTLRDMIGKTELYAMLAGREHIDEELKVMIDARTHSWGVSVRSVEIRDVMIPDELQDAMSREAQAERERRARVILGTAELEIADKFAQAATRYH
NNPEAFSLRAMNILYEGIKEKASLVIVPSNMVHSLNPGSILGYVSKMEDKENGD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02237_tol-pal_system_protein_YbgF
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LVGQRDNDEKQSSKNKQEVEYFQQKIEKGNKAQMVLSEKPAVRFLPEEINSRGEENSMAGADYDLEQEKWYYSEGYQAYLAGDFKKSASNLGMVVSMQSKTYLHREALYYLARVYYINSDFKNAEKYFLDYTRDFPSTNYYDESLFYLACIYYFDQQEDKAREKLEKLCEAVPDSGYLTSKMALTLLGAQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02238_Putative_L,D-transpeptidase_YkuD
MVYASRFLRLEKIRMSGPDIHLMQKRLKELGYNPGAEDGIFGEQSEAALKAFQASRGLVVDGIVDPNTWLQLEAGSSIRLQSKREGQTWEQPRISIDVVKRKLTYTSGSFKKTYPVAVGKPQTPTPLGNWTIVQKTVNPGGAFGARWMRLSVPWGGYGIHGTNRPSSIGKAASHGCVRMYNADVIELYDRTPLGTPVNIFGKANTGRVLSRGDEGSDVKEVQRILRTLGYYRAKPDGKFGPKTE
AAVTAFQRDNQLIADGIVGPYTHHALQKAYDLAINDVEP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02240_Adenosine_monophosphate-protein_transferase_SoFic
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PFVKYCLEVILSAYKEFSSRVELMQNRSLSKPERIRVLFDNTLQKLSKRMILEKCPDISTSTVEITLASLLREGYILKTGAGKNTAYIRNMEQPDKDK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02241_Mg-protoporphyrin_IX_methyl_transferase
MDEQSIINWDALWKAAQRNYRNIRPNQWDSMAPALKRWMSNDEYFRQFMANIRLCPEWTVLDVGCGPGDITIWAAKRSKHVTALDFSSEMLRLLKETATKECLTNIDCIQCSWEDDRLDSELDKHDVVIASRSLATMANLKEGLARIDDKTKRYAYVTMGAGFSSPLKKMVYKVMGKEISDPPGYIYAYNLLYQMGIRANVKFIEGRSRYIDLNDALEQCRWIAEDLRPSEEKEIAGLLNDCLIK
RQDGILEFPYNDICWALMWWEKF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02242_corrinoid_ABC_transporter_substrate-binding_protein
MRKSMALLIMFFLTTVFCTGCGQQSATPAPEAVPAEKTITDMAGNTVVVPANPERIAFHWANQYEIMMILGAADDIVAIHPNVKKFVWLVKYKPEVLNLPTPFADPVNFEELLKTDPDLVFEFEHCTDTIEKCKEIGLTVAVLSKAKSIKNIRENIMFIGQTLGNEHYEKAKKYDTYFSEKLKMVNSIIAGIPDGQKPTVACIITDASLRVGGTDTIMDEWIDIAGGKNIAHEIPGYKVVDNEQLLKW
NPDVIITPSNRAKNLIVNSPVFKELTAVKNDRVYVNPHGFFDWQYPSAEEALQIQWAAKTLHPDLFPNIDMRKEVKYYHQQFLGFSLSEEEIDTILFPEIYEAT*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02243_biotin_synthase
VARFERILEKSKNEAINEEEAWYIFKETEQEEKATELLQTARFVREKVMGNTFKWSGGIARVLRCNLKPLCQYCPYWRKKGDEPLGIEEILKGVDYIARHGLQEFHLSGGTTLRSDGSDVLEIVTAIRAAGYNDMELDINCGAAMSFDTLKELKQLGVKLVRSVFETINPQVFNKVKPGDDLEEKKKFARLIGEAGLGLGTGIMAGLSPNETKYQDYVDFIFHIKHYEHLKSVYVSKFFPFNGIPMKDH
PSCSDWEAARLIAVMRLVLRDKDIGWAAGWGRDNYPAPLMAGAGNRVGGIHINRTPHYHVYQNEEYLYEDNMEFHNHMESTSKKLKELGIEITL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02244_corrinoid_ABC_transporter_substrate-binding_protein
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NNVATELSGKPTDESIPLSMEQILKWDPQVIITWKQTTKDQIMNGAEWKNVSAVKNGRVYVQPRYANMDGITALVGMIWAHGKLYHDNDANYDKLFEDKMIEFYSLFHNNLIKPEQIVEVAE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02245_Staphylococcal_iron-regulated_protein_F
MKKKRFGLLLVMVFFLALSVMFIAGCGKEKAADMPDATRKIVDMAGREVTLPLEINRIVTLGPVPVINSLIFTVGEGDKIVNGLPEFARNERYKYQHKFAPNITNQPMLQMSTGKPNVEELLKLKPDVVFTMSTKKAWDEQTAKVLTEAGLSTVYLVWTNPEEVKQAINLVGQALNQEKCAREYNKYFDDTVVRINDVVKSIPRNEQPRVLHCNTQNMTAPHAISDWWIKQAGGISVTEDFRK
ETHVAENIELSVEQLLKWNPQVIIVGSPEQVDSLFNDTRFKDISAVKNRRVFASPMGAQEWCYRTSEQPLMLLWAAKTFHPEVFKDLNLEEELIQFYKHFFNYSMSVEEAQEILGGGPKVDTGKKE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02246_Ferric-citrate-binding_protein
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VSMECSIEQLIGWDPDVIVCSRETGKSGLAEEIKKDPRLKDLTAIKNNAVYDYPLGAFWWNRPSPEAPLGFIWLAKTLYPEETRDIDLKAETKKFYKEFYKYELSDKEYESFF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02247_Hemin_import_ATP-binding_protein_HmuV
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02248_putative_ABC_transporter_permease_protein
VEAVTKHKIVEMETKRGSGWKITILLITLALIFILSFALGRYPVPPGQLLEVLASRVFPIEAHWNATVETVIFQVRLPRIFAAILVGAALSTAGAAYQGMFKNPLVSPDILGASAGAGFGAALAIYFSFSMMGIQMMAFVGGLLAVGLTYGISLRIRHDPMLALVLSGVMIGSLFTAAISCIKYIADPYDKLPAITFWLMGSLASITPRDVYMVLTPILLGGILLYLLRWRLNVLAMGEEEARVLGINTTLMKT
VVIVCCTLMTAASVSISGLIGWVGLVIPHLARMIVGPNYRVLLPASILLGGAYLLLVDDLARLLASMEIPLGILTALIGVPFFLYLLLNTKWGWK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02249_biotin_synthase
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ARLIMPRINLGLAAGNEPDDLPLWYAAGGGNQLLGVMVSNRKVENKTNPEDELIIINERCSVYNRMPLMQRYLQEMGASVISKEKIQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02250_pyrroloquinoline_quinone_biosynthesis_protein_PqqE
MIRKHFKGYNFVCIPETGVTFRWGDSIAEDPYMAPWPELADISISNYCTNGCEYCYRASNEEGIFMTVADYKFILGQLTSKEYGSIFQVALGGGEPLLHPDFNEILHVTREEYGIIPNYTTCGKYFNQKNMEASKKYCGAVAVSWDPYRDNLSLEELRELGVQLKEEKIRTNIHYVISERTLIEAIKLLKGKYDEYLKDFNSVIFLTYKAAGRADKSDVIKSQKNLREFLDMVDAPLTKLKLGFDACFVPVL
MKATGVDTDLVDSCECGFFSVYVSESMEVMPCSFCNNSNFTYNLKDLCFKDIWQKHFSAYRSYVNDNCKTGCAECDERSGCRGKCPFYNDIYLCNLV*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02252_corrinoid_ABC_transporter_substrate-binding_protein
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SVEQLLKWDPQVIIVSSPDQVNLLCNDSRFKEVSAVKNKQVFPTPVGAHIWGNRTSEQPLMLLWAAKTFHPEAFKNLNLEEELIQFYKHFFNYSMNVEEAQEILGGGPKVDPGKKK*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02255_Signal_transduction_histidine-protein_kinase_BaeS
MAKSGLSNKITTSFIIVSVLAVIATSLIMLLMTRQQFSTYIDNYNQVMLDQWAPIISDYYSQYGSDGLQEYLQANTIGNGKAMGQRRHHGSMPMGMGIRQGQRLIVTDANNMVVADTQGLLIGQPAKLDSLHSSRELRVDNQPRATLYIISPLGSGLSSLENQFVARLTINTAILAIVIGIIALILGLALGKRISSPLAALSSAIHQLANGKLDERLSLQGDREFMELGRDFNLMAQKLDDVEKNRRRLT
ADISHELRTPLTFLRGQLEGMQTGSIPLDIESIALLQDEVIRLSHLVKELDNLSLVENRAVSLNFSRFPLSELLEHLIPVNLAMQDKGISYSIDLDSTIKEIYADHDRLLQILLNLLSNAMQHVEQGGQVTLSIQRYRNHLQFAVADNGPGIPPENLPHVFERFYRIDDSRNRREGGMGLGLAIARGYVEAQHGKIWVESSPGCGTVFYFTLPQE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02256_Alkaline_phosphatase_synthesis_transcriptional_regulatory_protein_PhoP
MDSLILLVEDEKKIRDMLSQNLRQEGFGVALAADGLEALRVWQDIKPDLIVLDLMLPGLSGWEVLKRIRQKDNTPIIVLTARADEVDKLLGLELGADDYITKPFSPRELALRIKAVLRRSRPHEQVTNISFPNLSINPERLEALIEDTPLALTPTEFKILLLLAENPGQVFSRLHILDRVFGDIYEGYERTIDTHISNLRHKIEATGKSKVSIKTVYGIGYKLVAEE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02257_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02258_Macrolide_export_ATP-binding/permease_protein_MacB
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RLGFTVNEEALKQY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02259_hydrogenase_accessory_protein_HypB
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02260_putative_secretion_ATPase,_PEP-CTERM_locus_subfamily
LLGYGQPLIRSKLALNVNNPLRQRIVVKHMMSNMQKDELGGYLKTRLAFGGTHEELFTAPSMEAIYGVTNGVPRLVNSLATNCLLYACEKKQRQVDEETVYQAQSELNF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02261_Putative_transposase
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AQYIIRALLSQERLLYIPSSAVPDGIARVIYKGKNSSIRESFTALDWLARLVSNIMKFRPHFSSQACLNHYLLPCGILFWKKQIPIQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02262_Chitinase_A1_precursor
MKRTKTKWTLVTTLLIISLFTTTCFADEIIKKEIKKDQFKVVGYYSGDLFNEPVEKLQTDKLTHVIYAFLIPQEDGTLVDLEKPEQLKQLVSQAHNDGAEVFIALGGWSYQGKPLAPVFEAAAASQEKTTLLIDNICALVEEYDLDGVELDWEHPNVNSIADYERLAVELKTALDLQNKELTAALNGAWSATEGPEVSKLITNACLESFSFVNVMAYDMNNEDHSPAWFAETSVDYWLNRGIPADKI
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02263_zinc/cadmium/mercury/lead-transporting_ATPase
LFESPVARAILKAAHEANGTFTEPENFRQIVGKGIEAMVDGKQVFVGAVNEGGPDYEKIKNEDHFGTILIVKQSEEMVGYLAISDSSQCRFRFCGGQLGIANKEKFLILSKGCINKSFNPKYLPYSLLYLITAAQTHIYKLLS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02264_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02265_putative_transcriptional_regulator
MPIVVNLDVMMAKRKISSGELAEKIGISPANLSILKTGKAKAIRFSTMEAICKSLDCQPGDILEYKPDQD*
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AYIFGLVAGSAHKRGTGLFEKDSTLQQISGLRILPMTTVYILMGLLCTLYIVFIGSQFPYFFSAFVGQRPEGWQIYSEYARSGFFELCRIAVINLFVLTAANIMSQKHSRDSMFLKLLNVLLTILTLVLIATAFSKMTLYIGAYGLSMRRLLPCVFMTFMAVICGGVIALQKWSFSITRLAVGAGVVIFCMLCIVNPDSLVARYNADRYLSGTLENFDVEILYRSGPAGVDSALKVYEQTNDPALQFKLKEYLL
AEQQQADEVAGEPGDSLERAHARYRISEFYCGQSLLSE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02267_hypothetical_protein
MKRINLRDYYPSYTSDFFMEVADEIALSLKRFELD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02268_Transposase_DDE_domain_protein
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VSTKARKLAEKLEDAITITEQVIDQTTQVQSGNTHIKDRVVSLFDRNARPIRKGKLSAPTEFGRKVLIQDTEEHVVTGYQVYEGNPSDDSLLTDAVDLHTKNVGRVPVNVATDRGFGTAKNEQTLTTLGIKRCILPRKGKIGTERKQYQSQPWFKRLQRWRAGGEAIISLLKRKYGLNRCRSRKPHGTQTWVGYGILAYNLKRIATLMA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02269_Regulatory_protein_BlaI
MNNFQKLSETEMEVMQVIWASGRPITSSELLDFFARNKGKAWKGQTMATFLARLVEKGVLISIKQQGRTNIYEPCMSPEEYRSQEAKSLLETLYEGSVKNFLATLYDGKELTKDEISELRHWFAEKAGEKNG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02270_Regulatory_protein_BlaR1
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CDEALACDMSNEERKHYGEAILNTLDNHSGINTAFCSSLCESKKHIERRLTMLLNVKKMKKHVALFAVVVIVAIAGIGTAVSALAADNTLKADSLTRNPFAPIMNSEVNVAFTTDTPVIIGSIDGLKEVELKGDGKEYTFEEFKQWLEAARLEAAELVKIGIWTQEQADKKLALYENTLADIEQKGGKTFGKMIDKGDEIFPETVDVFYTADELVFELPAKLADTANGEVGFGLSVQPKK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02272_hypothetical_protein
MISLEEKQQIILRHYHDGESQRKIGYLYSFV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02273_hypothetical_protein
MSNFDISALISSDNNPNFLVSSFIDVLTRQIERFRGEEQCCRLLVGMQRPEEELLRNALARIDEGLMDNPRALALKKEIALSFRVP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02274_hypothetical_protein
MKASLGNEELLNLPKTAFLCSRRVLASAVLKCYDWANAQREAGRCVIGGFHSQVEKDVLHYLLKGTQPIILALARGLKTRLEPELKTPLEQGRLLIITPFDHSVKWVTAENAAIRNRMMIELADEIVVGYSSPEGQLDMILHYYKERMIVRL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02275_Toxin_ParE3
MARLKIRYTRDAVDDLDSIFDYIAEDNRKAAARLLERIENSILKLADKPRLGTVLPTNDLSLVKAGYRRIIVQPYIIFYRIAKDEIFIARILHSKQDWMNLLLENTYEDNS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02276_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02277_antitoxin_HipB
MKNYVKVYRAMHNLTQAQLAEKLEVSRATINAIEKERYDPSLKLAFKMARLFKVKIEELFEDVETQH*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02278_hypothetical_protein
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WGTTIIMMLASFILPAMVILAAIVMRVDVPGWAVGLVWVLGLGIESISTYSATTRLAGTDNAIENGIDERQEQHVLWSGLFGFLALMIMLIFSLLQPWVSLEDTRLWLSVLTVGITIWLLSYVVLETGR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02279_YcfA-like_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02280_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02281_hypothetical_protein
VLKKQVLGVILIIIMALGLAGCNSAVTKGGQSEGKDVIPLIMLTSEPAGENDAGSMEREARLASWDLKSGKLSWEQEACFRQEMGEEYNPRLVWDGGSRLFACSFGSQETGRLIKGHASNLSVQEVRTDSMPMVAAIKASSEQDELLLAYPRSPSGESPDSSIPEVIVIESHRGDLVVKRELPLPDYAAKGDIMPLLISGNSSQFKLLLLNNDVEAGKNGLLLAKVAEQQEDWQKIKGEALGLIVGGGT
DLAQVGSNIYRTIPEPAKLSLQQREPVWEEFSPLSDLQAGLSKNIEKAMEKYGDAYCNLRLGSFKDILLVAADLPEEHWIWAFRGDKCIGRLYTNNETQSMESSPGNEKMQATAFSARADWFILPTDGYGQYK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02282_Ferrous_iron_transport_protein_B
MSTINNPGLSVLQEIEPLLPTNTANIKDRIVSSIYQQAESVSAQVVRSKNSQYTGLEARLDNILTSRWLGFPIMLLLLTLILWITITGANYPSQLLATGLFWLEEQLTALFLAVNAPVWLSGLLIQGMYRSLAWVVSVMLPPMAIFFPLFTLLEDLGYLPRVAFNMDKLFRRAGAHGKQCLTMCMGFGCNAAGVISCRIIDSPRERLIAILTNTFSICNGRFPTLIALSTIFMGTLVSQAYSSVLATLAVVAII
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02283_Ferrous_iron_transport_protein_B
MAINTTLLSESTENSPDKQNNFVIALAGNPNVGKSTVFNRLTGLKQHTGNWPGKTVIKAEGTFSHRNRHYTLVDLPGTYSLHTSSSDEEVARDFICFSRPDITLVVCDATCLERNLNLVLQILEITDRVLVCVNLLDEAERKGIHVDIAMLARQLGIPAVGTAARSGRGLESLKNVLDDMLAGKIAIRPRQLVYDPELERSINKIEKRLAPYLPAWINSRWVALRVLERDFSILEHISNHKNNDFPRQVL
KEEVALCLP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02284_FeoA_domain_protein
MPHTLSLADIPIGASVRIAEILTPGNNRRRLLDLGLVPGARVEIIRRSPSGNPTAYLIKGAVIALRNENAAQIMVDTN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02285_hypothetical_protein
VLHPCFANACFAYLCNPMQQKGVFAVESKIDYLTLLSSGCNLMQQKEFLHRITTLIIPDYGLLSHSPQKCAASNLPLIQL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02286_hypothetical_protein
MDNTVLSFLQASKKKTILLSELEQLVGGQASYEDFALLINDLEQKGILTAVKQQGYNQKPIPLANAYRIIQSKIPADFLQEIERFHFILHPLIKLEAYYSLAASEWENDLPYIQHINRFLKEQGLPDDEATAPERSYALVGDEKWIDEKGGKKLLERVGIWSAMNIVYLPDPLMLAVNQLQHAQRDETGLHLVVENKATFHALLEYLPDTMFYSLIYGAGWKITADIIMLDKQLSLQNREHCIYYFGDLD
YEGISIWHSLNMRHLALPAIAFYRALLSKPAARGKETQVCNEEALAHFLTYFSFAEQETIRDILGNGGYYPQEALSRAELGAIWRDASWS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02287_hypothetical_protein
VELDARNITANYRERVQRLAIFDPLFRLENKKTTDNSNRPIDYFGLGLLTLLFFFENMLLRNHKTGVKELAQFFQSINQGELDLDSEGYEKLARDIIDVFRPPGGKRNSRSFYDWHTRQEDTIFISILKADRRDIKSSTQYYSLADQGLELVFATREYYSEFQVSINQLLLRKQLERGQFWGALRQIDEMRVAVETLEERIIRIRHEVQRNIVSESTYQRYRDIIEEINLRLSREDKEFEELQVFVGETRERLSY
ERKTPKDEQTYELMVRIDVELFEVHNQHGNLLRESIELKTTALQAAQESLYFAGIDSFNFQKEITEQLLAAPLPLTAARTLVEPFLFLERREQWSPLTVFARQRVERRKENVETEGFLQARDEELQAREKAVRRKNYRQVMELVLEALGEGEEIYLQEVVNYCYNSGQEHLLKQRFFYDFWILLHQRSPINLDKDLESIQESTLGEAVAILTGKARSLTVVERGEVLKVTARYSIRNMQLRLEKEKNAL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02288_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02289_hypothetical_protein
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KILESQQVDRKINSYVNRYALYDEARQALLKVKGDTRSLYQLATQQQEQVAQRLEEQRQATTRLQEKRQEWERKQASYQLASRRQELDYTGQIYEERRKEYEEQHEEYDQKNSRLQNLEISQLKARIRSSDEEIKYYTEQIRNLAADPDVRNLEEKIKNNAGYLRYCYLQEEEILNGQKQESQAELDNVNRELREIERNHKEQQNHYYKLREQKGQAEQQRIQAENDMQSIASQILANPVQEEVIKE
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ELRAIPRKTRVKVQDSWKEIFQFDVPQWEEKEGKDELRRHVDWMLNQIEENRYRDENGKENYALMHKDIEKWLQAPQLLSNVMQGKNIKVKCRKVTADGKVSSYPSAWESSNQWSGGEKWSKNMALFLGIQNYLAEKRQAVNPRVKRSRTVILDNPFGKASSEHILDPVFFIAEQLGFQIVALTALAEGKFISDYFPIVYSCRLRPSTSPDKYLIAADKEIRHAYFQDHDPEALRRLGQQKQMELF
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02290_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02291_Manganese_transport_regulator
MGEQGREFRTVRGYQIKQQATKTITASMEDYLEMIYRLAGKKGYTRMGDLASALNVQPPSASKMVQKLADMGYLQFEKYGVIELSKKGQEHGQYLLKRHETLERFLSIIGVKEQLLEETEKIEHYISPETIGKIILLVEFMEDNPEWKQAFYDFKKHEG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02292_hydroxyacylglutathione_hydrolase
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GEFSPYYLVSTL*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02295_Dinitrogenase_iron-molybdenum_cofactor
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02300_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02301_Thiosulfate_sulfurtransferase
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HYSDALNADGTVKTVDELKDMFAQAGLKPGDEVIAYCTVGIRSGFMTVLLRMCGYENAKNYNASFSEWAGDPNNTIEK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02302_hypothetical_protein
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IPVSINGYGVREGAYVALLAGYQVSPTVAFSSSLLFAFMVSLCSLYGGIVILRHNKQGDINNGYQKGFANSR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02303_C_GCAxxG_C_C_family_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02304_putative_glycosyl_transferase
MLTKISVIVPVLNEEECLPELLNSLQRFSGIEIISDGGSDRSLEICSRHPVKTVTGSAGRGMQLNRGAQLATAPILLFLHADSQLEPIVVEQVLEAIKEGYHWGCATMDFDERTPFYRVLAFFSNLRARCWKSCYGDQAIWCRKDVFFNNGGFPDIPLMEDLALSHHLRSKYRCRVVSGRVTSSVRRFIAGGLWATLIKMQVLKMLYFLGTSPERLADYYQQWRRVSL*
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RQSSGWSSS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02306_biotin_synthase
MKTPIKQICDKALGGALLSANEIRGLFAIPPLSEESCHIQWASRSISEKAGLAEIHGQVGVNTAACPCNCRFCSFAAANLIFKENQVSDLEYIIEQCLHLQEQGANAIYLMATANMNFADFLNIAGEVRLKLQPESIMIANVRDIDYYEGLALKEAGFAGIYHAIRLGEGEVTRISPRKRLETVQAAKKAGLKVGTCVEPVGPEHSLNELVEKTIIAREIEPVFSGSARRISIPGSSLEQYGMVSEASMAHILAVV
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02307_TVP38/TMEM64_family_inner_membrane_protein_YdjZ
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02309_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02310_nif11_domain/cupin_domain_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02311_Ribonuclease_VapC11
MILVDTSVLIGFLKGQINEKIQLFDQVLSRNIDFGFSSYTFQEVLQGARNEKEYKQLRDYLSTQIIYFLPEKTATYEKAARLYFDLRRKGITPRSTIDVLIALTAIENNLLLLHNDRDFDLMAGQLETLNILKMI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02312_hypothetical_protein
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VLYKCHVIVYVIILIFITIVLNIRRRCCHLPFLSQGIDINMDFDYDFKVRTNNRNKTGDKPFASPEARALRDLVIEEAPDIIIDFHGWINCASGDKEIADIFCQHLGLTYEPMEKAIYRGFFLDGQQKYARSVLVEYPDPITGQGACDLKSDQKYDYSQDKLDELQYSINTLKSIKDIIDHEL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02314_Antitoxin_DinJ
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02315_Toxin_YoeB
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02316_NADH_dehydrogenase
METREAIFGRRSIRKYLDKPIEPEVLQDILEGAVMAPSAVNNQPWYFLAIQSQEQMEKLRGIFQEVSVKTRAVLEKRFPNNPEVVSETLGFLTGLGNARVCVLVFLLKPSKDYDIIAVESTSAAIQNLCLMAYDKGIGSCWMTAPLSTGFSDILEKTFAPGKGKFIAAVTLGYPAVSPQAPKRKPGRYEII*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02317_hypothetical_protein
MCAIAFKESEPRIPNILPVTEIDRVAYLLKYGYYNMQIQAVITFDQHLDTEVLKAAVMLSLDAEPVLGCRFVEDEKRPYWQRFLLAAPPKTKP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02318_Acyl-coenzyme_A:6-aminopenicillanic_acid_acyl-transferase
MLGYESIHNDFEIIRPEKDLLLHSNHYLTERFKEGDTAPQYQPDSYHSLDRIRSFMNQHYGHINVETVMEILADHEHHPYSICRHIDPAAPISSVTLASFIAVPAEGAIYIAAGNPCEQDYVRYSF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02319_Antitoxin_VapB
LDTAKIFINGSQAVRLPKDYRFDGNEVYVKKIDDIVVLIPMDSVWTILESGTHYFTEDFMADRKQPEIQNREEL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02320_Regulatory_protein_BlaI
VQEVPQISDAEWQVMKVIWADSPVKASEVIDELANTSYWKPKTIKTMLRRLVDKKVLGYYQEGKSYLYYPIVSERDSIKAESDFFLKKVFNGSLNLMLASFIEEEKLSQQEIEQLRRTLDDKE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02321_Regulatory_protein_BlaR1
MVNLPVISSLFDWIMLSSLMGTILICLILSVKFVFKHKLGANWHYYIWFLLLLRLIIPFTPQSPVSIYNLLNQNSQNMHSDNIYDYLGEAKHPAIGITDATGISARDADYRIQNNQGVAGSLNEYRKSVDMKDSDRRNIFIIIWLAGVFALATYTLIINLKLLYKIKSEPIINNSSIIAELEECKSSMNISKRFAIVTTRQVSSPALFGLINPILLLPDSMVKSLGAGDFNYIALHELAHWKRKDVLINWITVILQILH
WFNPVIWYGFYRMRHDCELSCDALVLSRLAPEKHKEYGHTIIRLLEMTIKTQWIPGTTGILTRKPHIMRRVSMIANYKKESHNLTLAALVIFIVMGVLGCTNAQDSKNPDARANIDESTYNQLLGDLKNNQIAAGTADVEGPGIIVNLSDQAADNTTKGIPEHGLLVHDTDILLTVNELIKAGAEAISINDERLIASSEIECSGDKIRINGTPCNNPYVIKAIGNSEKMLETLESKGGYIEFFRKLGFGANIE
KSDNLFIAKYSGELNFKYARVKN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02322_Germination-specific_amidase
LTTYITLGSRVLRRGDEGTDVELLQNLLKILPDPIGSGIKEKGVFGKETENAVKKFQKYFNLAIDGIVGANTFLFLGVPTASYLPPGGNLFGARTLKKGSYGYDVWVLQNRLATTAKKFAETLGQPANRNFDSKTESAVKIFQRDVHLEDDGIVGPQTVYQLYNYATMGARILQKGRWDRNQGYDVYWLQRNLQELGYYQGKLDGKFGSQTEAAVKKLQEASGIKVDGIVGANTFYHLASC*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02324_Glycine--tRNA_ligase_alpha_subunit
MNFQELILRLHNFWGQQGCIIQQPYDVEKGAGTMNPATFLRALGPEPWKVAYVEPSRRPTDGRYGENPNRLQHYYQYQVILKPSPDNVIDLYLASLRDLGIEPEKHDIRLVEDNWESPTLGAWGLGWEIWLDGMEITQFTYFQQCGGFDCLPVSAEITYGIERIAMYIQNKESVFDIEWVDGISYADVHHQAEVDYSHYNFEAADVGALTSMFNICEEEAVRVAERQLVQPAYDYVLKCSHLFN
LLDARGAISVTERTAYIGRVRNLARMVAREYLEQRKRLNYPLLKDKNLREQLIIEEEVL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02325_Glycine--tRNA_ligase_beta_subunit
LAQDLLLEIGVEEMPSAYMLRALKDLENLARKNLAEARLSCGEVLTWGTPRRLCLWVKEISEEQEDSLLENRGPKKSIAIDANGNPSKAGLGFARSQGVDFRKLQIREVGGVEYLFAIKKEKGQAAEQILPGLLLKVIHSLSFPKSMTWSYYQTRFARPIRWLLAIFGDKNVEFNIENIKSANYTYGHRFLSTGALPVTSIDDYFRVLREHYVILDQAERKTMIWQQVQKVAGAAGGKAMENEELLEEV
AFLVEFPTAFYGEFSPSYLAVPPEVLTTSMIEHQRYFPVYNNEGRLLPGFVGVRNGTDYCLDLVRAGNERVLKARLEDALFFWNEDSRKSLEEMSAKLKDVLFHERLGTLADKVLRLQKLALFIGQETGLSQPEKLQRSALLCKADLMSNMVYEFPELQGIMGRYYASGSAEEPEVAEAIFEHYLPRFAGDKLPSSAAGIVLSLTEKTDNLMGCFSIGIKPSGSQDPYALRRQALGLVNIILDKKLSIDLK
LVFEQAYLGYEDLVLENSREDSVKELLDFVYQRMRGVLLDSGVSYDVIDAALSRPSFDLFETYNRVLKLQEFKGSPVFEDFMVVYNRVHNLSRKWESEEIDPDVLLDESEKNLYRKLPELQQEIKTSLKAQDYTRALELLAALRADVDQFFTAVMVMVEDEKLKAARLGILKSIANLFNSMADFSKIV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02326_Control_catabolite_protein_of_gluconeogenesis
VVNPIQLNDRQEKILEIVKKHEPITGENIAEMLNVTRAALRPDLAVLTMSGYLEAKPRVGYTFKSEGVESAMRRVLNQYRVKDIQSLPVIMKETCSIYDAIVTLFIEDTGSIFVVDENKYLSGIVSRKDFLKTTIGQADIHKVPVSVIMTRMPNIVTATLEETVVAAIKKIVEHEVDSLPVVKNRVEDEEEKLEVVGKISKTNIARLFLDLAANKTKEV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02327_Putative_pyruvate,_phosphate_dikinase_regulatory_protein
LNNHLPGVFIVSDSIGETAEMVVRAAASQFNSGSMEIRQVPNISDTETLEEIINQAAASNFIIAYTLVINELADFLQMEARKKGVICVDVLGPVIEALKSASDIEPRREPGLLRKIDEMYYRRVEAVEFAVRYDDGKDPRGVTQADIVLVGVSRTSKTPLSMYLAHKRIKVANVPLVPEVAPPEEIFSVEKGKVIGLIINPEQLNQIRTERLKTLGLKGQASYANLERILEEMEYAQEIMKRLGCPVIDVTNRAV
EETASKILEIYYRRLSHV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02328_Pyruvate,_phosphate_dikinase
MSKKYVYLFEEGNSNMRQLLGGKGANLAEMTLIGLPVPAGFTITTEACNEYLASGQEFPDGVLEQVFTALERLESNSGKSFGEKNNPLLVSVRSGAAVSMPGMMDTILNLGLNDESVQGLASLTGDSRFAYDCYRRFIQMFSDVVLGVEHARFDEVMEKHKRKLALIFDYEIPAGELQNIIEEYKEIVQQEKGFAFPQDVREQLTMAIQAVFDSWNNQRAIVYRRLNKIDDELGTAVNVQCMAFG
NMGLDCGTGVAFTRNPSTGERELYGEFLVNAQGEDVVAGIRTPTPIDRLKEELPGVFQQFLDTCQKLETHYRDMQDIEFTVEKGKLYMLQTRSGKRTARASVKIAVEMVNEGLISVEEALLRVDAEQINQLLHRQIDQSVKLDAIAKGLPASPGAACGKVLFDADLAEKMGGAGEKVVLVRSETTPDDIHGIIYAQGVLTARGGMTSHAAVVARGMGKPCVCGCEAIKIDNEDRQFMVNGIVV
KEGDVITIDGASGNVMLGEVPMIEPTLSDEFALLLQWANQVKKLAIRANADTPQDAARAREFGAEGIGLCRTEHMFMAAERLPIVQQMILAENLEDRKEALSQLLPFQRDDFYGILKAMAPQPVTIRLLDPPLHEFLPHPETLLLEIAEMKHQQVKGKELLEKEELLKKIHSLSEANPMLGHRGCRLGLTYPEIYRMQARAIFEAMVQLQKEGIGCFTEVEIPLVMDMAELFLLKAEIMDVYEQVKK
ENNCELDFAVGTMLELPRACIMADEIAREAEFFSFGTNDLTQTTFGFSRDDAEGKFIPIYLEKKIIKDNPFAVLDRKGVGSLMRLAVEKARSVKKDILMGICGEHGGEPSSIEFCHIVGLDYVSCSPYRIPVARLAAAQASLLNK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02329_hypothetical_protein
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KMLAIKGDIDFSIGNICFPGKVLIEGSVKDGFAVEAEDDIEVRGGIEATRVISRHGSVFVKNGIIGGGKAQVKAGKNVEARFIQEATIEAGQNIVINEYTVRSNLKAGDAVLIQGRRGIILGKNIITARTRIKASKVINCPALDLRVEGIERKQFYEQIKELNSRIDQQDTELKKIAEQIRYLRDKSSEQNSLQQLQELLPQYMDMNEELDCLYEERRSLVNMLKSTRGEGMIEIGGGLETGMTFGIKEDFIKLK
QQAKNLRMYYDPDKKRIIILD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02330_hypothetical_protein
MKYIPASLRSGRVPINKTGVGSNPPNRCSTVLKLLMQFLPMLKILEIK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02331_NAD(P)H_dehydrogenase_(quinone)
MSRPLIVGINGSPHKNGNTAFLLKEALDTCKKMGASTRILHCQQIMKDQKNPFCIACSSPCAGKCLEGKELARAFTMISQAEGLIVGSPVYFGTASAQLKAFWDKGRSLRADKKLLNVVGGAIAVGASRFGGQETTLRAIQDMMLVQGMIVVGDGFHEDDCGHMGGAGQRPANEDDNAINRSRILGKRIWEVAMATRDLRIR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02332_Deoxyguanosinetriphosphate_triphosphohydrolase
MSIREEIEARENAMLDKAASLSSKSRGREIEEEPDPVRTCFMLDRDRVVHSKSFRRLKHKTQVFIAPPGDHYRSRLTHTLEVNQIAKTIGAGLNLNLDLIEAMALAHDLGHTPFAHAGEQVLDQLLAGGFRHNENSIRVLTRVEQHKGRNGLNLSHEVLDGVLHHSGYGQSESRSYTLEGQTIRLSDKIAYVQHDIDDSIRAGLLRIEDIPADYLNILGYTHSQRIATLVTDTIKYSRQLILGGGHPQV
MPSPRIENALRGLRDFMFKEIYRGPVCQAERSRAIFIIELLFKYYCQHPEIMTPLYLEIADREGIERAVADYISGMSDAYCISLFQDIYIPQSLVPDAGKLLKVF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02333_DNA_primase
LATYDDQVLEEILNRLDIVEIVSESVNLSRKGNRYWGLCPFHQEKTASFCVTPDKNMFYCFGCHAGGDIFSFVMKRDGLEFREALEYLAEKAGIKLIESRSGKQTDHRKPVIELNQAAVEFYQQVLAGKAGQEAREYLSRRGIEAETIRKYRLGYAPDGWTRLEEHLLKKGYSQEYLKLSGLIKRSENRNSFYDLLRRRLVFPITHYNGDIVGLGGRVLDDSLPKYLNTPETELFSKRKVLYGLFQARDSI
RQANEAIIVEGYMDCIKLQQLGINNVVATMGTALTSEQARLLKRYCEKVLLLYDGDEAGQRETIRALEIMGNEGLKMSVVSLPMGEDPDDYIEKHGKEELLRYIQNNKLSNIEFKINRYLSQKKELNLESQIGAINYLREDIGQLNSELEKDYYIKVLARKLKIEENIVYRELKKRERDISGIKRNKSKIIRDNIKYVNYGINERILAAMFKKPELFEYIKSRIGLEFLEEGDLRVLAGIYEKLKDNNHDGRLERL
GLLANQQGFGSAFARMALLMEEESLPGDMEIKRFIRQVERKEEELAWKNQFYRLKDLDSEGNFYSFLRFILNLNSFLNDIQEGGKR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02334_Sigma-A
MKLDRKLAEAVVNLAEKGKKKKSLSYEEITEELQSFNLEADQIDDIFEHLQTLGIVIGSEQDAELDEENESIETEEVVIPDGIEIDDPVRMYLKEIGRVPLLIAAQEIDLAQRIEEGDEEAKRQLVEANLRLVVSIAKRYVGRGMLFLDLIQEGNLGLMKAVEKFDYRKGYKFSTYATWWIRQAITRAIADQARTIRIPVHMVETINKLSRVQRSLLQILGREPTPAEVAEEMDIAVDRVIEIMKVAQEPVSLE
TPIGEEDDSHLGDFITDEEAESPEESASFVLLREHLDGILNTLTEREEKVLRLRFGLDDGRPRTLEEVGQEFGVTRERIRQIEAKALRKLRHPSRSKKLKDYIE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02339_hypothetical_protein
MEKVIAVEDNLTPIKEYLEARGCLVVDIGSGWNIPVDAVVISGLDKNLMGMQDIVTVAPVIEARGKTPEEVWDSISR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02340_hypothetical_protein
MKIIVDADACPRPVLQSCLELGCKYDFPVWTVASFNHHIDSDHHIVVGNASQEADLKVINLTQRGDIVITQDWGLAAMVLGKGARCLSPIGREYRNESMDFLLEEREIKAKLRRAGGRTKGPRKRSVEDNLRFQRSLENLLLTIPPHPHP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02341_Cyclic_di-GMP_phosphodiesterase_response_regulator_RpfG
MKRVFAEELESGMVIARTIVGADGRALLTENTRLNEAYIQRLQQLGISSVYIKDGLADIEIPEIISAQVLTAVSSNLNSIFKTFSSRKTLDINQLRKMISLLLDDIVTNRNVIIHLEDIRAYDDHLLFHSINVAVLSMMTGLSMEYPEAKLVDLGLGALLHDIGMIMIDSAIFNSARERELTAEEREEIQKHAEIGFNILRTYREVPTKVAHIAYQHHERFDGSGYPRKLDKKQILENASIVAVADVFDAVVSDRPF
RRGYSSTEAMMIIRRLVNTYFDSEVVEAFATNIAMYPIGCLVSLNTGHVAVVTSVSRINSLSPVVYVTLDHELNFIEKPFQLDLQEIRGFKIQRRLSYEETEVVRAKIAGQKIECQNKSPKINSEKSYAVL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02342_Cyclic_di-GMP_phosphodiesterase_response_regulator_RpfG
MKRVSTDELEPGMVIARTVIGSDGRALLTENSQLSESYIERLQSLGFKSVYIKDGLADIDIPQVISNQVLSAVSSTLSNSIKTYSTKKSLDLKSLRMVVTMLLDDILSNHNLLIQLEDIRAHDDYLFFHSINVAIFSMMTAITVGYTEGKVIDIGLGALLHDIGMIMIDPAIINKSGQLTESESAQIRKHPEIGFNILRTYQEVPTKVAHIAFQHHERIDGSGYPRMLERKQILEYALIVAVADTFDAVVSDRPFRK
GYSTTEALIILRKLSNSYYDPEIVEAFASNIAIYPVGCLLSLNTGHIALVTSVTRINSTRPTVGNILR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02343_thiamine_biosynthesis_protein_ThiI
VKAVCLFSGGLDSQLAAALVKKQGVTVIGVNFSSPFFGANRATHMAAKELGIQLFVLDTGKEYIEEVLKNPVYGYGKNFNPCIDCHGYMLRKAGEFMQKLDASFLISGEVLGQRPMSQNRSALNAVDKLSGFRGLVLRPLSARLLPATIPETEGWVDREQLMDISGRGRTRQIELAEKLGIYDYPTPAGGCLLTEASFSRRLKKLLEVKPELEAGEMEILKLGRHFYLGERTLLAVGRNHSENENIQKI
ARGNDYLFKVLDRPGPLGLLRGDDDPQADEINLAAAIVARYSDARKENMAQVKIFKPGHEAFETINITPLPPDEVPASL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02344_Arylesterase_precursor
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02345_hypothetical_protein
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RILLLLSIIIAAVILANIFVKKFKWILISLGTWVLVAFLMGSVYPSLIQKLVVQPNEFNKEKPYIENAIKYTRQAYSLDRAENREFNIDYNLDISDPSHQSTIDNIRLWDWQPLRTTYKNLQQLRSYYVFDDVDVDRYTVDGKYRQLMLSVREIDQEELPQQAKTWINQRLMYTHGYGLVVSPVTEVAEEGFPQFFVKDIPPRFSTDLKIKRPEIYFGEKTDNYVIVNTEQKEFDYPAGEKNVYTRYEGKDG
IKIKSFARRLLFGWVLKDYKMLLSSDISNESQVLMNRNILERVQKVAPYLSYDGDPYVVINDDGKLYWILDAYTVSDKYPYSEPFDKQRNNYLRNSVKVICDAYTGKMNFYIADESDPIIKTYSRIFPQVYQPLTAMPESLRSHLRYPVDMFSIQAQMYRTFHMTDPSVFYNKEDPWLIPNETVEDKQVKMDPYYLVMRLPEEEKPEYILMMPFTPKSRANMVGWMCARMDGDNYGKMLVYNFPK
QETIYGPEQIESRINQNTEIAQQLSLWDQRGSRVYRGNLLVIPMGNSVLYVEPLYLQAENNRLPELKRVIAAFENKVVMEPSLDTALLKLFGQDQRVESQRTGVVLTPGELPGATVAELAKSAREYYDRANQLLRDGDWAGYGENIKKLNETISRLEEAVKP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02346_S-methyl-5'-thioinosine_phosphorylase
VEIPGCELAFIGGSSSLSIEVPESLGLDYVQVLEKSLVFSTPYGLSPEFKLMNIQGEQEERKVLSCRMHGWRSGVSRADASRQVFWVLQQAGVKRVLAEGGVGAINHLLKPRDVIIPHDYMDFSLRKDVGLEERHLLVMREALCRVMRKQLLELLEKSWKFRVFDRGVYVNTDGRHFESPAEVAFFKMAGGDIVGQSICPEVYLAREIGACYVGLYLVVNYAEGIVSPWEHEELAEIFYGESQTLARMV
FEFFRTLPPGRECNCAELRKETLLKEVYK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02347_FO_synthase_subunit_2
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YQPGNNELMGRKMYSAQYLKFLALSRLYLDNFAHIQGSWVTQGDRVGQISLLFGADDLGSIMIEENVVRSAGLEYKMKKEEMIELIRGAGRIPALRDTEYRILEVY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02348_putative_periplasmic_solute-binding_protein
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EYYRQAKNQGLLDEVPPLEILDI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02349_FO_synthase_subunit_2
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FLPENTKISHLKRTGAVDDLKTIAISRLMLDNMEHIKAFWIMLGLPVAQIALEFGADDIDGTVVEERIMHAAGASTEKGISKEELVHLIKESGYIPTERDTLYSIIREF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02350_D-alanine--D-alanine_ligase_B
VNNVLVLMGGTSEEREVSLRSGKAVYEGLREAGYEVEALDFTPETIHRIKEISPDVVFITLHGKNGEDGTVQGYLELLGIPYTGSGVLASAVCMNKVITKKLCSFEGLPTADFQVIKKRGFNRDSFNPALLMEDFGLPLVVKPATQGSSVGTSIVRESKNIVPALELAFSLDEEILVEKFIAGTELTVTVLGKDSLKTLPVIEIVPKNEYYDYESKYMPGMSDHIIPARISEPEREKVEEISCKAYEAVGCRGYA
RIDLILDREGNPYILEINTLPGMTGTSLVPDAARAAGIKFPELLDFFVKMALEK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02352_MscS_family_inner_membrane_protein_YnaI
MKSLSNYLMEQLLTFISQPALKEILIAVLVFLIFWLLGKLFYRKVLSWLLQMSNKSKSKWDETIFTALGKPMQVLIILIGLYLALDILLNSVSQEEMLLKLFRSSLVATLGWALYRLSASSSILSQEARERWNIDSILIPLLSKVLHFLIIALVIIIIAGEWGFDVNGFIAGLGLGGLALALAAKDMLANLFGGIVIILEKPFIIGDRISIPGVEGTVESISFRSTGIRTSEQSLVTVPNSALATQAITNYSRMGKRKISINLG
ISYHTSKAQIESVINKLKQMLTEHPAVDPETILVNFESFGESSLNIFLYFFTKTTVWAEYLLIKEELNLKIIEILEDEGVEIPFPSRNLYLLKTEETKS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02353_hypothetical_protein
LKENKLLFVQILLAAIILCFSFWALLATGNALYFMAILLSLAAIVFIVYILYELRNEQKPIYSKDYYFYFIDRQNSADESFFFPFREMRR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02354_Elongation_factor_G
MKVYPSSKIRNIAFVGHGGTGKTSLAEAMIYNTGATKRLGKVDDGNTVADFYPEEIKKKITISTALVPCEYKDHKINILDTPGYSDFYFEVAGTMRVADSMLVVLSATAGVEVQTEIVWEDYPTVPKLAFINKMDRENADFYKVLDDMKNSFTDNIVPVQIPIGAAESFKGIVDLLKMKALIFEAGSGKISEEEIPADMMDEVESFKETLIEAAAEANDDLLGKYLEGEELSDAEIMDGIKEAASNGSAV
FVFCGSALNNMGVSPLMDFIVNCGAAPDKNPLVAGKDMENEANLAQVFKTIADPYIGRLTMFRLFTGKLKADSVVYNANKEKEEKIAQLLIMTGKEQASVPEIYAGDIAAVAKLSVTSTGDSLTLKAQPVIMDPIEFPEPTLGIAIEPRSKGDEDKLSGALQRLLEEDPTIRVEKNAETRQTILRAMGDTHVDIILEKLSRKFGVDVISREMRIPYRETIKTSVEAEGKHKKQSGGHGQYGHVFVKFEPL
YEGEFEFAENVFGGSVPRQYFPAVEKGLIEAMEEGVLAGYPVTNIKATLYDGSYHSVDSSEMAFKMAARIAFRKGVESAKPVLLEPIMNVQIEVPEAYMGDIIGDLNSRRGRVQGMEPAGKKQLIKAQVPLAEMARYTIDLKSMTQGRGKFKMEFSNYEEVPGQNAEKIIEKAKQEKEEKEK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02355_hypothetical_protein
MIFFSLILNTAIFFIVLNFSYIKKKRENPAYPDKPVSQLILFPLALGVVFTLIVDVFRGFMLYQLLIFLLAALLLYWIFYVLKKS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02356_5'-nucleotidase_SurE
MRILLTNDDGIHARGIQALIGELGSIAELFVVAPDRERSGTGHSITVFDPIKVIKAKLAGIKAGWVIGGTPVDCVKLASSKLVGDNIDLVVSGINHGPNLGTDVLYSGTVSAAVEGVIMGSPSIAVSLNSFAADTDFSFAARFTRRVIQNLFKNGMEKKTLLNINIPYLCPQDIKGIRITRLGVRNYENLFEERQDPRGNTYFWMGGGVLEEPQEEDSDVNAVQHSYISITPIHFDLTDYRLVEQYRKSFSQ
FSHLLGDANDIF*
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LSKELRDFIKETISIIVIAFILSLILRAFVIEGREIPSGSMLQTLQIDDRVMVNKFIYHFKEPVRGDIVIFDPPEELNSSKYFIKRVIGLPGEKVEMKEGRVFINDKPLSEPYLPEEINYQFGPVVVPSDALLVLGDNRNFSFDSHMWNTWLTRDRIKGKAFMIYWPLSHFCLLEREVSFE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02358_hypothetical_protein
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LVDAYVDMYDAGRVNNKRKSIDKGKMVYTFAMGSEKLYNFMDRNPAIASYPVGYTNDPAVIGQNDKVVGINNALEVDLFGQVASESAGWRHISGTGGQFDFILGSYRSKGGKGFICLSSTTTLKDGSRVSRIRPTLSPGTIVTVPRSCVYLVTTEYGTVNLKARSTWERAEALINIAHPDFRDELVKEAQKMRIWTKTCKINP*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02361_ATP-dependent_helicase/nuclease_subunit_A
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QKWVALLLKAADQGLPALYSCLQQLSFTRLGRVYRDVDENLKNQVKILRDESKKILNAINSLLGRDPLEYLQDLNEIYPIMKYLGEIIQSFAEIYQEKKREKGIVDFNDLEHLALQILSNEAVAREYRDYYSYIFIDEYQDSNLVQETILNYIKKEDNLFMVGDVKQSIYRFRLADPSLFLEKQNSYPLQDGSVNRRVDLNKNFRSHPEILNAVNYLFRHLMSQELGEIDYDEKSYLYPGLNTKLKYEEIDDP
SSQEGKEKENTASRVEIYILENNPDLIARLEENETEEREIPGEAENEFIERIIEMDNTEMEALLIAQKIRQLLEKDIYDPKLQCRRKIEYRDMVILLRATRNSAGIFMEQLSSEGIPVYADASSGYFDTIELNLFINLLRLIDNKRQDIALLSVMRSPIGGFSIEDFIKIRTRLIPRREKQSCSFYEAMEIYMEENNDDLKDRLVFFIQRLKEWELESRIMALDEFMGKLLMDTAYYYYAGAMPGGVQRQANLRILLH
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02362_Poly-beta-hydroxybutyrate_polymerase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02363_Long-chain-fatty-acid--CoA_ligase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02364_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02365_ATP-dependent_helicase/deoxyribonuclease_subunit_B
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02368_Zinc_transporter_ZupT
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MSEIKGRQFIDTNILVYAYDCSAGNKYEKARNLLINLWEEKNGCLSIQVLQEFYVIVTRKLKNPISAQQAANVIENYDQWPLHSPNVEDLLEAINIQKQEHISFWDSLIIRSAQRLGCTCIWTEDLNNGQKYGGILVKSPFS*
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MIRGMLSKIIASSRFILLFIIISLALGLYSYYLLPKQESPEVTAPVAMISNIYPGASPQEVERLVTRVIESNIRKLPGYDFSESYSRNSISVVLLQLQNDAPVEESWNELRRILSDTQRDLPPECLPIQLNTDLAETTGIIVSLSGQHYNPEELAAMAEKFKKRLEQVAGISRFEVFGEEKKRIEVEIDHTRLAASGLSLEEIFNILQSQNVVIPPGAIVEEGIKTNVRIPGWYNSPDDIENTIIGVSPDGSSQRLKDIANIR
WGVEPDRPLARHNGQSALLLTGYFEAEENILLVGKKLRDELDKLKSEAPHDLLVDQVLFQPDEVNKNLYRFLRNLLEGIILVIIVVLLGMGWKNALVASTAIPLSIMLSFMAMYLLGIKVHEISIAALIIVLGILVDDAIVMVDAIQVGLDKGLNRMEACLHGLKQAAIPILTATLVIIIAFSPIFVLPGAPGEFLQSLPQIVLISLLASYVVAMLITPAMAYRFFTPSQHRKNDWLRRFFAYLLQESMARKRTSI
ISSLLIFSLAVYALTFMGLQFFPSADKDLLYIDINAPAGSTRAGTEELLLQVEDILSREGEVLAYTSSVGSAVPKFYITLPVSPQAPDFAQVMLRIRPQQGERFQNNEEMASYLQEKLDSRISAGNIKVKLLEKAFPVAPVQLRISGEQRENLRQAAELIKSKVKQIPGSRNVEDNGEREIQQLLVEADAEKASLLGISNYDIQRQTSLALEGGRASVLRQAGEQYNILLRSDINSRQELENLSIKSAYSKRSVPLK
EIAGIEVKPQLSSINKYDGQNSIKVRSDIRPGYSAVEIEKELKDKLSSVELPGVSLLYDGEYKQIKDNFGILTRAALLALFLIYFILVLQFHSFIQPLVIFLTIPLALIGSILGLLLFRQPLSFMAFIGMVSLTGLVIRNAILLIAFINDARARGLAVEKACEDAVERRFRPIISAVTATIGLVPLALSGSSLFVPLAIAIIFGLLVATLLTLTMVIIPVVYSLLLPERTEVKA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02393_Thymidine_kinase
MGKIEIITGPMFAGKTTELMRRLERYTLAGNNVVLFKPHIDSRTETEIATSSVRQQFSIPVLVLHKPIGIEAAVVAIDEAQFFGEWIITYVQSLKDQGKTVIISGLDMDAHRRPFGFMGQLMAIADSVSKLTAVCRCGEDAVYTWLKNSLPQPKGNLILIGDSERYEPRCRKCYASKT*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02394_acid-soluble_spore_protein_H
MNSARVKEILASSDSIEVRFKGSPVWIESLDGDRAKVQAIDSKRRFEVMVHQLVEGKQM*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02397_hypothetical_protein
LRTLIATVLTNSKGKDIYCAVKKLSDAQLDIIRKTSRLQLEEAGFTFIRLLSLEYPEVKGHAIFFEGHFDEMLRVFKSLEKGYLL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02398_Tyrosine--tRNA_ligase
MVDEKTLLTEVNRQMELIRRGVAEIIPEEELAQKLFRSIKEKRPLRAKLGLDPTAPDIHLGHTVVLNKLRQFQDLGHEVHLIIGDFTGRIGDPSGKSETRKQLSEEEVMANAATYQEQIFKILDRQKTFIHFNSSWLMQLKLADVLNLAGKYTVARMLERDDFSKRYREGLPIGIHEFMYPLMQAYDSVELRADVELGGTDQKFNLLVGRNLLREYGLEPQVALTMPILEGTDGVQKMSKSLGNYIG
VNEEAYEMFGKTMSIPDELIARYFELLTQVPMNNIMRLQEDMKSGKLNPRDAKMWLAKEIIKIYHNEEEAEKAEEKFKLVFSQRDIPEDIPVIESSEREVWLPKFLHDNSMVNSTSDGRRMIKQGAVKVNGEKYQEENLLLQDAMVLQVGRRKFCRLRLN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02399_Penicillin-binding_protein_F
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NYIDQETALQAFETPLVFKKSFNSGSRYGYFIDAVIDETLDILEAREIYEDPNNAIYRSGLKIYTTMNAQLESHAEEFFKNPANFPSEQKKGEQIQCALALIDHSNGEIKAIMGGRSYEQRRGFNRATNALRQPGSSIKPLTVYAPALEDGYMPFYTLVDEPISIKVGNTIWSPKNYDPNYRGLISMRTAVQWSVNTFAVQLLEKVGVRKSFDFGKSLGLDLVDTPGTNDLSLAPLSLGGLTRGASPVQM
AAAYGAFGNGGLYAKPHFVTRILDADGVEIYRCKPEYHRAMSEETAWLMNSMLQTVVSSGTGTNARVPGVQTGGKTGTSEEYKDSWFCGVTPGYSAAIWMGYDREHTMNKVYGGSYPARMFRSMMQKAHEIKNPKPRPMPAGIVSVSVCSKSGKLPSELCSQEQIFSDYCLKNKVPTEICDAHNMVSICPESGKLAGRYCPNPEMRSLTKEETPTEKCDIHSDFSLPALLNNEVYVCRDPRHN
GKIYRANLVNPLQSGGCPPEYLERVIVENGDSLPYCPLEDHQLKKKKAREVFDDVIGL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02400_MutS2_protein
MIVDEKTLIKLEYNKIREKMQRLSSFAGGERKAEEMRPSSDIAVVKRRLDETGEAMEAMRFSEPAFLYGLKPVESQLAKVKVGGILSPAELREIYHILSSSRQVQKLFATGKYPRLFYLSSKIAEVKGLENEINNAVSEEAELRDDASPELKSLRGQINTLRLRIRNYLQEFIRSPDTQKWLQDSLVTEREGRYVVPVRQEFRHEVRGIIHDESASGATVFIEPVAVVENNNRIRALQREEKREVERILRKLSEAV
GQYREVIEAGNQEILSEFDFIYARARLAYQGDYYRPEINVRGILEISRGRHPLLGQDAVPLDIRLGSDFDVLVITGPNTGGKTVALKTVGLLTLMALSGLFIPARENSRISVFKKLFVDIGDEQSIEQSLSTFSSHMTNIIAILEKADKESLVLMDEVGAGTDPAEGAALARVILEELMRKSSRVILTTHQSELKYFAYQRERVKNASVEFDPVSLQPTYRLTIGMPGQSNALEIASRLGLKTELVQQARQLLPR
REMEIGNMIRHLKESQSLVEKSQQEVEKLLAEIREKKQSLEQDRESFEQEKTEVMEKSRLEAERYLREIKREANTAIAEFKEMMKEKEKPPKWHEVEQARQKIRQIKVDFPGEMEKDYGINPPKIKAGDYVTIKNIKQRGYVVEGPNSQGEVVVQVGILKLNVNQEQLSPSQEKEEIISHRRHQSFLEKARTISKEIDVRGQLAEDALYIIDKYLEDANLLGLDSVRIIHGKGTGALRTAVRHYLKDHRYV
KSYRDGLREEGGHGVTVVEFN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02401_putative_protease_YhbU_precursor
MELLAPAGNWEAFLAAMGNGADAVYLGGQSFSARHYAENFNKERIDDALSYAHLRKKKVYVTVNTLIADHEFAMALDYIWDLYQMGVDAVIVQDIGLTHALRKLIPDLRLHASTQMTVHNSAGAVLLREEGVKRVVLAREMSRDELAKICCEVKDMEFEVFVHGALCYSYSGQCLFSSLVGGRSGNRGRCAQPCRLAYQLFSCTGDTPVASEGRHILSPADLCLIEQLGDLQRIGIHSLKIEGRM
KRAEYVAVVTRAYREVLDSLAVDPGSTVSPELKKRLERIFNRNFTGGCFQMDRVGYLSPKRPNNRGIYAGRVVEQSRDITTRIKLTEELRVGDGLEIWVKKGQGPAFTVKDILLQGKRVSQAEPGDIVSLKIEGRAGAGDRVFKTYDSELMEDAQASIEAASRSKLPLDILVSLQEGEPLSLLISDGEGRQVKVKSPGRLQKAEKHPLTREVLQEKMERLGNTPFYLSHLSLMGEENLMIPFSELNETRR
RGCDAILQLLRGGPLLSEDDKLAYRHLKDKYLYIPSRPSRQGNSHTQAQGKNLPLLSVTVSGIAEAYSALEAGADKVYLQIRALGKPGLHVPKKGDLKRLLQAAATANREVVPALSRIQHSSDKPRPDFLAEEGAGAVMVGNLGDLRAFLDRDISIYTDYSLNVFNSYSLRFLLDLGVKGVCLSPELSWKQLQSFGNIDKVEMLVHGELLLMISRHCMLGSVMGRKDAVCSGYCRQDSFFLRDEKGFEF
PVLSDRDCRFYLFNSRTLCMIEDLEKFLLLGPGSLRIEAYRYNEKQVSSIVRIYRKALQELSFGQWPELAEYKKQLIESSFSFPFTRGHYYRGVL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02402_hypothetical_protein
VLVFALRAIGMYFLALIMIRLLGKRALGELGPFDFVVMTGVGHTVVSVALDKSLPFYEGIVILATLALLEYIMGYLALKNQTLSHLITGKPVILIDNGQIVKENMAREKFNADDLLQELRKQGIREIEDVDKGILESCGGFSVILKEEDEPVTRRDLGINPRIQSTVPTTSTISRAEFFARQQEPLLAREGISLPGLLQSIDQRLDSICRRLDWLEERWQETSADEK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02403_DNA_polymerase/3'-5'_exonuclease_PolX
MTNRDVARILDRIADMLQIKDENPFKIRAYRKAADSIYHLDEDLAYIHKNGRIGDIPAVGKALQSKIEEMLEKGSCEYYERLAREVPEGLLDMLALPGIGHKTVKLIYDELGIDNRPDLLKAARGKRIRALPGLGAKTEYNIKKGMEMLQEASAKSTLGLALPLAEELCDYLRKSEAVEQVAITGSIRRGKALVSDIDIMAASRSFEAVHRAVSGYRGLEEIESQGIDHIKGRLAYNLNFEIIIVPPAEYLSQLF
WSTGSKEHIEQIRKLNEEEQEGDFSSEEAFYARMDMQYIPPELRENRGEIEAARKGELPNLIELSDIKGDLHTHSRWSDGAHDIGEMLQAAKDSGYSYLAITEHSRSLPISGGLNEERLHAQGKVIDALNLDLDEFRVLKGSEVDILKDGSLDFDDDVLEELDIVIGSVHSNFKLERDKQSERIIRAIKNEKVDIIGHLSGRLLNRRPGYELDREKILEAAAHNKKILEINAHPDRLDIDEETAKIAKDMGIKV
AINSDAHSKQDLKLMKYGVINARRGWLEPADVVNSWELADLLDYIQKK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02404_Z_ring-associated_protein_ZapA
MIADWQGVIFMEDKKIQINKVTVSIFNEDYVVKGDESPEYMEMLANYVDRRMRMIQQRNYNLSNTKIAVLTALNLADELNKLQEDYDELVKTLEEEKKNRMG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02405_Plasmid_stabilisation_system_protein
MANYRVDVSEPAEKDLRDIVRYISAQLSAPMTALKMMDNVEKAIMGLAVMPQKCPLVTDERLAMMKYRKLIVKNYIVFFTIDEKSKVVDVERILYARRDWRHII*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02406_prevent-host-death_family_protein
MPNIKSSTDLRNNYNEISTFCRESREPVFITKNGQGDLVVMSIETYEMLNGKLELYRLLDEGRAAVKEGRKRPLEDVMQDIRQEITDGKL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02407_Na(+)/drug_antiporter
MKKLSLLIIKEPLIRKRIFKTALPAMMEMILYMLIGVVDIAIVGRLGAVPLAAVALGAQIFFGLVLLLESLGIGAAILVAQAKGAGKRLEVSRVAGQSFMLAVVVGIAAAVLGLWLAEPFVGLFAVEAEVERLALLYIHIVFSILPVALTLYIINSVYRGLGRTDIPMTIAFVVNIVNCAANYILVYGMGPIPALGVAGSALASSLAHVVGLVMACWYFFGGRGGLKVKFRLSERLNWPIIQNIFRLGLPSMGEQF
FLTVSGLVSVFLIVFLGTTAYASHEVALAVESLSIMPGFGVAIAATALVGQAVGARDRLAVQKMARGSLELAILLMGFLGVVFFCFPQAIARIFTNDPVLITLAGSLVRIAAFEQLTIALSMTLAGILKGAGDTRTPLYVTTLATWAFRIPIMYLLIKVLELSIAWIWVVFVIDWLLRSLVFIIVYQRKRWLYRALGAELEAG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02408_hypothetical_protein
MKKALILSLILLSFSLFACGVKGNQPQNPGQKEEQQQPAEESDEAAVANLVRSFGSKLQKVSLQAPVDVLKKSMQENYSEFLSPALLEIWQNDPQNAPGRLVSSPWPERIEIQEMKKTSEGIYEVNGEIIEVTSKEKENGGFAAKRPITLVAKKFEKRWLIDSVTPGDYEDADSITYKNTFYGFNFSLPKNWKGYTIVNSQWEGLASGDAQGAAIVETGPMISIRHPQWTADNPRQDIPIMVFTTSQW
NSLQENEFHIGAAPIGPKELGSNAKYVFALPARYNYAFPTGYEEVEEILENNPLQPVEYP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02409_Farnesyl_diphosphate_synthase
MNFDLEHFQEEIKQRKEFVDNCLIGCLLPPDSDPPLIHQAMHYAIFNGGKRLRPIMVLEGAKIAGGEAEQAIPAACALEMIHSYSLVHDDLPCMDDDDFRRGQPTCHRVFGEANAVLTGDALLTAAFELLSGENGTSGIKPDTMLRVIAEIARAAGSRGMIGGQILDLEAEGKIIDYESLRKLHCLKTGQLFRAALRAGAIVGGIGEKGLLALSDYADNFGLAFQISDDILDVQGDAALTGKSMGSD
ARKEKNTYPSLLGLEKSRQLLEESIATCLKSLELFGPEAEFLRQLACYTLYRKS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02410_Exodeoxyribonuclease_7_small_subunit
MEKLSFELALKKLEESVEQLESGELELEESIKVFEQGIELSLFCRKELSQAEGKIQRLVKNLGGEFELLDFEV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02411_Exodeoxyribonuclease_7_large_subunit
MKEILTVTELNSYIANLLDSDPFLGQLWLRGEISGFRLYQQSGHMYFTLKDEDSTISAVMFKSRARGLKFKPKDGMEVLLRASVSVFARQGKYQLYVEEMQPYGIGGLFLYLEELKKKLAAKGYFAPERKKAIPAFVQRVGIVTSQDGAALRDICRILKQRHPGVEVVLVHSSVQGSEAPGELAEGLRLLNSYGEVELIIIGRGGGSYEDLMAFNSELVVQAIYESNIPVISAVGHEVDFTLADLVADLRA
ATPSQAASLAVADMQALSRQLDNYQQRLLRAMQRKLLYYTEIIDRLMMKRIWKQPRSLLHMREELLSQLEKRLSRGMTETFREKKMRLSMNVAALDSLSPLKIMERGYVLLQKEGRIIRDEQQVQIGDRLEVAMRHADLEIEVIKKERVKRWKS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02412_Bifunctional_protein_FolD_protein
MEIISGSQIAQEIRQKVKERNEQEGISPCLAMILVGGQKEDLHYVGLKEKAAAATGGKSRLLHLPEDSSQQELMAKIAELNQDEQVDGILLQLPLPAALEEQTDEILAAICPDKDVDGFSLVNRGRMSGDNPGFISCAALACLEIIERFFPSLAGKKAVLVGDSFDLIIPLATIMIKRACQLSVLPSYEPGQASGADILVVEKGRAGIVQAEGLAPGVLIIDAGFYWGAGGVCGNVDRAALEGQGFEARLL
PVPGGMGPILIAKLMENLAQAARQKRY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02413_hypothetical_protein
VPDRALRMGNTYGLSRGSRGTAPISRPWEATLLVTPSGWNTRRTRRVRRSRDLLSLAPFRLLAFAGATLIVTSAGWNIRSTRRVLHPCFANARFVYLCNPMQQKTFPSSFIRLPSSVFLHPQDELCSQGYPYRVIAAQAGGSKEEL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02414_t(6)A37_threonylcarbamoyladenosine_biosynthesis_protein
MNIFLGIDTSAYTSSLALVDEEQNIIADERIILQVGAGKRGLRQSEAFFQHIKNLPFLFARLASHFDAPVKAIGASAWPRRVEGSYMPVFSAGFSHAEVLGSFTGIPLHSFSHQEGHIMAGIKGNEALLGRAEFLAVHFSGGTSELLHVRRQQGGFLDVSPALAGLDLHAGQLVDRVGVAMGLDFPCGPELEKMARQSSGENLPLMPSSVSDKGFSFSGAETRAQKLMAEGISYPDIALASLRCVANTLE
KSILLESDKKGIKDVLLVGGVMANSIIKERLQARLEHPAVGLKLFFASPGLSSDNAVGVALAAQFILRMKEDG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02415_hypothetical_protein
VDQVQADAKKAFDYLVLHDKLAEKNQGFSWDLIHGTLEKQAEIDRMIASYSREWALDRMSSVDRNIMRVAAYEILYLEDSQAVVAIDEAIEIAKKYGDEGSGSFVNAILDKILGEKDEYFPGD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02416_hypothetical_protein
MGEKLLLLILEEHRGKALGILLGLIASILFISYGFWRSLFVIFCIILGFFIGKRIDENQSFDNWLRQMFKDRQR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02417_hypothetical_protein
MEKAWRPVLLVYNLLLLFLAGVVVAAAMGRAEPLTFINQALSTPQNRVIVGTIAIVIMAIALVMLVSGLKYENKPDSIIVDSSLAGQVSITVPAIKVIIMKAVKKVDGVKEIKPAVSTGNDGLVVYLHTAINPDYNVPEMSKSLQQTVKEYLEDIGGLQVSQVKVLVDDFSTSNKAVNR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02418_Alkaline_shock_protein_23
VEGQKPEIFNEYGTIRIADEVVSTVAGLAATDVEGVVSLSGGWGTDLVEKLGRKNYGKGIKVEVADDKTKIDIFIVVEFGYPIPEVAEKVQKEVKLAVETMTGLSVASINVHIVSVSIKKSPTDEEADSEFIVE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02419_Biotin_carboxylase
LFSRVLIANRGEIALRIIRACKELGIETVAVYSVADKDSLHVKQADEAICIGGAPARQSYLNISNIIAAAQNSEAEAIHPGYGFLAENSHFASLCSSYNIQFIGPPPEVIELMGDKVRARELVKNVGVPVVPGSDGAVQSYKEALDVARDIGYPVMIKASAGGGGKGMRLAHNESSLKNALEMARMEAGAAFGNDEIYLEKYIEEPRHIEFQILGDQLGNLIHLGERDCSLQRRNQKLLEEAPSSLLDEALRQ
QMGKVAVDAARAAGYSSAGTVEFLVDKNKNFYFIEMNTRIQVEHPVTEMVTGIDIIKEQFRIAAGEVLSYQQEDIEIKGWALECRINAEDPACNFQPSPGQVGQYIIPGGPGIRVDSSVYSGYHIPPFYDSMVAKLIAWGRNRDEAIRRMKRALGEFEVENIHTTIPFHLEVLDNAFFRKGEVYTNFIQRRMSDKA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02420_Methylmalonyl-CoA_carboxyltransferase_5S_subunit
LGKIKITDTSLRDGHQSLWATRMTTEDMLPILENIDEVGYHSLEVWGGATFDVCIRYLNEDPWERLRKIRRGIKKTKLQMLLRGQSIVGYTHYPDDIVEKFVEKAAENGIDIFRVFDALNDIRNLETCMRAAKKSGKHVQACVVYTVSPVHTMQHFVETALRLKDMGADSICIKDMAGLLSPYASFELVKALKENVQLPLQLHTHYIGGLAIAALLKAAEAGVDIIDTASVPMAFGSSQPPVETIVRA
LQDTPWDTGLDLHDLFNIATHFEQIRKHKGFERGVTRIADMKVFEHQVPGGMITNLYSQLEEQKASHRIDEVLAEIPKVRADLGYPPLVTPTSQIIGIQAVLNILMGERYKLCPGEVKDYVRGYYGKPAVAIKDEIRKKIIGDEEVITVRPADLLEPAWERSRQELGELAESEEDILTYALFPQVALKFFEYRKNRGAEDIPQISSIDTLGEELLDEETPVAIPPVVSRVKKIATHGGDDEMKLDEIRELML
LMDQSSISELEVQNDNYRLSLRKGNGPAVDKAAAAAPVNLPPALSSERVGLERDNITEVLAPMVGTFYAAPSPDSPPYVQPGEHVGPGQTLCILEAMKLMNEIKTEFAGTIIEIMVDNAEAVEYGQVLFLIEKD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02421_hypothetical_protein
MDATPGEGEQAKGGERQEVARALPPMDGRLARYPLSRETSRRCCPCVAPCRAQLMLPSVAIKDAGAEYLCKQMHNYYFLQRNHKYTSIIE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02422_Stage_III_sporulation_protein_AH
MKKEPNIRPLLVRIRWKEICLIIVIFILLLLGLMWVISGKEERTAILPLSEENKILEEFSKTADLSQVNKKETATNDFFSTYRLDRERIRGKQLDILKAIMENKDSDDKAREMASLRMVKISEEMEKEMSLESLVKSEGIEECVALVQAGTATVIVPAGALSPERKEEMRELLFSFADFPKDKVWLKEAGKE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02423_stage_III_sporulation_protein_AG
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02424_stage_III_sporulation_protein_AF
MQLLHEIVRNVLVIIILTSFLELLLPEGGIRPFVRFAVGMFIIAVLNPVLSLLFSERELKVNLWDYQPEESKSEEIIDNGQQIQQEIIEQHNEIAREKLQGQIDAVAVLVQGVEEVKSEIEIGQDGKVQTVNILLQSGRPEVKKAKDGIEVFSGEDSKLSREEMKVIEDKVISIIGNFYGLSTSQIKVEFEGG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02425_Stage_III_sporulation_protein_AE_precursor
MNKYFLLFLLLITGILIFSPLAWGGEIDNESEQLAPLETTLKNLNLNVFDEYKKNIDEEISSSMKGKTVKDLLLDFSQGQLDLKIQDIMEGILQLFFKEVRANSGLMAKLLILSVLTALLVNLQNSFSSGVAQISYLSCYLALGAIALGSFRLVLEIGHQSINNMVAFMMGMLPQMLVLTAGLGNINASAMLFPILMTTATAFANAIKNVVFPLIIMSAILSLLNHMSISLKVEKLASFFGQMARVSLGFCLTIF
AGFITLRALYASVLDKVALRTTKFVTDNAIPVVGKILSDTIEVTAGYVVMLKQALGFLGVLIIIGIIALPLIKVAAVALIYKITAAVVEPVGDAKTAAILDIMSAHIFLMLAALASVGLMFLIMISIVAGMSNGLGALR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02426_stage_III_sporulation_protein_AD
VEIAQVIGLALVTTILLLILRQEKPVMAVVLSITFSIVIFLFMMGKMAAIIALMQELTRRAQINYFFLATILKIIGVAYLGEFAAAICQDAGEHAVAKKVEFAAKIIIVVLSLPIMVAILESMMELMV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02427_stage_III_sporulation_protein_AC
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02428_stage_III_sporulation_protein_SpoAB
VLGLKIMGAASIITGFGCWGLNAARRMDRRVEQLQELRLALGFLEKEISCVYSPLSQALAKTADFSRPPVSYLFATSSGLLQEKTGITAAEAWNAGIEGLRLHSDLQEMEMGLMATASLQLGISDASQQKKLLTLLQEELALLEQKAMQQAEGARKMWTYSGFILGAMIVLLLI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02429_hypothetical_protein
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VNSGVAVICSIHARNSEELSKRPLIKQLLSQGAFRLGVVLSRRNGPGTVEEIIRWD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02430_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02431_Nucleotidyltransferase_domain_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02432_hypothetical_protein
LQDISEKVSYLQGLSEGLNIREGSPQGKIISGILSVLDEIAESFLVMQDRFDELQEYVESMDTDLQELEEKWSEGLDFAEEIRCSHCGELICFDPEVLDDEDVMEIICPYCDEVVFVNDGSFDYQPSFIGDEKGENEEHSGAPI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02433_transcriptional_regulator,_AbrB_family
MAMMSRVSSKGQITIPAEFRKSLNISGGSQVRFVMENGELKIKPVNDGIEALRGIIKVEGPQDFAGIREKVMEDKANERYKDY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02434_putative_nucleic_acid-binding_protein,_contains_PIN_domain
MNGIKIIDANIILRYLTNDVEEMASACEKLLKRLESGEERVLMPDLVLADIVWTLQSFYHQSHLEIREMLLPLLALKGMRFYSKEIARQALNFYADKNIDWTDAFVAAQMLARGNRQIYSYDKDFGRIPDIVRLEP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02435_Elongation_factor_P
MISVNDFKTGVTIELEGQAFQVVEFMHVKPGKGSAFVRAKLKNVKTGGTVEKTFRGGEKVPRAHLDKREMQYLYNDGEGYVCMDTENYEQISISKESIGEGAKWLMENMIIGVLFFQGNIIGVDLPNFVEMLVVDTEPGVKGDTATGAVKNATLESGAVVQVPLFVNAGDRLRIDIRTGEYMERV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02436_Xaa-Pro_dipeptidase
VSFWPPDKKERDDSIFAERLLRLYKLLEEKEIEALLVSKGENIRYLSGFTGGSDARLLISPGEKYILTDSRYQEQAERECPDWQLREEKPPGLKQLAELSQAYKKRIGVEAHAISYSFFMELQQSLKSDLQPVSQLVEGLRQVKDETELKLIRESARIADTVFSDICLKLKPGISERDIASEIVYLLRQKGCDKESFDVIVVSAENAALPHGQPGNRRLASGDMVTLDFGGFYEGYTADMSRTIAISKASARLQEL
YQALLLAQEKGITMVRAGQSCREIDRAVREKLKAFGLDPYFIHGTGHGLGLEIHEQPRLSPLSEAVLEENMVVTIEPGIYIAGWGGLRIEDSVIVKDSYGEVITRSDKKLLVF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02437_3-dehydroquinate_dehydratase
LNLKMCFINGPNLNMLGMREPEIYGKSSLAEIEKEMRILARQQGAEIDFFQSNHEGKIVDYIQEARGRFDCILINAGAFSHYSIAIYDALKAVEIPVIEIHLSNIYARESFRQQSLISPLAVGGVFGFGALSYKMAFLAACELLAAGQKGKG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02438_peptidase_PmbA
MEDLLREAGEKALKAAHKKGMQAEVFLSQQRSMNLELRDGQVETLKQAEEKGLGLRLLNAGRLAFVYSADLSAEAIEQAVNDAMDISRYTPADKWNSFPAGPYLYSTMELYDENIPVSRLEEKIEMAQAAEEAARRSDKRVKLIEKSGYEEGECTSLLMNSHGLYAWGKANYALLYLSLAAREDDESQSGFSVMIKRKIKDLEAGAVGQEAAMRAVRGLKSRRIDSASLPCIIEPYVMARFLGLIAHL
VSAEAVQKGKSLLAGKIGEKMASGVLSISDDATLEGLGSFPFDGEGVPSRRTSVIKDGVLMTYLYDHYSACKAGVESTGHGRRASFRHLPAVGSSNFILEAGEESPEQMIAGVDKGLYITEIMGLHTANPVSGDFSLGAAGLLIEKGALSYPVRGITIGGNLLDFLQNIDAVGNDLRSFGARFAPSVRLRSLSVAGN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02439_protease_TldD
MLEKSVLQRVLDEAMKKGGDLAELYYEEKQMSQVIYEDERVDKITSGREKGVGIRVIKEGNTAYVYTSDLSEEGLLKAASTAGKSLGKAGPVQEKAISLSGQEPGIGRTSRDLLGDFTYPDKINQLLAANQAVRDLGEEIRQVTMALSDIHKEIQIANSDGELLEDAYSRVRLSVNAVASRNGLIQSAYESAGAVSGWEILDKIDFVAMEKAGRLALKMLSAAPAPAGSMPVVLAGEAGGTMVHEAC
GHGLEADLLQKGLSVYQGKYGEMVAAPGVTVIDDATLEGHYGSFRMDDEGQAAERSVLIRDGELQGFMYDRLTASQEKKDSSGNGRRESYQHKPIPRMSNTFIAPGREEAEKIIKATPRGLLVKKMGGGQVNTINGDFVFDVQEAYLIEAGEIKEAVRGATLTGNGPRVLRDIDMLGNDLGFTIGVCGKEGQGVPVSDGQPTMRIKELTVGGTASPGGPQMKKIRRK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02440_hypothetical_protein
LKLSKREIVLSCFLGFMVIIYLYNRFCLIPLEEKTERLRDENQAWQIRIQEDEKLIQSHIEHNSAYNSLPKESDNMEIAVPSSPCIPEILSFLDISAKKNGISIIALRYSLLGSVAGQKEKTGQSSKEEVKFQELELRISAKGTYPRLLNFISAIEESPRVFVIKQCKMSSNRVQAAKEATAQTESQEEKDKSQHQYVSEEEKIPPAPSVQSLQSSTAREVEDIVLSLSLSSFFDQSALPLLVEEKEDNVYSQLQGLRNPFF
RAD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02441_Fimbrial_assembly_protein_(PilN)
MRHRSWISINLLNQEGVKAQKAAYILGLTLLLLLSGGMYYFYQSAHEEMLVQQKLNINLEARAKELSPIARAGRMEEKNEENSWRKRKFLEETRLQQISYVAVFKEIERSLPPGILLLGIEMEKGRIAIQGYAADNQELSSLMAGFREKSSFGNPLLLSSSLDENKEEIEFRVEINWGEEAD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02442_type_IV_pilus_assembly_protein_PilM
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02443_Late_competence_protein_ComC
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02444_Tfp_pilus_assembly_protein_PilX
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02445_Type_II_secretory_pathway,_component_PulJ
VNRYSSQGFTLLEVLLALSLVSLVGSGLFLLNWLMFTGSERQSAACEAHHYARTAMQWITRDILSSCPPQGGSSLNSDQLILHLPVEGKPAEEIHYFLHSNNLRRNNLALVQNINYLNFQSSSDSDLITITVESSVNNEIYRLSIAVRSRISTIPE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02446_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02447_putative_major_pilin_subunit
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02448_General_secretion_pathway_protein_F
LEFTYKVRDSRGKVLRGLQEAKDRDSLIRNLLRQGYYIISLQEVNRTSPVINRELFSLKVSKKEVLMITRQFLAMLTAGFSIIKAFKVMGQKNRNRTLKKALLKIHDDIEQGQALWVALSQHPKVFSSIYINMIKAGEMGGTLETVLKNLSHHLEREQDINAKIKAASIYPLIITLMALLVIFFIISFIMPAFVNVFASAGAEIPLPTQLLLNLGLFLNKYWIALLLAIIAIALIHRIWIQTNPGKQFTDKFLLRLPL
WGTFLSRIIAAHFARIMAILLQAGIPILQALEVAGGVVGNEVVIQAIRQAGREISEGKSISVPLEATAIFDTMFAQMIAIGEESGSLDSMFAQIADYYEQEVIYTINILLAAVEPVMIIFVAILVTGIIIATILPVFDLMKIMA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02449_Twitching_mobility_protein
LAFIKLEEILKKAVEMGASDIHLGYSQPPLYRVNGHLASLPEDLLLGKEEVQSLAREIIPHKGIMEAFQKQGEVDFAYSIPGIARFRVNLFKQRSSWALAIRIIPLKIPEWDELGLPPIVRELAMQEKGLVLISGSSGSGKSTTLAAMIDLLNQSRKFHILTLEDPIEYLHSNHNCIVNQREIGADSKSFPQALRAALRQDPDVIMLGEMRDLETISTTITAAETGHLVLASLHSGTAIQTLERIIDIFPPHQQTQL
RLQLANCLQGVINQQLLCRADGKGRILAVEVMIATPAVRNLIRENKIHQIYSSMQTGSSFGMVTMEKAMQELWHQRLISDEEASKQGLVWGRS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02450_Type_II_traffic_warden_ATPase
MPRNLLGNYPQDDNFVNIRKNPRLSKLDQDAPIVLLVNSILTQAVEEGCSDIHIEPQQQDIRLRFRLDGELYEAARLPLSLLAPMVSRIKIMAGMDISEKRLPQDGRFRAAIEEREVDFRASTLPTAWGEKLVLRILDRANALTQIMQLGFSCNNQEKLLALAHRSQGMVLVTGPSGSGKTTTLYSILTQINSIEKNIITLEDPVEYTLPGVNQVQINPKAGLTFASGLRSILRQDPDVIMVGEIRDRETA
HLAVQAALTGHLVFSTLHTNSAAGSIARLRDMGIEDFLLASSLAGVVSQRLVRKLCCYCRQEYSIEEQLAEKLGLPLDKGRVFFRSKGCQACRNTGYRGRIALQEIMLLGPEIRDLFNRGESSEDRLEKVAIENGMISIMLDAINKAREGQSSLEEVMKAIFMGGL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02451_hypothetical_protein
MVAIIDIINKIVKTLLIKSKYSSIKYEVKYVPRFFNSERSEHQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02452_hypothetical_protein
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SSLLQSFKQQLDALRGADFSEGFISDMINPYLIRLREIEEAQNSIIISRENHRAAIEVARSKIDIMNARSNMATQKEIRNLMQLNVTIQKQSLVFQYAAGLIEFIVLAYYSHSLWSHLAHGAYAVIPGWIQFLVVIAFSGNTVYCTHLMAEYMQGEHHVKNKLIATAIPLFLILLIVIAASALLSSPLPH*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02454_3-dehydroquinate_synthase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02455_Shikimate_kinase
MGKNIVLIGFMGTGKSSVGQRLAEKLKMKFIDMDREIEKITGLPINQIFRKHGEIRFRSEEKLLAQKLGHESNLVIATGGGVVLSQENIEALRENGILICLEASPEEILKRVKRKKASRPLLKKEFGEKEIKAMLEARDAFYACTDFRINTNNKEPRAIVEEITRCLR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02456_Chorismate_synthase
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LLMSIPAIKAVEIGEGIANSAKPGSRVHDEIFYNEEEGLHRKSNRAGGIEGGISNGETVWARAYMKPIPTLYKPLTSVNTKSWQEEKADIERSDICAVPAAAIVGESMLAFVIARAFLEKFSGDSLDEIRKSYSVYQAYLKRVWKWEKI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02457_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02458_Verru_Chthon_cassette_protein_D
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FVQQGALTLEILLGQKPPLDYMKEVVQDQLDKRVDPD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02460_UMP_phosphatase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02462_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02463_2-oxoglutarate_carboxylase_small_subunit
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DALKIARSVNYRNAGTVEFLLDKQGNHYFIEMNPRIQVEHTVTEIITGIDIVQSQILIAQGYKLNSKEVGIPRQSAVQTRGYAIQCRVTTEDPSNSFAPDTGKIDVYRTGAGFGIRLDGGNGYTGSVISPYYDSLLVKITSWSRTFEDAINKSQRAIRETLINGVKTNEAFLLNVLSHPRFKNGECDTGFIDASPELFDITPREDHEAKILNFIGEKVVNESKGVKRDYDIPRVPKINSNYKLNGTKQILDKKG
PEGVVKWIQSQNKLLLTDTTMRDAHQSLTATRIRTVDMLRIAEATAYFGKDLFSLEMWGGATFDVAYRFLHESPWERLAELRQRIPNIMFQMLLRGANAVGYTNYPDNVVREFIKESAQAGIDVFRIFDSLNWLKGMEVAIDETLKSNKIAEACICYTGDILDDRKDKYSLAYYVQTAKEIEKMGAHILGIKDMAGLLKPYAAVRLIKALKDEIAIPIHLHTHDTSGNGVATLLMAAEAGVDIVDTA
FSSMAGITSQPALNSVVAALENTSRATGINLDEIQEIADYWDDIRPIYSQFESDLKSGTAEVYKYEIPGGQYSNLKPQVESFGLGHKFKEVKEMYKAVNEMLGDIVKVTPSSKLVGDLAIFMVRNDLTPENIIEKGKGMAFPDSTIAYFEGMMGQPVGGFPEALQKVVLKDKRPISTRPGELLEPADFEAINDYLQGQYNLPATRQDILSYALYPKVFEEYLEFKKSYGDLSRMNSSVFFDGISQGEVCEV
ELEEGKTFIIKLVNIGKVNKEGYRKIYFEVNGNQREITILDKQYHKTFDVEIGSTLMADPNNKKDIGASIPGTVVQILVKAGDSVEAGQSLIIIEAMKMETRIAAPVSGKVGNITVQEGQQVKNGELLMQLE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02464_RNA_polymerase_sigma-28_factor_precursor
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AIIEAKRTSKDPKIGTQQAKLYTDCLEKMTGRRPMMFTTNGFETYLWDDLTSPQRKVSGVFSKADLEKLMNRRNERKPLDEIPIDDKITDRYYQKEAIRAVCENIETGHRKSLLVMATGTGKTRTASSLTDVLSRGGYTTNTLFLADRTALVRQAKNDFKTNLPDMSLCNLLINKEDKTARIVFSTYPTMLNAIDSAKNEDGQRLFTPAHFDLIIVDEAHRSIFKKYRAIFEYFDSMLIGLTATPKQEV
DRNTYDFFEMENGVPTYAYAYETAVDNDHVLVPYHNIEVRTKFLEEGITYDELSEEDKARYEEDFTDEDGEMPDFIPSPAVNEFIFNQCTVDMVLEDLMTKGIKVAAGDRLGKTIIFAQNKKHAEYIVERFNKLYPQYHGSFAKRVVCDDNYVQTIIDDFKIAEKEPYIAISVDMLDTGIDVPELVNLVFFKRVRSKIKFWQMIGRGTRLCKNLFGDGQDKTHFLIFDYLGNFEFFRTNKDSVKGNE
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02467_Type_I_restriction_enzyme_EcoKI_specificity_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02468_putative_type_I_restriction_enzymeP_M_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02469_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02470_PglZ_domain_protein
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DGMSFVDWQLIQESFADAPWKLNVNAVFSFIPTITSIARQSLFSGAIPVQNAKTFSLVDEEKQWRQYWTEHGLRDDEIYFGKTETPEIPDKIKAAGIVVNFIDDLIHRQLQGTPGMAVDIETWLKNGTLRSMIENLLFAGFDVFITADHGHTEAVGMGRFTKPGLLTEDVSRRAVIYKDFAGAEELDKFKVCEYAGTYMPKNYRYFLFANEECIGDRGKKYITHGSDSIEELLVPFVRIGVV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02471_RNA_polymerase-associated_protein_RapA
LFTVGESVIDTQSNRVVLIVEVHEFWGIKTYKAIDMATNAVYSVNAENLASSVAASAASEAFVRFVSAWCKVKNELANGTVFDTSESVLPLPHQRYALERAMTSNEVRYMLADEVGLGKTIEAGLIIKELKTRGIIERVLVVCPKGLVTQWEAEMLEKFGERFTIVSPEDYATLKKINHDQNVFTQILLVISPMDAIKPLEQRIGWTQERIDQYNDDRIEAVVAGGWDLIIIDEAHRVAGSTGEVARHKL
GDMLSKASPHLLLLTATPHSGKTEPFLRLMQLLDRDAFPNPKAVVKEQVTPYIIRTEKREAVDNEGKPLFKERHTHLVKVEWQQRHSLQQELYEQVTEYVRTGYNKAMREKKPYIGFLMVLFQRLVSSSTAAIVDALERRLDIITTQSEQLHTASIGDLADQEMEESLEEALTVLSASITEEKMQLELLLSLAKQAKNQFIDAKAEQLYEILRALSTRDADAKIIIFTEFVMTQKFIQALVEARGFTTALI
NGHMSIEERNVALRQFRRERNILISTDAGGEGINMQFAHIVINYDLPWNPMKIEQRIGRADRIGQAKDVEVFNFILDDTIENRVRSVLEEKLATILSELGFDKLQDVLNSDSAELDFTQVYMKTIAAQKYGTYYTDELSKDMEKQVGQAVKIRDIIRDEKTLMPDSQFERQQQAFHSVLRNMVTHYKTWKGYTIDPLFDLELSVSDPQIQMLLGDKIVWHQKDGIPVFEVKGVNTENGLWSLWRIS
LSDGDENQRMISLFINDNNVYRPAASKLLWDEMLHNKITLNMLGSESLDDATYCAILSRAAELTEDTFLEMKNHYYSWHEQEYKKRRYALTLRIEAADKIGIENIRVSRIKKLERQLQELQQEYNRHKSICPSLQPMLICKVKKPF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02472_putative_methylase
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ACPHCGALLDIASMETSVISEYDDVLGCPINIIEQVPVLINYSYNGKRYEKVPDHEDLLLIDKVKQTKFKYFVPHSEIPYMHQTHQRNNLAALGITHEHHLYTRKTMMIYSYLFNRAEELQIEYRNRFMFLLSACFNRTTRLVRYMAQHKEKNVGPLSGTLYFPPIFGEINVLKNINSRLKKMETAYKVDFVDEFNNDSFIISTQSAENIKIPENSVDYIFVDPPFGENLMYSELNYFTDMWLRVYGANQS
EAIINKAQGKGLSEYQQLMSKCFHEMYRVLKPHRWITIEFHNSQNSVWNALQEALQTAGFIIADVRTLDKGKGTTKQLIYSSAVKQDLVISAYKPRDSFVRQFTEHAGDPEMAWEFVSQHLQNVPIAPDSTGKIEVVSERQDYLLFDRMVAYHIMNGIPVPVDSHTFYAGLRERFIQRDGMYFLPDQVNEYDERRQELELHDEQLSLFIIDEKSAIIWLNAQLSHARQTYSDIQPKFLQDWHRSKFE
QMPELLDMLKENFLQDDDGKWYVPDLSDKADLEKLRRKRLLKDFYDIYAKGTGRIKNARTEAIRVGFDECWKERNYSLIVKVGDRLPETILQEDPALLMYYDNAANRM*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02473_hypothetical_protein
MKYSDLIQFDPIVTVIELKSADDNEKAKELVRSYVMSDNMADLVSTKIISQLKLEDVVDNKGVLVVGNYGTGKSHLMSVISAIAANSAYLEEAQNEKFRASAKSIAGKFEVLRIEIGSTEASLRAIITGNIEQDLARRGITYKFPDVGNITNNKDALMAMMAAFAEKYGEKGYLIIVDELLDYLKGRKDNELMQDIGFMRELGEIIKSTRLRFVSGIQEVLFENPTFHNVSNSLLKMKDRYEQALIRTEDIAY
VVKQRILQKTPEQRAMIREHLTPFCPLYQSMAEQLDEYVDLFPIHPAYISTFQRMVIVEKREVLKTISETISEIINKEIPAGQPGIVSYDTYWSRIKGDPAKRVEPAVHEVLQKSGVLEDIIQRSFPKPAYKPIAQQIIAALSVHRLTTVVLDAKLGLTAQNLKDELTLFIHLPVMEEDFLLTTVETVLHDIMNTVSGQFIEYNKDNGQYFLDLKKDVDYDKKIQEKADFLGEDRLNQYFYTVMYDAADLQ
LTEHVTGRKIYEYRINWTEKNIFREGYLFMGLPSGRPTAQPPQDFYVYMLPLFGSKIIDEPKEDEVYFTFQNSEKFTPLLKEYAGAKEMEVMSAQGETRSTYAKRATSTLRDIRRYLEENKTVCFYISYLGTEKPVLEYLRGARMNEITVRDVISIVASKALSSYFNERYPYYPVFKKPVTKDNQATMRAEAINAIAGKATQLGQSLLESLGLLLDGKVRVENSKYAAHYLQRLKQLPEGGVLNSSDIMTSL
NGQDMVDEKFRLSVIWTSVIWTALVYSGNCVLVGPDNKRYDATNVEEFIKNPSITYDFKRLEKPKAPAVQLLRRLFNIISINDGLIVNPNSWDDGWQELYKRSKALSEETFRYDKLFKGSLYLWGDQIVPTNLAEKYCREMDALRTLYNDVQSRWSTPAKLKNFDYSDEQLDNLTRGIDALAIAHTIEDFKASVQDIMQYLATAETMVGGNATLKTRFQSAKDKYLAMRDELMDVDYDTDKTD
ALIDELEALKKSYIDFYLEQHKLYRLDHAGLKRKQTIINGGQMSKLHQLLGIKDILSTGQYQELLNVHLNGLKACYECTATELQAAPFCSHCGYKPGDKDKPVVGKLDYIEEQLSKLVSSWTAAIFSAVDDPMLDHDKALLSKPKKKIIEELISTKQLPKNITPDFVSAVNELLSGLDSVEVDPERLEREMVSWGPVTPSDFKKKMGALIESYLVGHDEEKTRLVVKTKYKEDSGEV*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02475_DNA_binding_domain,_excisionase_family
MTNEPEKWSSLEEIAEHLGVSKDTIRAWIKKEVIPYRRIGKQYKFKISEVDAWVDSGESAKIE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02476_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02477_putative_secretion_ATPase,_PEP-CTERM_locus_subfamily
LIRSKLALNVNNPLRQRIVVKHMMSNMQKDELGGYLKTRLAFGGTHEELFTAPSMEAIYGVTNGVPRLVNSLATNCLLYACEKKQRQVDEETVYQAQSELNF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02478_hypothetical_protein
MKCLLLNAEKKRLKNLSSSGYVEYLFVPAPEAELRSATMHYLQENIANGNIPAEDAKDFQWTIKLLGNNSFDNVHTAVQEDKHVTLWLRACESQFGQKIGSIEQINHNLRAALGTTGYSQLLYEKYVTYMQISATFLIFPIFLLLFTRDSRCNMTEMLYAQPISSTEYILCRYLGALIPVLLFCYGFSILLNIISMARFIQAGWDIEYTFFFKSKAVQQGMTYG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02479_putative_ABC-type_exoprotein_transport_system,_permease_component
MRRNLSLFLWQKRMSARLRRVRDALKLIVDFWVALYIIIPLSVLVFCTYRECLIALPYWFMPEYELLLLVLLAWVTIKGNLRTYLVQADLAHLFYHPKKFNLLAGWGVISSFILNSIRVVVVVFAFYPIYLHLAGVSWNLWFYIGLWALLLRMLVLGTKFFIQQRFPKYIKWFFDPLFLIAYIAAWQMLVRPYIYTAQGLYLIIMIKILLLMLVLVVVLKYLFPVKDWEEVVNSEAFYDSTLMGSLLGYAGQP
ARKRNGYSFWSPRRLGIPFKTAYTHIYFYVKYLMRNGSLQILYLQFFAMGALVVLFPLPDGVRLGFLIAIILMLGFLLRRIIYENEEKLKAFLGTFPAGSYKKGELMLYNSILPTISILPLLAGLAGNTGWIEVVGGIVLLAIFAYALSRFLVHITGYW*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02480_ABC-type_transporter_ATP-binding_protein_EcsA
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02481_DNA_mismatch_repair_protein_MutS
MSAEKLFLTRYNSYQNLEKRYTKSFDRISNLRFFIFLAGAVFTILCSFLGTSTQAVSVLLFFLVIFLALVYKHSKVEQDLHTVRAMLEIQRRYLSRINGTWVSFDDGGLEFVDANHPYTYDLDIFGPKSLFQWISLAKTVLGRYHLKTLLANPSKNLDSIKMRQNAVRELASKLEFCQNLECHGLLINEASRDTGGLISYAEESGSLPKAIHIIRFFPLVTILALVMSISAWGLPLEVPIVLLALQLLLYFAGYQKI
SSDLSKVYSFQKSLAAFRNMFLLIESEQFKDDYLSTLKSELYNQAEPASICMKRLERISDAINFRYNLIFYFIFNLFLFWDFHCAVYLERWKIQNAKKIRTWFETIGAFEALTSLSVISHIHPEWGFPELQAHSMKIHAQDFGHPLIQSEKCVRNDIDIDKYSCIITGSNMSGKSTFLRAIGMNLVLTYAGAAVCARKFRCSIMDVYTSMVIRDDLINGISTFYAELTRINMILKQADKGQSMLYLIDEVFRGTNS
LDRIAGAQVVLRELSKKNVIGLISTHDFELCGLEKDPELNFRNYHFEEQYVQGRIEFDYKLRSGRCTTSNARYLMNMVGIHVPK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02482_Formate_dehydrogenase_H
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02483_Putative_formate_dehydrogenase
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GVTSNRDAQLSPVNKGALCVKGRFGWDFIHYKDRLTTPLIRENGQLREASWDEALDYAANRLNAVKAQHGPDSIALFSSARVTNEENYLAQKMARVAIGTNNVDHCARL*
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PTDYNLRDVIYKLGGGVKGGKKLKAVQVGGTSGAFIPEQNLDTPIDFDSMSAIGASLGSGAVFVMDETRDIVDIVTRISKFFEHESCGKCNPCREGTWRCREIMEKINAGKAGQKDIDNLMILSRVMKNAALCGLGQAAPIPIDSTLQHFAYEYSCKLN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02485_4-O-beta-D-mannosyl-D-glucose_phosphorylase
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GPSAFQAKIGPGAPPIRTRYGWLNIFHGVRSTMAGNPYTLGVAFHDLEDPTNPSKLRISAKPLLMPSASDCLVRETDYVHVPNVVFSCGALPGQDDTLAIYYGGNDTVMNAGLANIDILNEMCNVFRLDPLTGKHLYSL*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02491_ABC_transporter_arginine-binding_protein_1_precursor
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LTAKLNEALKAIKASGEYDQIHDKWLKLQI*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02494_ABC-type_transport_system_involved_in_multi-copper_enzyme_maturation,_permease_component
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02495_putative_ABC_transporter_ATP-binding_protein_YxlF
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PVLSVKGNSATLHADENLTVYADSEKLARVFNNILKNAVQYSYPHTEIIISAKTDNENLVITFENHGQTIPPDQLPSIFEKFNRLDETRKSDTGGTGTGLGLSIAEEIVHLHGGEISVQSENDKVTFTVSLPTLS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02497_Alkaline_phosphatase_synthesis_transcriptional_regulatory_protein_PhoP
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02502_ribosomal-protein-alanine_acetyltransferase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02503_hypothetical_protein
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GYEPGENEKWLIEKSNKMGMPDMQAAAKLVKNGEMKELKGDSNFETTIYIKFNGQKADSYNPRFVFNNTCGNDPNEI*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02546_UDP-glucose_6-dehydrogenase_TuaD
MSKVPLLYPDRNICIMGLGYVGLTLATVMAECGFQVLGVEIRKDIVARLQKGESHFYEPGLSARLKNVIKTGRLQVTASIADNFAGSVFIITVGTPLDEKGKVRLDMVENVCREVAAHLKENDLVIMRSTVKLETTRKIVRAILEEAGVNFELAFCPERSLEGKALQELRSLPQIVGGLTPGAAIRAAHLFLFITPTVIKVSDMETAEMIKLIDNAQRDVFFAYANEVARLCDAIGVSAAEVIQAGNLAYPR
SRLPQPGPVGGPCLEKDPHILAEKILELGLRPEITLAARKINEEQPEEVISYLHRVCSGLASFPACPQISLLGLAFKGQPPTDDLRGTMARPVLNSLQKHFPCAHFRGFDPVVRAEEIEAFGLIPCVSLEDAVRGANLILILNNHPRFAHMQIEDLSELLARPALIYDFWNNFVAKELHLPSGIGYMALGSHSRAVLP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02547_Disaggregatase_related_repeat
VATITLLPFHDSYIAEWYARDNFAGESCLNLSQFRQTGDNYRSLLKFRLDAIPGGCSIEKAELELTMYRNEVKDAIDITVQRLLSRWHEKSVNWDTQPLHSPEIAGKIRVDANTPMGALRMDLSGLVKGWHDGSIINNGLLLKGNEVENNLVAFYNSKHINGDEWPKLHISFVDGVLNAFDKEEIIIPSYPEVPVATSAPIALGPRALATFLIANCSDSCKLRARIQVGYGKCHCSTYYDVGEQISLKAR
GYPGEAVALSSWEAAEFARILLIGAGGEKVSIYARSKEL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02548_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02549_Stage_II_sporulation_protein_AC
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02550_Anti-sigma_F_factor
MNVKNYVRFEFKSLAENVSFARSCVAAFAAQLDCTLEDIEEIKVVVSEAVSNSIIHAYENRCNEKIVVLVSIMDDRSLEIVVEDHGKGIEDIEKAIEPSFSSDSSRTGLGFTFMKSYMDEMEVFSQPGEGTTVRLKRCFGKKEQEAYA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02551_Stage_II_sporulation_protein_AA
VEGIRPLLVEACFSSLQGGDFAVEIDLKVIRNTLVVKISGELDLLVAEKLRREIDSKIQSQQVKNLVLNLEKVSFIDSSGLGVIIGRYKRMNAENGRMYIVGASPAVEKILIFSGINKLVPLYRSEQDIINI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02552_D-alanyl-D-alanine_carboxypeptidase_DacF_precursor
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GLRLISVVMASPEKHGNFRDSMQLLNYGFARYAFKSLIGQGKSCGMVKIGKGMEEQVGVVAEEEVGCTLIKGEEKKINSKTTLLPYVDAPVSKGQKLGEISLYKDGDLIKEINLVAASNVGRGGLLKEIGKIFAEIYLL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02553_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02554_Hef_nuclease
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VLDVLMRRCPYLNGLSSQHFFACLEEMARESDDSALSGLSRAVLILAHQRKDVVYKARARISCVQNLLQRIPAAAKVIIFNERIETAEAIYALLQRLFSGQVGRYHSEMDERSKKRVLRRYSNSEIRILVTCRALDEGLNVPATDVGIIACSTRSSRQRIQRLGRILRRSGENSHACLYYLYIGASNEEQELMADISQELAGLIPVLDLEYDHESQSFLHPSYQLLVDRVLAYARRKAWDAEIVGELERNLERGK
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QEGREQYLATIRFFASPEEEMTLPL*
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LDILVRKDDMPELRYTRMKREDAYESIRELIDEIDTLKCVMFVFSFDRRLMDDDRWGLKSYPALWMRIQNEIEGERFNRFADIVDLDRLVDEVYTPDKIVEMSTRLARLINRYDEGARPLSLSTAEELYARARFGKVSLPRRVILSTLQGGVEEQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02557_hypothetical_protein
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ASFLFPEQYSHLESTFCIFALTASFIEDVIEGRHEYENLNSVYVERSEREPVEKVLNSIKTAAQLQALSPAEIKVVLEQLRDFHAQAYDWPANLDIEQVLKATETRGYLLRTRIRAAVELLDQLYQYGQAGDIRINELGEPQYLEDELPALDDCLLES*
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NALEVKEAIDTLKGQGPPDLEELSLELAAQMIFLGEKASSINEARELARSALKSGLGLVSWKQMVEAQGGKLNYSLPHYGLPEAAIKEKITAGQRAYVEHLNALEVGQAAMLLGAGREQVRDIIDHAVGIELLKKPGDLVEAGDTLALIHANDPGRLETARRQLLRAYRFSEQAPEKSPLIIQLIS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02559_Phosphopentomutase
LTRRAILIVLDSAGIGEMEDSSLYGDQGSNTIVNTARAVGGLELPRMQSLGLGNLDEIPGVKPVQQALGAYGKMKEKSPGKDSTTGHWEMMGQVLKYPFPTYPHAFPPDLIEEFERRIQRKTLGNVVASGTEIIERLGPEHMKTACPIVYTSADSVFQVAAHEELIPLAELYAICHTAREMLAGENAVGRVIARPFTGHPGAFQRTPNRHDFSLAPERSILDAIIEAGQQVIAIGKIYDLFAGRGVSESR
PSKSNRQGIELIIAAIKEESSGLIFANLLDFDQVYGHRNDVEGYARALEEFDAELSNIMSALKPGDLLFISADHGCDPTTPSTDHSREMVPVLVYGRECRPGVDLGIRESFADLGQSIAEHIGVPASGLAGKSFYPLIRGLV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02560_Tyrosine_recombinase_XerD
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ENGADLRAVQEMLGHADISTTQIYTHLTKSRLREVYQQYHPRA*
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VIVVINNWKKKILNFLILLVFILAFALAVPTMTGILHKQVPALGNWFKEEHPSGNPMRVEKNKQSTRFEKVMDQFVFKLQNFYYEEKE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02562_Stage_II_sporulation_protein_M
MYLKQRIKQHIRDNRWQYLLILLIFLSGIVVGSYKVSSLDGGVRSHLLQMIDKYLKGGMEGNLDGASIFCSAFLHQSKTILVIWFLGLTVIGFPLILAVIFLRGISLGFTLSFLFQEKAGAGIILSFIAVLPQNIVYIPFLLIWAVVAVNASLYILKGRNNSYLPLGTALIAYSILMLLFILVFLLGAFIEAYLSPWLLQLLV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02563_Cobalt-dependent_inorganic_pyrophosphatase
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NEPVGSTSTLVAEKFISMKLALSKNLAGLLLSGILSDTMLFKSPTTTGKDLSIAAKLQDISGLEPLSWGKAIFENSHQLDKRDDEELIYEDLKEYSSEELIFAISQIETVDLASFSRRKASLLKSMQEICERKAYAFICLMVTGILEEGTELLFAGEKSSLVERAFGLHSEEGEIFLQGVMSRKKQVVPVIYEALRQQNLL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02564_Signal_transduction_histidine-protein_kinase_BarA
MTDGFSINEMKANFDTLFNTLEDYLFIIDENGKTVYANKAVIEKLGYSPEELEGMRLLLLHPPERRDEAANIFASMIAGKRDHCPIPLYTKGGSCIPVETKVVRGQWQGTPVFFTISKDISQISQANARFSKAFSINPALMAISKIDSGELIDVNESYLRRLEYSRDEVIGKTSSELGIIPFAERDLLIKELYQQGYIHNKELTLSTKNASELYVIFSVEYIETDDQVYLLTVMVDITGRKIAEELLKESEDRWSSAL
ECSGNGVWDWDAVTNQVFFSREWKSMLGYEEYEIGDSLQEWQSRVHPEDWERIQVELQKHFDGQTPVYGSEHRLRTRDGSYKWILDRGKVIKRDEEGQVLRVIGTHTDITEIKKVQEDLSRTRGQLKAILDNLPFLAWFKDKEGHHIEVNRFFEEISCGLTRDEIIGKTDLDIWPREFALKYMEDDREVMASKKQINKEERLQDKAGGIWFSTFKTPVFDQKGNVIGTTGITRDITESSRLEHELIE
QRTFLKSLIDAIPDLIFYKDINNIYLGCNHAFAHRFIGLAEEEIVGRTDLDFVKDKELARFFMQKDREMLISGETRMNEETITLVDGSIMELETVKTPFYKDGTIAGLIGVSRDITKRKIAQNQLLIKQKILSNIAAATNELLINSDYYEAINKCLALLGEATGVDRVYMFENHYEDNKACTSYKMEWNSGIFPAQINNPRLRNIPFEQIANFLEPLMRNEAIIGRVQEFKDGLDKELLLEQGIISILALPIFVGG
VLWGFVGFDECKEERNWSEDEFSILKAFSNSIAEAIERSQMEQKLAQAKEAAESANHAKSLFLANMSHEIRTPMNGILGFLELLGETELSTEQQDYVQEAHRASEILLYLINDILDFSKIEAGKLTMEEIPFRVRTVVEDAVSLQAPKAREKGLEMHTLIKSNVPDEVVGDPARLRQILNNLLSNAVKFTHTGEILVIAETITETAEQVEIAFEVCDSGIGIAAEDMEKLFQPFTQADASTTRKYGGTGLGL
AISYELVRLMKGTMQVKSKLGHGSKFYFTACFKPGLHKDSLDFEPAELTGARVLVVDDNSSNRKIIRTYLEDAQCLVEESDSAEKAITILLSTAAKKSFDVVIVDFQMPVMNGYELAAALKAIPSTRAIHLIMLTSAAQRGDANRAKEYGFSAYLTKPVKRDELLKCVSIVLGLKAETSLGDSIITRYTIKENPVSAHPRFLLVEDNEMNQKIIKMLEKKGMYCDLASSGAEALKALQQKDYDMVFMDC
QMPEMDGYETTARIRQMEGEERHTVIVAMTANAMEGDREKCLQAGMDDYISKPVDFQLLFNIIEHYAAGQQESVSEIAAMLEESLSSFMAETGLSERDSRELYDKLWSTLPGVLEELQNAVTNDDYKKVRSLAHQLKGSSGTLRIQKLYELFLDLEQKAIAEDTAASVDTLQFIKRLVKS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02565_Stalked_cell_differentiation-controlling_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02567_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02568_ADP-ribose_pyrophosphatase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02569_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02570_hypothetical_protein
MIAIKRGKILKELFTRPGIKGYIISIDGEEARSIVYPELVGEVLPGDEVLVNTTAVELELGSGGYHYVIASLPGRNRELAPGGHIMKLRYTPMQLKVLSVEEEASPFHQVMQEADSLENTPVLVSSLHSMLLPLCLQLKEKDKELRLAYIMTDGAALPLAFSQVVDYLKREGLLQAALSVGHAFGGDLEAVNIYSGLLAARHILQADIIIVGMGPGIVGTGTKWGFTGIEQGEILNAVEALEGRPVAVPRISF
ADKRKRHQGISHHTLTVLSRVCRVKALVPLPLLEEEKMDFLWTQVREAGLLDKYHFTVENEPGILDLLNNGSFKASTMGRGVEEEKEFFLALGAAAQAALRLYRQE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02571_Peptidase_T
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ARSLRREKLDLLSTELKDIFIAEVEKRGGKAEVAVRSLYPEIRLEESEEVVQLAARAARNIGLKPRLLSTGGGSDASIINGQGIRCANLGVGMRAVHTCNEHISIEDLVNDARWVLGIIEEAARIGE*
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RGRQFWDVLRVIGDLRRKGI*
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MGLKAKTFPMPGTSEDVAMILAWEYGASLIVAVGSHSNMIDFLEKGRKGMGSTFLVRLKVGSILVDARGVSQLYKQHLPSKYLLQLLVAALIPITVILAVSPATRPFLRLILLQLKILFNI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02576_Stage_0_sporulation_protein_A
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ADRLRLENKVS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02577_SpoIVB_peptidase_precursor
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QIDVLQGKIVSASIQGIKPGKPGQPGEKIGVFNGEGEIEGKIIKNSYSGIFGKTGDEITNPLAIYTMEVAYAHQVNEGKAQILTVVNGDDIESFDVVVEKVFPERQDGKSMIVRVVDQRLLNLTGGIIQGMSGSPIIQNGKIIGAITHVFLNDPTRGYGIFMDNMLSEIPSNLNPWSKVSTNSRDTWGIIAH*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02579_Recombination_protein_N
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LENLGRLKEDEFLSRLETPLEEIYYSLQDIASQLSSFRDSLDFEPGLLEESEERLYQLQRLKGKYGQSIDEILDYLGKARLELEYLENSGEKQQELEESIAALKLRYHHQAAQLSQLRQSAAQKLQESVDMELQELNMPQVKFAVQMEPRETPGIKGMDQVDFLFSPNPGEEMHSLSRIASGGERSRFILALKKALAGIYMIPTLIFDEIDVGVGGTALAAMASKLYELSLEHQLILVTHSPQIASLAHQHFL
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02580_Arginine_hydroxamate_resistance_protein
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FFTSIDRSLQRQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02582_16S/23S_rRNA_(cytidine-2'-O)-methyltransferase_TlyA
LARIRLDSLLHDKALAPSREKARAMILAGEVRVNGQMVDKPGTTVDEEARIELKSHLSRYVSRGGFKLEKAIEDFRLDFSQRVVLDIGASTGGYTDCALQHGAIKVFALDVGYGQLDWKLRNDPRVINLERRNIRYFSREELGEAVDIITMDVSFISTTLLFPVIKELLKEDGVIVSLIKPQFEAGRDKVGKHGVVRDPAVHREVLLNCINSAQQENLYCTAVSFSPITGPKGNIEFFIQLKKEAKPCERIEE
VVEKVVEEAQQKLGGKK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02583_1-deoxy-D-xylulose-5-phosphate_synthase
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GPVNGHDLAELKAVLSNIKKMKGPILLHTITQKGKGYEPAFQKPDIFHGVGPFDVDTGTQLKKSLKTYTEIFGDFMNLRAQRDNKLVAITAAMTSGTGLTEFSRQFPERFFDVGICEQHAVTLAAGMASSGLRPVVAVYSTFLQRAYDQIVHDVALQKLPVIFAIDRAGLVGEDGPTHHGAFDFSYLRHIPNLIIMAPADENELVDMLHSAFSMEGPVAIRYPRGVGEGVRIKSERQLLEPGQSRLIV
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02584_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02586_hypothetical_protein
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EIGINKHIIMKQVWPDYILVPTPGSRGVMWQELTGRVRNSSARFVLPLFCNDNLDTILLEIMANFRWELSRSTSSYVRTSSVSDSLIGEYSDYIQFFKKNRNLTEEAKEKLRLQIEKHRNNTREIFASDYKTWINFEARGLLRLNKVARQILFQHCPFSLSIRESLEKHPLYNAQISRMNNLRNREIKILTANYARLTKNGAPLDPDLEQNLLYYQG*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02597_putative_glycosyl_hydrolase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02598_Phosphoenolpyruvate_synthase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02599_Daunorubicin/doxorubicin_resistance_ABC_transporter_permease_protein_DrrB
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02600_Daunorubicin/doxorubicin_resistance_ATP-binding_protein_DrrA
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02602_lineage-specific_thermal_regulator_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02608_mRNA_interferase_YafQ
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02609_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02610_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02622_serine_O-acetyltransferase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02623_Glucose-1-phosphate_cytidylyltransferase
MSKKEYGKFLIPKGTTLLKAMEQLENAASRNLYVVDENNCLQGSLSDGDIRRALLNGANMDASIDAYMNKTPRFIEYIDREKTKHIKALMLELNIETIPVLDNNRVVVGIITWIDLFSSHKAVAYQPKSNLVFILAGGTGSRLDPFTRILPKPLIPIDDQPIIEKIMDKFSFYGFDSFILSLFYKSDMIRAYFSDKDVIRKYQTVNFIQEEFPLGTIGSIDFARSKLTDSFFISNADILIEADLNSILHYHQDSGAIL
TAVGCVKNSVIPYGVLQTDERGLLVNIREKPSCKSIINTGVYVAEPTFLSYIEANTKQDMTDVLKSMLTAGERIGVYPVLEEQWFDIGHWLEYERTRKYFELRK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02624_N-acylneuraminate_cytidylyltransferase
MNTLFLITARGGSRGVPKKNICKIGGLPLLAYKAIAARKSNYCTRLIISTDSDEIAAVAREYGVEVPFTRPAELATDSANSMDVILHAMDWIEKNDPVKYDALCLLEPSTPFSTPDDVNQAILLYQNKNALGVLGVKQVKDHSIFVSPIGDDLNMARHYEKMRGNYHTPRQVLIHEYTMNGAIYLAAWDYLKEYHTFHSPRTYAYIMPEERSIEIDEMNDLYYAIFLVEKGLIDINIWK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02625_Glutamate-1-semialdehyde_2,1-aminomutase
MSINRYYQEMAHRYIPAGAHTYSRADDGYPVNAPPVLERGKGAYIWDLEGNRYLDYGMALRAVTVGYDYERISNAAIEQIHNGNNLTRASKIEIEAARDICELIPWVDMVKFAKNGSTVTSAALKLARAYTGKKYVARCFQHPFFSYDDWFIGDTVMNAGIPEEYKSLTLNFNFNDLASAEQLFQKYPGQIAAVILEPATTEEPKDNYLNRLKDLCHRNGAVFILDEMITGFRWHLQGASAYYGVQ
PDMVTFGKGMANGFSVATLGGKREIMERGGLFSDKERVFLISTTHGAEMCGLGAFVETLKVYKELDVISRIWQSGRMLVDGANAIAKDMGIGEYFEFIGVPCSPNFITKDKTGEASLEFRTLFVQEMIKQGVLMPWVAISYSHGDEEINITLEAIKHSLLVYRKALDDGVGKYLEGRPIKPVFRKWN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02626_3-oxoacyl-[acyl-carrier-protein]_reductase_FabG
VNKYISRFSLDNKTIIITGACGLLGREICKALAELHARIVLADIDIMAAEKLQEELRDVYGASVTAFPLDISSEDSVNKLVDELSKQEVSIDGLVNNAYPRNITYGTIFENITMDSWRENIDMHLNGYFNVSQKIARVMMQQRQGNIVNITSIYGMLGPDFSIYEGTTMTMPAEYAAIKGAIINFTRYLATYLAAYNIRVNCLSPGGIFNEQLVSFVEKYKQRTPMGRMGKPEDIAGGVLFLLSNLSSYMTG
QNLVIDGGWSAW*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02627_hypothetical_protein
VIDKNSRMNKINKIIFFISSPFNQRDYSRFGIETLEKNGFDVEVWDFTPIVYPQVEGVVIPNDPVNYDKHHKFEYKKDVILAVGKLKNVFVINFCPYTPAALFIYRALSRFKIPYSVFMANAIPFGQKRKLNIAWFYSKIKKFTFRKLFGFIFSLIPSSYLGVHPATFILAGGEKSLIYKYPVSKKTEIIWLHTLDYDIYLEEKEYVETSNNTAVFLDEYLPFHEDYFFLSMTPYSTADKYYPALCNFFDYVEDKCDV
ELIIAAHPRSHYEQLPDYFNSRSVIRGDTINLVKKSRFVIAHASTSINFPVLLRKPIVFITTNELNNSPEGYAIRSFAGLLNKKTINIDEEYNIDWEKELCVDEQAYNNYINSYIKIKGSKEKPFWEIVAERLKNYDRT*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02628_Polysaccharide_biosynthesis_protein
MTEHNDSLGKRYKYKLLTNLLGLLINLFTQAIIPRGLGPKAYGDFNFLTNFFNQIIGFLDMGTSIAFYTKLSQRPKENGLVVFYLYFSALASGITLIFVLITHLSNSYFSIWPGQGIFYIYLAAIWGILTWFIQVLNKMTDAYGLTVPSEIARMIQKLLGLILIVILYFIHRLNLVNFFYYNFAILIFLVIGFIWIIEKSNYSIAENWRINSEQVRKYFYEFYEYSAPLITFALVGLIVGILDRWLLQQFAGSEQQGFFSLSF
QIGTVCFLFTSAMTPLLMREFSIAYANRDIILMVHYFRRYIPMLYSIAAYFSCFIAVQASTVVHFFGGEYQGAIIAVMIMAFYPIHQTYGQLSGSVFYATGQTRLYRNIGILFMVLGLPITYFLIAPEGYLGLNAGATGLAIKMVALQLVGVNVQLYYNAKFLGLNFKRYLGHQVISVGSMLVIAWGTVVSINQISWMNQHMLVSFLTTGFIYSLMVMGLVYKYPILFGLNREDIVALVKSVREQLNN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02629_2-keto-3-deoxy-L-rhamnonate_aldolase
LLKERLSKNQFTIGSWLTLAHTAIAEIMCQAGFDWLTIDMEHSVIELAQAQELIRTIESYGVTPLVRVGENNPTIIKRVMDAGATGIIVPMVNSRADAERAIESIHYPPSGKRGVGLARAQKYGLGFEEYKLWLAKESIVVVQIEHIKAIENLNEILSIPGIDASIIGPYDLSGSLGCPGEFGNERVVEAIQEYEKVCYNLGKPMGFHLVEPDICQANVMKKQGYNFLAVGLDTLFLGLKCRETLHGIYE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02630_3-deoxy-manno-octulosonate_cytidylyltransferase
MEYMNNLKTRREAINLNIVGIIPARMASSRFPGKPMADLQGLPMIAHVYYRSKMSSTLEQVYVATCDEEIVDYIESIGGQAIMTSDLHERASDRCAEAMLKIEEQTGRKIDIVVMIQGDEPMLFPEMIDEAVSPLTENKDIQVVNLMAPLSNREEHEDPNEVKVVVDLYNNALYFSREPIPSWKKGASSLPMFKQVCIIPFRRDFLLKFNELTPTPLETAESVDMLRVLEHGYKVRMVPSNFETYSVDT
NEDLLKVQELIKNDPLLKLYIRNYGKG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02631_3-demethylubiquinone-9_3-methyltransferase
MREEDIRKRDVFNRYLDLSRKDAENFFANHNRFIDIQCPACNSGNYQYEFDKYGFTYVSCPVCHTLFVNPRPAFDDLIRFYADSPSTHYWVEEFFKPVAEVRREKIFRPRAEYVTEVLPNLNNGVIGDIGAGFGIFLEEIRRLWPSRLIAIEPSIDQAEICLGKGIEVQCCALEELQGFENEFDLLTCFELFEHLHTPVDFVQRVFKLLKPGGHFLMTTLNGQGFDIQLLWDKSKSISPPQHINFFNTTSITL
LLQRCGFQIVDVSTPGKLDWDIVEGMIKNEETSLERFWHLLSRQGNELCKNEFQDWIARNKFSSHMRVLARK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02632_(S)-sulfolactate_dehydrogenase
LAEEIEEEMINGQYDALIVGTKEVRKSISYKCPSLKVISRVGVGYNNIDVEYFKKHGVITTYTPFGPTDSTAEMALAFILAGTRKLRNYDSLMRQGIWRREFGLRLKDATVGIVGFGRIGKRLATLLYAFGCTILLHDIKPDLATAHAMGWEFVGKEEILEKSDIISFHVPLKDNTRDWLSYDELQLLKHPVTLVNTARGGIVNEQAIYEYLKEQPDSYYCCDVFEDEPYKGNLIELGNTLLTPHASSFTE
GSRRQTELLAIDNCIRVLRGEPCENIVERNE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02633_Kynurenine_formamidase
MRRIEYLSYPLEQNNPVYGKPDQPMTINPVKSIESGDSCNVYSFAMENHWGTHVDGPAHFFSNAPGIADYPAEFWLFSNPQVINIKVKAGQIISPGDLLEIVAETTDLLILKTGWYKYRKNSCYCLENPGISPELGTLLRKKRKNIRAIGFDFISLSSYVNRMIGRQAHQVFLNPDSEGNPILIIEDMCLGADLKGLKEVWVAPLRLSSADSSPCTVIGVFND*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02634_Phosphorylated_carbohydrates_phosphatase
MINTIIFDFDGVILESAEIKTVAFRKLFENDYPEEVEEIVNYHINNMGISRYVKFRHIFNNIIMQPLTLKQEEELGQRFSTIVFEEVLKAPIVSGLLEFLEEYYKTIQLFIASGTPEDELHTIVKHRGLGKYFQGIFGTPKTKAEIIFHIMNTCDLSMADIVFIGDANSDKQAAEETGVHFIARIHSGGNELDSCPYKIRDFYAFSEILKHL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02635_CDP-paratose_2-epimerase
MKAIVFGGSGFLGSHVADVLSGRGYEVIVFDLQSSPYLRDGQKMIVGDILDEEAVKAATTGCDYIFNLAGIADLDDATTKPLKTLELNVKGNLNIMEAALQVPAKRYVYASTIYVYSQKGGFYRCSKQASEIYIEEYNNRYGLDYTILRYGTLYGPRADNRNSIYRYLKQALEDNVVRCDGTGDEMRDYIHVRDAARLSVDVLGEEYRNQHIISGQHTMRFRDMLLMIKEITGKDMEIRFSNKKNDD
HYAYTPYSYAPKIGSKLVNHLYVDMGQGLLECMLDMDPNGKVGIT*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02636_hypothetical_protein
MKVLLVFDSHKILYPWDKLECRHLDVFPLTSNSDINQVVSELGEQLNIPINLLDSGEIVNYKAQNLRDEYIEWAAEIGNCKIGSKKLRELLMLSDGNVSAWWFSLLADKDPAKSNAFFRIVQTAAVIDQAQNGHYDLVILALKDGNFGEKLKLVLSSECIKCQLWRVNKERLFYRVKDKVKQNGFIRAAWALLTICGRLLHLRIKLPSLKQRNLETENALLFISYFPYVLPKEAQEGIFRNRYILPLQDIYH
EHGKPIVSGLIYTYIDNYSFADAVKLAKRFIHNGEPLFFYEEFLSLKLIANAFIEYMRIRIAWSKVSNKLSELVLEKKPGNDFALPFLLELLNQSFTGFYLIQGILQYYAFNNMFRKLNNQTYCLYYSEMMNWEYALIAAKRYSDSGITTIGYMHSSLSRNYLQMYHSQKELEDKNTPAGIPMPDIFACNGKGPKRMLSQYYQDIVELEALRYLHIYEYLQFDHSKQQPQRKDKFILLVCTTIDAKESITIVDL
VVATFWGNQDGVEIWFKGHPSLSVDSFMPQTGAGYDFTNYEIKYEAIADLMPECDAVLVGASTVAIEALAFGREVLVYINAGTLNQSPLIGYNECYHEIYDQASFREAIDNIRTQKEHDTLIQKLEFVKEYWSLDPHLNAWKQLLGFKIMDS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02637_UDP-glucose_4-epimerase
LGKVLVTGGAGYIGSHVVKALGEKGYDIIVYDNLSTGNQWAVLYGELVIGDILDIMMRKVFINNKIDVVIHLAACIIAPESVEQPLKYYMNNVCGTLNLLQVMAETKVNKFIFSSTAAVYGIPQEIPVTENSAIAPISPYGQSKAIIEKIINDIAKAADLQYITLRCFNVAGADLYGRIGEGKPQSTHLITSCVRTALNPISCLNVYGNDYPTTDGTGIRDYIHVDDLASAFTMSLQYLLDGGKSLVCNCGY
GRGYSVLEVMEATKKLTGVNINVAFKERRLGDPPILIADSQKLKQSLNWQPRYNDLHCIIESALRWEQKIMKNGNFIVKC*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02638_UGMP_family_protein
VIVLGVNFETHDSSVALIKDNEILFAAAEERFSRIKMDDSAPILAIQECLKQTGLKPDDINIVAISGFPPMRNWWVYAKSFIVRKTFCKGKDFKIFVRRIKGEKLVFKRGGALIVNSLFCTGVPQFLFLYLTKRIRVGHLLKGFKGKFVYTPHHYGHAASACFTSGFSDALSIVIEGYDWENSIVIDEFENGNFKQLTKTSWPHSPGMFYELATTILGFDYLKHAGKITGLAAFGDPNVAYDKVAALIWSNGV
TLEVNPLIYGFIQDYYLSNQIPGYFANCLKEDIAAAFQKRLEDVLIDLLKNALKITNKRKIVLSGGVAANVLLNQKIHEIEGVEEIYIHPAMSDAGQALGAAQYAYNQELKKQGKYLPSKCLKNVYFGSGYSDEEIKYCLDKQNIKYCYYDDIERKIARLLADKKIVARYNGRMEYGPRALGNRSILFHAGDKTANDWLNSRLKRTEFMPFAPSVLMEDRFEYFLNIQGAEYTAEFMTITFNCTNKMKQE
CPAVVHIDGTARPNFVSKENNPSYYRIIKEYKNITGIGVILNTSFNMHEEPIVCTPEEAIRAFKQSGLDYLAISRYLVQAQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02639_Methionyl-tRNA_formyltransferase
MNLNLKFLLIVQDESELVPIMLSRVLDEFRENIVGVMIISPFKHLPHPLRTIRHAFNLLGPVEFVRTAVKQIFSSKSVKSICLKNNCNITSYIYPNSPKFREIIRNYEVDILISLACPIILCRETIEAPNLCSINVHGSYLPDFRGVSTVFWAMLKGADRTGTTVHKMTTKIDSGDYFYRESIPITQESTLFGLYKNVADKGGELLVRTLHDACNDKMKTYPIPHGGQYVSFPQWTDGLEFRRKGLKYR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02640_putative_polysaccharide_deacetylase_PdaA_precursor
MINALSIDFEDWYQASFVNIPSKEWVNCRPAIIEATDLILDFLAIHAIKATFFVSGYIAQRHADLIKTIHRAGHEIESHGFWHQLAYKQTLEQFAEDISMSSTVIYEIVGEKPIGYRSPSWSTTHIPDQAAKILLENDFIYDSSLFPAKNFFYGNNNFKTDIHYYKDTNLLEVPPSTLSLAGLRIPVTGGFYLRFYPIPVMRKLIELVNTSKPVQLYFHPWEVLNSYPKRSMPLTQRFIQYYRCGSMLVILNELSKR
CQFGSLRQAYPEINQAIINRHN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02641_Methyltransferase_domain_protein
MGYTPRSKQQLIKDFITFPIRAVHIFEDDKWGLTSLASERFDYVKHEVQGYCLDVGCGRYNRFINKYLEGHGIGIDVFKYEGLTEENLVEDIKKFPFPNETFDTVTFIANINHIPPSMRDNELSEAYRCLKYGGNVLVTIANPVAGIAVHKVVRFHDIVFGTNYDMDHARGMAEGEEYYLKDKEIVSRLAKAGFINIRRKYFWTQWFLNHMFIGYK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02642_Poly-beta-1,6-N-acetyl-D-glucosamine_synthase
MDDIIIIIPAYNEAKNIFELVKTIKEYGLNVLVIDDCSSDKTASLALMAGAMIVKHPTNMGYGVALQTGYKYALSCKYKYLVQLDGDGQHNPQDILTVLQPILDGEADLCIGSRFLDSQEYKPPYLRRLGMKLFKKILKVLTKSIITDPTSGYQAMNSKIFRYLSLDTFPDDYPDADVIYMLLCAGAKIKEVPIKMNYNNEKSMHANLFNNIYYVLKMNLLLLTYCFKNIKKIEDE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02643_hypothetical_protein
MNNNQFYIPIIASLIFIIINIELIKREKLKESYGVFWIVISIGMLVVALNIKSFYIMGAFLKAGNIAWGYALATFMLFLLGLFFSVKMSLYAKHIKNLNQQVAILTLKIEEIINQSK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02644_hypothetical_protein
MDRISAITAVIVILITAHFLGYFTLKPVKKYFNSEFFLNLSSIVFGIGIIGLLTAIIGGTIGYSIIGFRIFYSVAVLGICLYWIFNYKKLNLKFNHIKIDLIFILILPVLLYHFISYLLIGLAYPNGSDSFSYLLVAQEYLRKGHFFPMLLEPLKDIMPMQDTTCLFEMVYINLLSISNLIATSLFAKLQFLIAVLITFFISKEMGSKKAAWIVVAIILTAPILAYFASESADNYFIAISFEILCIYFLWLFYKNRDFILLLYSGILAGMM
VAAKLTTCYYAVALIIALPFLLNLRLNETKELIDNKNKGKHWRLFNYSLIFMIPVLIICSVFIPILIYLKSGQLIYGLNWVPADATVSSWYGPYQKMMFNHYLRYSDIFKIYTEFPYCFAGILSLFKYYTFNPFIVGNIWSLQFFHSPLSLLVILFSLTIIFSRKVEPFYKWLASVIMLGYVAKLINYPFLLPPKSEVFQIVPATILFACVLNNSLTINTNNKKKLNKNNKKLENKQFLNKLTSNNRLLVNLFIVLLLPIYI
NAFRVWPMYSYVIDRYSFASKKEVASDFRQQWYNDNLTNKNVVFGRGQNEICYIVKSKAIPFFWESMYFVSWNVIEERMNKLHVDVIYDSSAEPNSIKPSYEKILPVIKKRDHKLYMEINKALLLYEKNYGLKQVYLNNHYKQVTSDGLGLIYVKE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02645_UDP-glucose_6-dehydrogenase_TuaD
MNISVIGTGYIGLVAACCLANSGHQVFSVDKDLDKIEKLNRGVIPIYEEGLETLLNKAQQSGKITFSSEIGPALINTDMVIIAVGTPATADGRVDMSYVNDVAESIIDLAAYPLTVIMKSTVPPGTGKLLCKRFFSRAKVPISYSSNPEFLREGKAVWDWYNTDRIVIGTENQETAEKVMELYRDIDAPKICMDITSAEMVKYASNAFLATKISFINEIANLCERVGASIDAVAPAIGMDQRIGPHFLQAGLGY
GGSCFPKDTTGLDYISSFNGYHFSLLKSVIEVNTNQRVMIVRKITQALDDLHDKKVAVWGLSFKPDTDDVREAPAVDIIKHLIAEGAHVVACDPVAIDQVKGVFTHNRLDFNTNPYETCRESNAILLATEWSQFLNLDWIRIKGLMKSPYLVIDGRNVLDDKTLQNMGFSYIGVGRS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02646_Heparinase_II/III-like_protein
VLAMNKIAYYISRAFKLIVDPDFRAFIGYFLKNRAGAINKLPQSNCQQYLLNMDIDFPFFNPTTPSNLFSGWNQKNTEWPKKVNVHLASESLDMENLGTIPWNKKFRDMEDTAALHRFAWLLPLIISNASAGVNKDVIWEKICIAINDWIFLHPNPIKIEEAWHPYTVSERLVNWIFASLACGKQPAQCSFLIESIGLQANYLSSHLEYHGEVFTGNHLSNNGRALYIAGLVLKNARIVNIGRYILLNEQER
ILEERVFLREGSSHYQFLITRNFCEVLWFAQQCGDQYMEERLTKIVEQLTRGCIFFLINKETKKWDLPLIGDISPDCSPHWLLGVPWVGSLLTGIENYLGEPPDDGWHQLFWPANRQKKISDFDSGHNIDRVVFGREWARITHKKWAVFSHINPKGYPIVAGHAHQDTGGITVHYDGFPLLVDCGRKHYLDDAEGNRGRDCWSHNILVVDNLNPAPYYRKVYTNEFLALRTGTIPEYVNENGTQ
DLEIRHGGYARSTGVGLYSRKITCNERYLQIVDKVAGQGFHNITLIFHLDINVDDILDPGEVIVFRSGFNRFKLSISKDLTSRKIWHNPSADLLYGWGSHRYGEKNPLCSVVYTGLVELPVPWMGITTLELEI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02647_Asparagine_synthetase_[glutamine-hydrolyzing]_1
MCGFLGNYHGDNGTNIPLRSLLHKVFRSSDCESFYFDKEGRLELAYVSSSLIDIKSEKQPILNETNDIVTVCSGAIYNYIELTKLLKQKNHKFKSEEQPEIIPHLYEEYGKGFLDYLNGMYALALWDEKNGRLILARDRLGIKSMYYSISNGNVRFATEIKPLLRFPDISLEIDVIGLTQYLSYGYTLAPRTVLKNIHKLPAGCWMAIENGTITNGTYWDCNNPGERKTAFKEIQTELLEAFDASIQLHLRSDV
PVGACLSGGIDSGLLVARASYYYPHLRTYTLRFTGSQFDESPLAEQVARKYDTKHKTFSVDSDALISLLPKMVWYCDEPLADSGLLPNFIINQLAAEDGVGVVLNGAGGDELFAGYTYYFPSSIEKKLLQFPLMTKVLSNIFKLLNPEIANKLNRAVAFETNQIEHYLGHITVMSKEKINKIIKGIDLEQELHETRKAYAENFRGDRLNSLLYADLKTYLTDNLMLLLDRTSMAHSIEARGPFLDYLFVEK
VMAVPGSIKTPGGERKALLKEISRPFLPMAVIEQSKRGFNSPIQQWIRGRLGDLSDRILLSKRTLQRPWWNGDYLKKIVMNPKARTLYFHQLYTIFMLEIWFRIHMDNSLPEPPDVWLEDL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02648_Putative_glycosyltransferase_EpsH
MKDTSISVVIPVYNLEHYIGTTIDSVLNQTVLPDEVIIVDDGSTDNSISVIEEYINKNPDNFIRLVRQKNSGPGAARNRGIEVAQSEWIAFLDGDDIWLPEKINMIRKAISQYPDISIFTHDEYEVDIAGNEKLKLLHKYYDNRKALFQQLYRGCFLSTSCMVVKKSALMDVGGFNINLPSAQDYDLWLKLARNNHLVFIPIPLEKYILRADSISFNAEKRYKCSLEIAYFHSEHLAQIVGGTKARWQLLRQVFI
CHYNAITTLLNQRKYVEMLEICIRLPIEIFKVMLKKLKKENI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02649_polysaccharide_deacetylase_family_sporulation_protein_PdaB
MRIRNTLGAFTSLLRSVNIISKINKNSVRIIIYHNILPEHFSILEKQLRYLKLYYNFLNDRKFREIMDGQSQTSTRNNLLLTFDDGFKSNFTVAKKILDTLGIKAIFFIPPDFINCIERNQQKEFIARNIYDGIVSVDTVSDDEEPMSWGDLEYLLEHGHTIGSHTRTHKRLSEIKDTAELEDEIAGAGDILQKTLGISIEHFAYPFGDINSINSQALAIAGKRYRYIFSGVRGFNNTYVSPRAIRRDVISLDDLLSYNH
FILEGGLDLYYYYDRKLLNSMIRD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02650_trans-aconitate_2-methyltransferase
MGDNNKDWLLPEKMLGNQKTIQTRMSAGEISEELGKNDFGAYYALLNDLPVAQRWIEQHNMTDLLAKAYIKNFHNEFKRAQSILDVGCGAGFITKCIKEAYPLVYVVGVDLAEDAIKYANKSFSNVVFIQQAIDCNFNMKDTFDIIHTREFYPFSRTNDYEYICGILTALLRNLNTPGELLIVGSTAPEHLNYSIFGFVDRIRRDSRFNNCKIQQRRIIKTKVVHLLGSNPVAGLISMCLDHLQGSHAG
CLLFEKKF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02651_FemAB-related_protein,_PEP-CTERM_system-associated
MITTAPLPEVKILIRALNRFNIQDQDLAKPWARKGDIAFWFSRSAWAMKAIVLWWEMYHKTIAPLVWLPDYFCNESLWPLRHSSAKLVFYPIDSNLMPDWDKCHELAQLSRPDIFFQVHYFGYPSEARQARLFCNENNSILVEDSAHVLLPIRGIGEFGDFVFYSPHKLLSIPDGAVLLLRTTSNFFSKSNLDKNLQIMQKVIEQLGDTSPSPWWWLTKRLIQKLPFYNWFRLRPNKVEFLEDSVSSAYI
AKSKMSKFSRRILLQIASQLPEIIQKRQENDAITKLLLGQKYGLEPLKMPTEKATPYLTVFQLSDARTSAEMFRKIIKNGHNVTSWPDIAPEVMSKPAEHEKAIYKRQTTLTFPIHQSIKPIHLIKEYSISSNEKPVCAEQYNIIWDECNQSKWENSLMAVGKSNLLQSWAYGEAKAEVEGWKVHRGMIQKSGSNIAMCQALVKSLPFVEIIRINRGPLWLRNPEASEEISMVLKLIIGQHRWNKKKVLLIAPE
LNDQAGNLVSLFNARYHKYGKECWCSAWLDLQKTEGELRRGLNGKWRNMVSFAERAGLVFKISHTDEDFFGLMDKYQQQMLERNFKGISINLLIALRKQGDSRQLLVMQAIYNETPVAGLIIAKHGLACTYLVGWNSTEGRQQKANNFLLWNSLLEMKSRGCLWFDLGGIDEVNTPDIARFKRGLNGQEYRLVGEYFCI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02652_Lipid_A_core_-_O-antigen_ligase
MLVILGRYYRVVGKETRILILYLLFTITCLSSLIFDPLGVVQTIKVFWPCVILPLILLKMRPNETNINLLLKIPLTLGVIFSLQSIALFIVIFFDLPLEPHYIFLEKLQNMPELSYGILGYANAYQYGFDGSRILRAQSWFIEPSKFAAFLLFPVLVSFGYYLRTRRRKYLRIFLVCIIGFLITFSMAGFFGLIFAILFIILMRLFKKSINSNILIRYFVPVIVCGLFFVVAVSVLNYSNQLYENTIGSQSRIEKVLSRDPGSQKILR
DASNLNITVDTIKQNPFGVGLAHTLGESKLTSPNALVYWVAAGGVAAFCILILLYLSLYYFYLSPLLTSNNSVYWSVAAAFIGMTVQGLSYGTWMDPFYMYVLAVMILCNNLWKNQKRIKID*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02653_UDP-glucose_4-epimerase
VVNKIIAIACVTGATGMVGSKIVQHLLAHGYQVRVLTRKTNYHDSKVTIVRGGLEDEEVLKRFLKDANLLFHCAAEIHDESKMWATNVKGTENLLNCTRDNNIQYLCYISTCVVVGKTDQIKVTENTPCNPQDIYEKSKCTAEQMVAQGIDGCRVIILRPTEIFDESRPGAIELPMRNSWMDRIKLFIKGGECIHLIHADNVAAAAIYFISYPFEKTQCYFVSCDEDPLNTLAGLWAFYDTIKNGRNS
ENIIPKRHLPIIIPHLLRQIWRGKGNKGNVKYSSEKLLSTGFVFPLGLDSAIKKVILEKGAKNYKNTEC*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02654_Glycogen_synthase
MSLDSIRGGGTVERTIQMSKSLAKAGHECTILTTDVGFKNEQVDNLPGINIVVFPAMLDRFYVPKLSCASYTQLKKLVQEVDVIHFMGHWIFLNVLVFHLAQRFNKPYVVCPAGELAIYGRSVLIKKIFNLLIGKKIIRNASGHVAIADNEIPRFNEYGIETKRITVIPNGIAVEDLQFRDDYGFRNKYGIGNAPFILFVGRLNHIKGPDLLLIAFNNIKKKNDYHVVFVGPDGGMLTELKNMAAKFEIEDR
VHFIGYLGGEEKSYAYYASDLLVIPSRQEAMSIVVLEAGCTGTPVVITNQCGFDEIESIGGGLVVPATVEGLQAGIESILEDRVKLGLMGCKLKDFVYKEFLWSSVVNKYIELYNRILEG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02655_UDP-glucose_4-epimerase
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DIKIIGTRHGEKLYETLLTREEMVRAEDLGGYYRVPADNRDLNYNRYFVEGQEQLSYQEDYHSHNTRRLNVSEIKEMLLTLDYIKQQLGSR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02656_dTDP-4-dehydrorhamnose_reductase
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QDRSLNSDYFRQVTGYKPPSWEELINGMYSDFCRRYKGTSLNPISNERIM*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02657_UDP-2,3-diacetamido-2,3-dideoxy-D-glucuronate_2-epimerase
MKFKVMTIVGTRPEIIKLSRVIPQLELYTEHVLVHTGQNYDFELNEVFFEEMEIKKPDYFLNAVGNSVADTIANVIAKSDLVMAKEKPDAVLFYGDTNSCLAVISAKRRKIPIFHMEAGNRCFDQRVPEEINRKIVDHLSDINMTLTEHARRYLLQEGIAAETVIKTGSTMKEVLQYYMPKIQESTVLERLGLKRGKYILVSAHREENIDSDKNFKQLVLTLNSLAQTYKYPVIVSTHPRTRKRIEEQPELLF
DEMIHFLKPLGFFDYVNLQVNAFCVVSDSGTITEESSILGFPAVTIREAHERPEGMDEGTLIMCGLKESNVINAIAVVTAQFKAHPQGIQIVKDYDADNISQKVVRIILSYIDYINRTVWYK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02658_hopanoid-associated_sugar_epimerase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02659_putative_glycosyl_transferase
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RINCEELATKCGLNNVIFYGQRPIEEMPDFYSMADAFLVTLKANKEISYTLPNKVQSYMATGKPIIGAIDGETRLVIEEAGCGLCCKAEDHIALAGLVRGFAFNTENHSIMGKNARKYYRETFDKKIFMKSLIEFLTIENRVSDYLR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02660_putative_undecaprenyl-phosphate_N-acetylglucosaminyl_1-phosphate_transferase
LTRVILGLILVVLASYFLTALVRFYTIKKNILDIPNERSSHSIVTPRGGGLAVVATFIFALVFIAAFGIVSVNVAAALGGGGLMIAAIGWIDDKNSVSPRLRLAVHFLAATWALYCLGGFTRMDIGFTTIQLGWIGSVIAAVGIVWLINLYNFMDGIDGIAGTEAISVALGAGVLLFWTGSAGLAWVCIILALAVGGFLVWNWPPARIFMGDVGSGFLGYIFAVLAIISEKSSSIPLIVWLMLLGVFITDATITLFR
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02661_ATP-dependent_transcriptional_regulator
MEYQVFISYSRYNRAVADKIIEELESAGIRCWMAPRDIAPSRQYAEEIVKALEECTVFVLVLSPRSDSSWHVQRELDRAIGEKLVIIPFLIEDFTFSKAMNYYVCTCQYLYATIPPLDPHILKLRNLVCSILNEGTQMQVAVDASYLVAADIASPRELINHEIQSLLYDYFDRPNWEEQLRSSIKQYRKVFIYGAAGVGKTTLAARMAEQLKGGFFSCSAAYRGRLEAIAVLRAYYDFYQPFGYELPLPSHVEIE
DIYNVLSLLSNAKFDGLLPPFFVDGLDELPAEEFRRLVELMGRFANPCIPLAFFSRSKAHARVLHEYFHPLFHELLLEPLNRDELQQWLCKIRPSLKQVSDTFIDRMMQFSEGNFLFLKGLPNSTNEEDYLRFIEQIPCGLESVFEKLLNRLESENDNSINALCLMALLPSACSRELLQVFLGFHGRQQMRLLLDTLSPVIKEVEKGRYILFHAWFNEFIRTALAREIRIVARELFARMDDCYDLIYPLRDVPSI
FIECKEREGLLHWMELRIQELENYVLEEIEGSSVRYEMLAAITRGFLLLHQADKKVFVRAVGILDRFIACNFQVMLDWRLGGQIEECLKTCLKVSGVEDYPRVALLYAAVLYSSGQYAQSLELLKWLKELFTPGSRDSLRCINYIGLNRGALAENDKAIDAYSLLLASSSQDIGNIWTGYALMNRGKLYMKLGNMKACLSDLKKATEVRELVVNDEDCFLNNRSDISNTIQAELTLAMGYENLAKAYLA
LAGDGDNLARKEAMRYIEKLALYMDSLLDVYCDPKKPAV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02662_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02663_hypothetical_protein
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MQENFDAIILGGGINGCAIARKLSREGKRVCLLERDTIG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02665_hypothetical_protein
VEERRISFKIDGAAVIDQSISFRLLSKLLDGIQNTFFCIGLALTEREAKSTGRIPNYIQQACELRRVIEKPGSYEVVAEVADLYQNNLFDFDLGKKTLDSFNILINSLSENDANTISTTFPDSIHRRRILRSVETYCPRVGDEWEIVFKDTLRQKSNILNINVRELIQQAVSPPDIEMMTVTGKLMRLHLDEHKIAIYYQPTGRILDCYYDIEIEDFIIGNLKDLIQVTGHVQLDASGHPEKIIDANSISELDLSPVKY
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02666_hypothetical_protein
VGTRKKDYVQNGLKRKGFKLSNNDHAKFTYITQEGLKTSIWTKTSFGSSHKDISDDNLSKMAKQCRLSNKEFMRLVDCSLTREMYEIFLKENRHIF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02667_hypothetical_protein
MFEDLARTYMREYRIAIGAEPLPFIGMFEGSVNKLHEVVKEIRKILDVPIDWYNKHPDYNSAFNFLKSRIEDVGVLVMKNGIVINNTHRPLDIREFRAFLLFDELAPLIFINNKDSAGAKIFSLIHEFTHLLISTDDSRPILYQSSARY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02668_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02669_hypothetical_protein
LKQEFFTDVTSGDKHVVDILVQTRLKEEPGIILVHVESQASIQRDFAERMFIYFSRLYQEHRCRILL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02670_hypothetical_protein
MNHQNHNNRQDHSSSLSGSNRQIRGHSNQGEMKETPKMYLQFNINLRDRLAQGNNIFYEYY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02671_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02672_poly(hydroxyalkanoate)_granule-associated_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02673_putative_ubiquinone_biosynthesis_protein_UbiB
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02676_Regulatory_protein_AsnC
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02677_Putative_N-acetyl-LL-diaminopimelate_aminotransferase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02679_Replication_initiation_and_membrane_attachment
MENKMAWLEIFRWGFVSLPGMLFAYARELDLELEDIAVIAALLYTIERTKPLYQTGIKIGQVLQACPSLGKIKISRRLNRLQKLGIVSLQDNQNLADREVFLEPLARKLESLIRRDHSCFYHSTPAPADNPSPSKDMDNLLEEYRLKIEQLELQIEENKLVSRELMKQSSSDFKKVGDFIAKKTGNLMSVKMAGELNKWLEELALSPEFLLCILEMCFERSIYNPRDISQIARDIKEYSINTVEGLESYFKKYVD
VEKNRALRVNKFDPDIAEFGSFTGIDMAAEARKKVYYKWRHDWGFSHAMIMKAGEVMCQRTKNAGLEYMDSVLHDWMSKEIRQVEEVDKEIAQLKLRNKKEKPIAASNYDKRKPINLEYEIYVPPSSTGGAKNKV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02680_Replicative_DNA_helicase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02682_Spermidine_synthase
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DLGYLKYYNEGIHRAAFCLPLYIKEMLKN*
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FNVNFAAQIAAQAALRDIDFVEKSRQLNFQGRDYLYQEFEQLGLNYVKTNTNFIFLDTGRDCQQIFHELLQRGVIIRTGDIFGYPTFIRLTIGTMAENIRFIKALEEVLEVVPL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02684_putative_sporulation_protein_YyaC
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02687_Spore_germination_protein_B1
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FPTVGSSERPDVVAARILESRAAILVDGSPMALTVPFLFIEGFQNPDDYYARPFFAALVRWVRLLGYLLSIYLPGIFVSLKTFHPELFPTQLLVSVAAAREGLPLPVVLEALLMLLLFEILREAGLRMPRSLGQAVSIVGALVIGQAAVSAGLVGAPMVIVIATTAIASFLVILFAEPGALYRFIMTLAGGLLGLFGIVLVSIEMLSHLASLRSLGVAYLSPVTPLNIRGLRDTFIRAPLWAMDSRPASLDSPNTRR
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02688_Spore_germination_protein_A3_precursor
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02693_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02695_Cellulosome-anchoring_protein_precursor
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AGGVLQPEQSISRAEAAHLAGTLFGVAASEPAPFKDSLPEWAQKGINKAYAARIIQGYPDGSFQAGNPLSKAEAIIIILQNCLERYSKFPLLN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02696_putative_nucleotidyltransferases
VEKSILVQLQKDRDLIKQIAGKHGARAIRIFGSVARKEEQADSDIDLLVEFDENASLFDLINLKLDLEEIYNRKVDIVTPDSLHKKIAVSIMNEAITL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02697_hypothetical_protein
MKNDLLYIEHILTSINKIEQYSSSGKMLL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02698_hypothetical_protein
MSSPIIQDAVIRNLEIIGEATKKLSSQFRQENPQIPRKQMAAMRDVLIHDYMGVDLKIIWNIIIRELPPVKNALNQIIC*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02699_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02700_hypothetical_protein
MLPFIFYLLSARHISLFGSFNMKYQGILLYNGYDLTTHQAGPGITHFPLFILLEWN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02701_hypothetical_protein
VANNLHYSASLTGEPFLFYESRQVARLKLAGLSDKEIRMEIKKHNLFQYATEKSIPKRSNTALKRINALDEVMLTYLAEKPSATARLINLYAITKTNRLMLELVSEVIGEKFASNMPLEKKDLNEFFLMKREQSQEVAAWKDLTIKKLKQVLLRILKESGILDESDSGRLHRISLEPEVVGHFAESGELHLLKFMGINT*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02703_hypothetical_protein
MLLREMFVKNIDREIKGVIKVAQDDETNRFQELDEYVVTRELLKHFSSFYQNYQKGIDGFTDEMGVWISGFFGSGKSHFLKILSYLLDNEEVKGQKPADFFADKIADPAVYADIQRAAQINCETILFNIDSKSPLGVKSDKEAILKVFAKVFYEHLGYYGDDFKVVELEKFLSKEGVLDKYQANFAAIKGEPWLERRNCFLFDEDAIVEALIKTTAMSEQSARNWFNHNRSQDISIEQFAREVKEYINRQG
KNFHLIFLVDEIGQYIGDNPQLMLNLQTVVEDLGTHCHGKVWVIVTSQEDIDAVTKVKGNDFSKIQGRFRTRLSLSSASVDEVIKKRILEKNDFAQDKLKLLYQENSAALKNLIHFTTGTVADLKGYSGEDEFSETYPFVPYQFKLLQEVFNQIRRHGASGKHLSEGERSMLSAFQDAAKKLAGEEDGVLVPFQAFYDSVHEFLDGSIQRVIARATEGAAKGEGLEAFDVEVLKLLFLIRYVGDIPPHV
DNIAMLMVSSIDEDKLSLKSVIQKSLTRLIAQNYVQKNADEYRFLTDDEQDINREIRNTFVDSTLVVSEIGRYIFNDIYEDQKYKYSQRYPFSFNSKIDESTIGHQSARIGLRVLTSESDVFDADDAALKMASAAANDLIIRLNDNSDYFDEMHQALKIERFDKIKKQEGISPNLKKIMLEKQEEAAERKKRAKSMLEEALLNGRYYVNGERIEARGASPKERINHALKMLVDSVYYKLPYIKKYLDSDADIEAI
LQGDKEQLTLAGEGSAPNHLAAEEVMSYIDLQDMKHLQTSMKNILDKFEDQPFGWREIDIAGLVANLFKQKKIRLLYQGNYLESDDKSVVTYLRKKTEVDKLLLKKRVNVDPDLIKVARDLCKELFNLIDLPSDEDGLIKRILEEIKARKLQVHEEYLSQYAGKKYPGKEVIDQGLIIFKEIEGCKQDHISLLNKLKEHEDDLLDWDEDMKRVEGFFKNQRQIFDKGLAILERINNNQSYLQEAGFM
SKARELAEIVDAPSPYSKIIQIPELAAWLEEQYQELLDSKKAGSRSKIEKDCTILLKILEHYGLSHEDRRSYWENVQNWYQAKYLYIDESLNFERLDAVIIQSVDFCEKIQKEIEQAAKKQHPPSTGTGTGVEEPELYVIEYRDLAFAGSLQTENDVEQYLEHLRRRLKQLIRESKIIKFMP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02704_type_II_restriction_m6_adenine_DNA_methyltransferase,_Alw26I/Eco31I/Esp3I_family
MNKSFIRSFAVNARNELMERVQQKSYELGISEDKIKKARIESSDALYINGKALDPTQVKQRNSLIEAIRSRGYKRVIEEVAYTWFNRFCALRYLEVNNYLPSKTRVLSSTVPDSVEPDIMREALHLDLDIDKNKVINFKKEENDSNSLFKYLLIKQCNSLNKILPFLFEPVEDYSEILFPDNLLQEGSFLRAMTDPENIPEEDWQDVEIIGWLYQYYISEKKDQVFAELKKNIKISPENIPAATQLFTPHWIVRYLVE
NSLGRLWMLNHPESRLLEQMDYYIKPESSQPGEPPFLIIRSPEEIKICDPACGSGHMLVYAFDLLYAIYEECGYQAAEIPGKILAHNLYGMEIDKRAGELAAFALTMKARSKYHRFFRQPVPPHICILQNIPLEKDELQSYMDEVGENLFTAELNTTLGQFEEADNFGSLIRPRMKNVSDVRQLLEDKDLGSNLFLNATHGKVLKALQQADYLSTKYHVVIANPPYMGGRGMNGRLKVFAEKNYPDSK
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REGLTWSAVSSGRFSCRKVTNGVIPGTGSKTLYDLDKNKLSIVYSILNTKVASYYLNVFSPTLNFEAGDVIKIPITKSIDHNKIFSHRLFVISRLDWDSYETSWDFTRLPLLQAEYHQPYLQESYSALRKHWREMTREMQQLEEENNRIFIEAYGLQDELSPEVPLNEITLTCNPYYRYAVNKPDEELEALLLLDTIKEYISYAVGCMLGRYSLDKEGLVFAGGEFDPRQYKSFPADQDNVIPILAEDYFQDD
IVTRFAEFVRLTFSATTLEENLDYIADTLGRRSKETARDTIRRYFVNDFYKDHVQRYKKRPIYWLFTSGKEKAFNCLVYLHRYQPDTIATLRTEYLHRLQEAVEVEKQQQRIIAEEAGSSSARRAAKRLLQLDRQLLELKNYDELVHHYADMRISLDLDDGVKVNYAKLQELLAKI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02705_PglZ_domain_protein
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NCIFFVDQWMNHKSDAAAYERLAVSIEKAFNIGEYLEDLALEDLSQCDSFEAFDKLFLNYMRDSIIKQAENYDLCLGFIGTRRSRHWYYKYQHIYEALYYVFKILQFMQTHPSIPVLNRQELWQRYVEEYYFMDLYRHFYWNYDQAPVEALKAIREVVENIYSNWFLEGLGTAWSAALTAEQNKRWSIAGVQAQQEFYKKELAPRLKSGGRCFVIISDALRYEVACELAQRLNAETAGMAQLRNML
GVLPSATKYGMAALLPHRELILNEKQKILADGNKTDSLLERELVLKKEWPEALATDFQTIIDLNKEQRRELIRGKKLIYLYHNSIDAIGDKAAAEIKVFDAARESIKEIYRLIRIIRDDLGGVNIYITADHGFLYKRDPLLESDKIKKETLGAWEEKRRYMLGYQEYESDALMMFKADYLQSEQGPPVVYVPRATIRFKVPGAGANYVHGGASLQEVVIPLIKYKAARGSNARMKEERKVKVKLVNESRKITN
NLFSLDFFQTEKVGDRYLPRSVEVYLEDEAGLLLSNREIIIADRKSDKAAERTFKLRFTLKAGNYDKNKDYFLVIKDCETELIEDRILYKISLAISSDFDL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02706_hypothetical_protein
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TTVANLFYNMASRAIGLVGLWDCVAFDEVAGIRFKDKDGIQIMKDYMASGSFARGKEEKNANASMVFVGNINESLDFLIKTSHLFAAFPEEMANDSAFFDRMHYYLPGWEIPKMRPELITSNYGFIVDYLAEYLREMRKQNFADAIDKYFKLGNNLNQRDVIAVRKTVSGMIKLLYPDGNFNKDELAEVLRYALVGRRRVKEQLKKIGGMEFYDVHFSYIDRESLQEEFVTVPEQGGGKLIPAGLG
KPGHVYVVGKNDSGIIGVYKLENQVVSGSGKFERTGLGSRKEVKEAADTAFRYFTSNCKSVSSGISTKTKDYLMHASDLQGIGITSELALAEFIGLCSSALERPVQECLVVLGNITMAGTIEKISDFANVLQVCVDAGAKRILIPAVSVVDLQTVPPELLIKVQPIFYSDAIDAVFKALGAI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02707_PD-(D/E)XK_nuclease_family_transposase
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ERELYELRRKAILDRNSALFEAKLEGKLEGKFETARAALLKGADVEFVAEITGLSLDEVQKLKVE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02708_hypothetical_protein
LSDSIQSILNNPNILLPLIIWATIWKGLALWRAARLNQVAWYIALLIINTIGVFEIIYLIATNKKYKESNGCVS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02709_2-dehydropantoate_2-reductase
VKYLIIGAGGTGGSIGAFMTEAGKDLTVIDRGMHLEAIQNHGLKMETSRKGNYTVYPMKAWDMEHYNEHPDVIFNCVKDYSLMDTIPFIKRAAHKDTIIIPILNIYGTGGRMQKLLPDLLVTDGCIYISAEIKEPGIILQKGDIFRVVFGVRNPEDYRSVLEQVAADLEDSGITSIISDNIRRDALQKFSYVSPMAACGVYYDINAGAAQREGKERDTFIALMREIEALAQAMDIHFNVDIVESNLEILDNL
SPTASTSLQRDLKQGKDSEMNGLIFEVLRLGRNYGVNLPTYEMIAEKLGFKAENR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02710_Long-chain-fatty-acid--CoA_ligase_FadD13
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LLRGVKPEWIIKTVSEEKITIVWLLVPWAQDILDAIERGDVKLEDYDLSQWRLMHIGAQPVPPSLIKRWKQYFPNHLYDTNYGLSESIGPGCVHLGTENIHKVGAIGIPGYNWEVKIAGENGCSVTQGEVGELAVKGPGLMKCYYNDPEATAAVLRDGWLFTGDMARMDEDGFIYLVDRKKDVIISGGENLYPVQIEEFLRAHHAIKDVAVIGLPDKRLGEIAAAIIELKPGHSCTEEEIRAFCAPLPR
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02711_Inner_membrane_protein_YbaL
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AFVILFFVAVGMLVDPLALLDNIHLLLILLAVIIPGKLFLFLIVKFLSYHSRIAFLVGMGMAQTGEFSFVMAKLGLDEQLISSDIYNLILASSIISILLTPLFIRMAPLCYLKLSRTRVWQKLFPEADLEESEFDSSELQGHVILVGYGRVGKNIGQGLQQIGLNYIAIDYDHYHSIRSLNEAGIPYIYGDASNEVVLAQARPDLARLAIVALPDLFSNRQATYNLLKLNPNLIILARAHNEWEKEILYQQGAEVIQP
EMEAGLQLMRYLILHLNLPLEEVDKYLETLYIKDHEAIIHKKDIIAKREKNLKVREFSVGPGSPFAGKKLIESQIREKTGCNVVTIKKAGGELLLNPSSKETLDRDDLVVVMGDSRQILKFAQLNGGELQHG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02712_hypothetical_protein
MYLAYGYVKLFFPYSSSLKEKRKVINSIIDRIRKRFNVSISEVEHQDLWQRSTIAFSAIGSGYPELELITNAVKETFYNYAGDLEITELKHDIQKLDMYPQSILP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02713_aspartoacylase
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MNSGISTSYRKFSLLRYPTRGSLSRAAGQYLGVKSFIFETCSRDNLSTRINYQLRAADILLGSLGMK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02714_hypothetical_protein
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VENIKQALNTASRMAPYRNVKWLAGSQPVGGYSIGGHIHFSNIKINAALLRALDNYLGLLVFLIEDPIPAIKRRKKYGYLGDYRLKDYGGFEYRTPASWLVSREVSAAVLCLAKIVSSRYHYLNKNFLNSPEAQAAFYEGNHSFFRKNFTEIWSDLKRTELFPLYAQELEIFREMIENEVQWNEKADFRKAWKIYAGGKAVSPAKKEGKSARANQGGSITANNSVSVSSSPSRRAHSQYNIRTTSSAITRSSQ
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02716_Ribosome-binding_ATPase_YchF
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02717_hypothetical_protein
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LLALAVTGIFFILSLAEIILR*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02719_6-phosphofructokinase_1
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02720_Putative_serine_protease_HtrA
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02721_Endospore_coat-associated_protein_YheD
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02722_Endospore_coat-associated_protein_YheD
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02723_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02724_Modification_methylase_DpnIIA
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NNKHKFIWITDGKGWISTKNSLKETFEHIDYLLNLDMLEKGLLADIIVNDL*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02729_hypothetical_protein
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MPSSREEIIRRIIGLEDRISRCFRCKSLIKCTGRPSLGKGELEPELMLVFESENRLTRDSKKLIELRRFIQDEFKLKDIYHSFLVRCHPKACTLQKSIAAYTDYRLPSERYIDNYNICLLKQEPCSGILVRPGYEEILFCLPFLLEEIDILHPRYIILFGQRTAEFVLRSFGIFGDIANNQHFEKDGMAFIFVKYPQEDFALQDLKALQRIFHKASS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02768_hypothetical_protein
MEENIFDSFGIPPTIFGTKEWQDIEKKENTLGADMLLAEIIEKKIWSNEEILWVMKRLIFFYGKKDKLLKKTPIERLFVNMVDILRAFYVILDISNPELDDNMRSYISTKLADATWGINLRTREYLEKLKDN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02769_D-gamma-glutamyl-meso-diaminopimelic_acid_endopeptidase_CwlS_precursor
MRRIWAIIFMLPILLLFNGTSLDASEAVYIVKSGDSLWKISSQQGITVKEIKELNNLTSDSLKIGQKLLLKGSIGVETGDSLGQESYTVQAGDSLELIAQKFAMTVARLKELNNLNSDILNAGAQLRVENRNLANPSRAGFPLDGRLIIEKAAQYLGTAYRYGGEGPAGFDCSGFVRYIFSNFGYNLPHNAAAQFKSAYELDSSEMMIGDLVFFACGGKGIDHVGIYSGDNKFIHSSSPRSGGVIYSSLTEGY
YAGKYVGARRILR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02770_Histidinol_phosphatase_of_the_PHP_family_protein
MLYDLHIHTSASDGLLSPVEVISQARDIGLPGLAITDHDTVDGLEEARCFMEENSPALDFIPGIEMNTELAEKEIHILGYFIDYHNRLLLKRLQEIKEARLDRARKMIMRLANMGFNIDMEQVERIARGDLIARPHIAQVLMENAYVSSVKEAFDKYIGKGCPAYVNRYKFLPTEAIELIKGAGGIAVLAHPGLIRDDSFVVTIISLGIEGIEVFYPEHNHGQVLKYSQLSRENRLLITGGSDFHGYNQDENR
GRIGSCGVNPEIMRNIFDYQQRKTKNQQEEH*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02771_Membrane_dipeptidase_(Peptidase_family_M19)
MQIVDLHCDTISEITASDEALLSNGRHFDLLRAKEAGVSLQVFALFSSSREADSSLREILMQIDKFYQELEQNSSHVFQILGSNELQRVGQTDKIACLLHLEGADAVGSDLAVFRQLCHMGLRSIGLTWNYSNQLAGGIAEGGNAGGLTCQGKIILKEMERNGILLDLSHISEEAFFESLECYNKPAMVTHANARALCNHPRNLSDKQLKLLAENGGVIGLNQVAHFIKEGKATLEDFLNHAVYISDLI
GVKHLALGSDFDGTDSLVLPGVEAYATLEQSLYNRGFLPQEVEMIFQQNALRVMKRVLNAL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02772_Stage_V_sporulation_protein_S
LIQNIDKYKGAIYLFLYFLKGVILVEVLKVSAKSSPNSVAGALAGVLREKGAAEIQAIGAGAINQAVKAIAIARGFVAPSGMDLICIPAFTDIKIDGEERTAIKLIIEPR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02773_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02774_metallophosphoesterase,_MG_246/_family
LNILVIGDIVGRPGRKAIRELLPQIQKDYKIVFTIANAENAAGGRGLSREVMKELLSHNIDVLTMGNHVWDNKEIFNFIDDEYRLIRPANYPPYCPGQGYHVYSAAFNQKITVINASGRVFLPSLDCPFRVVDEIVSELQEESDYIIIDFHAEATSEKLAFAHFFDGRVAAVLGTHTHVQTADEKVLPGGTAYITDLGMTGPVDSILGMQKEQVIEKIIFQRPVRLEVAKGACQLQAVVLNFDEASRKCISI
TRISQQLPAF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02775_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02776_Ribonuclease_Y
VIEIDLTSFVIITLSLAVGLIGGYYGRRFLAESRIRTAEEEVAKMLDEAAKEVEAKKKEILLEAKDEIHRNRQDAEKDIRERRRELDRVERRIIQKEEMIDKKTENMEKKEQVLLEKEKETEKTQQDLQMILSQQLKELERLSGLSSEEAKELLLYNVSQQIRQETALLIRGIENEAKEEADKKAKNIVSLAIQRCAADVVSESTVSVVPLPNDEMKGRIIGREGRNIRTFEALSGVDLIIDDTPEAVILSSFDPIRRE
VARVALGNLVSDGRIHPARIEEMVEKARKEIEQEIREVGEQAAFEVGVHGLHPELIKLLGRLKYRTSYGQNVLRHSVEVAHLAGIMAAELDVDIMLAKRSGLLHDIGKAVDHEVSGPHVEIGVDLAKKYRENKDVIHGIEAHHGDIEPETVEAVLVQAADAISASRPGARRETLETYIKRLEKLENVAESFSGVDRTFAIQAGREIRIIVKPEEIDDLHAINLARDIAARIEQDLDYPGQIKVVVIRETRSVEY
AK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02777_Recombinase_A
VEINEVNKGKMEALNSTIKNIEKQFGKGSIMKLGEAVNMNVEVISTGCISLDLALGVGGIPRGRVVEIFGPESSGKTTVALHAIAQAQKDGGMAAFIDAEHALDPLYARKLGVDINNLLVSQPDSGEQALEIAEALVRSGAVDIIVIDSVAALVPRAELDGEMGDIHVGLQARLMSQALRKLTAHIGKSNACVLFINQIREKVGVVYGNPETTTGGRALKFYSSVRIEVRKGEAIKQGTDLIGNKTKVKV
VKNKVAPPFKTAEFDIMYGIGISREGDLLDIAVTTDIIQKSGSWYAYQGERLGQGRENAKEYLKNHPEFMTLLESRIKDWKQEGNAASNSLEEA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02778_hypothetical_protein
LFWRVVRVCVYGKDTPYYYQGKAYKRSDTSIVEVDRSELRRLAIEGINMDYEERKASSQDLSFTILESGLKEKAGIEKINLDILKTLNLFNKDGYYNITGNYWRIGMISLFQELMC*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02779_Response_regulator_ArlR
MRQVLIVEDDRNLSRGLCLALRNQELQIVPCFDLKSAREQLACGMTELVLLDINLPDGSGLELLGEIKGGSKSIPVILLTANDTEMDVVMGLEHGADDYITKPFSLEILRARVKTQLRRLAVNEQKSVVIDSYRFDFAHMEFFKADTAVELSKTEQKLLRLLVENRGVTISRAVLMDRIWTDGADFVDENALSVTVKRLRDKLDAAQYIKTIYGLGYIWVVKQDE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02780_Alkaline_phosphatase_synthesis_sensor_protein_PhoR
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RSPSVSEQDGVGIGLYLTRQILAEQGGYIKVASSLGGGSVFSMFLPRKA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02781_Macrolide_export_ATP-binding/permease_protein_MacB
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02782_ABC_exporter_transmembrane_subunit,_DevC_protein
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NESRSLGDNYIQIGVNWGYTGSQLADNIDPITVIAIIGLLLIIVFTGYLIIYNVFQISVSNDIRFYGLLKTIGTTGRQLRRIIRQQALVLSIIGIPLGLLTGYWIGIKLTPVILSRLNGVVEDAVSASPLIFIGSALFALFTVMISCRRPGRMAARVSPIEAVRYSEGTAYNKTIRKAQSGASLPGMAWANLGRNRSKTAITVASLSLAVLLLNMTVTFTNGFDMDKYLANVVSDFIVADSSYFQTGNFWGGDRALSE
EVLSSLESQSGVEAGGRVYGKSSPVEEFVTEDYYRALYGKWNDKEALDRAVTFTEKNEEGLLAERVQLYGMERYVLDKLRVLQGDLSKLHEPGGRYVAAVYSDDDYGNAKMDSHWAKLGDTVTLRYVEKYEYYDPKSGKILDPDNIPDDQPYRHRAKNYQDIDYQVAALIIIPHSLSYRYYGTDEFIMNDQRFIQDSGTSNIMYYACDVSDERTGDMEAFLYDLTNKQMPQLDYESKSTYAAEF
DSFRNMFLMLGGVLSFIIGLVGVLNFLNAILTGIITRRRELAMLQSIGMTGKQLKAMLTWEGLYYALGAVAVSLLLSIAAGPLLSNVLASMFWFFTYRFTVLPILSVAPIFTVLGIVVPLTVYRVVSKRSVVERLRETE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02783_YvrJ_protein_family_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02784_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02785_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02786_Cellulosome-anchoring_protein_precursor
MNVRKVSLIPELMVFMVISFFSVFLLTAPVSAADIMGNGSEDKVYSDLSNSNPNFNYIKYLSQRGIIAGFPDGSFQPEESLNRAQAAVILVKAMGLEISPASEMSFKDVGKDHWAATYIDSCVKAGYIKGYPDGSFQPEEKLSRAQGISLVLRLSKQDMNRASLPQIEDVNHEHWAARHIATGLAAEMVGLDSSGKKFLPDSPFSRQEMCRALGMLLTQDPDHYACELKGKLVVESGEIILKRAGQSRKI
EKNEIIVKGDIIESGSGGSAVINYPDGSSILMKENSVISIIDSRGRSYIMKDGSPSVAVDWLNYKIDKGLVFTALATIAAEPGQEKAEENKTTGLTTLLAAGDSSRYIAAAEQSIPPWYKTAQKKVKVKVDMPYGVAAVRGTIIMISIGSDGRCNVSCLSGNAELSGGGGTVNLTGGQSSGFNQSGAPPQPPGPMTLQQQQLFQNVQQWIQQSNSGGSGSSGGVPGPGPNVPGPGPGPGGSGGGGGG
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GDSFTLPTQVEALMSDDSTQEVDISWTPSGVDSSKAGNYEFEGTVEGYSKTVKLKLKIEPRVSIKKIDDIKVQIKVGDSFTLPAQVEALMSDDSTKEVDISWTPSTVNTDVAGIFSFSGQVEGYTSEVSLLLIVKAIPPPPPPPLSIKKINNIEVEINVGESFTLPTQVAALMSDDSTKQVAISWTPSTVNTDVAGNFSFSGQVQGYASAVCLLLTVKAISLPQLDPPIANPPAGTYSTAQSVSLSSETSGAIIF
CTIDGSDPRTSGTRMIFNGAITISTNTTIMAYAEKEGMADSDVVSFSYTIEAPSVGAYVYSVSPTILYEGPNSPGILDPDTAFINIEIANGTFIDDISVSDIVYENMPFGLFVSGIEHSDNCLYIYIDGQATNHGANDSIDNLYFTIGKDAVTGATADLTTGPISITFYD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02787_Cell_wall-binding_protein_YocH_precursor
MHLVKRVLIMSVILSGVLLLYSNDAMAAEPNLQWGSRGNAVVELQKTLNNQGFWCGAADGIFGAKTYNAVINFQKSKKLQVDGIVGPQSRQALGLSTATPSYTQVSRGGERTLSMVTTGYCPCAKCNYPYGGQPSYLGYPLARGIIAVDPHVIPMGTRLYVEGYGSGIAADQGNAIKGNRLDLFFDTHQEALKWGIRTVKVTIL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02788_50S_ribosomal_protein_L28
MAKCDICGKGVGFGKKYSHSHIRTNRQWKPNIQPVKAIVDGTPKKIYVCTRCLRSGKVERAI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02789_hypothetical_protein
MIKIKTSELGDIDMEKEVIETIAGLATVDCYGLVGMVPIDWQSGITSILGLESIRKGVLVRSSEDGLIIDVYVIVGYGIKISEVASNVIQKVAYVVQNNTGLKVAAVNVNVKGIKVVTGK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02790_dihydroxyacetone_kinase
LSLLKIDGNDLIRAVKSGCIKLEHERDRVDALNVFPVPDGDTGTNMYLTLLSAVKEGEKARGQSLATVAKAISTGSLMGARGNSGVILSQVFRGFARLMEGKEQAAATDLAQALKAGANTAYEAVMKPVEGTILTVIRELARAAEAEAKKDSDIVRTLLLAIKAGHQTLQKTPMMLPILKEAGVVDAGGQGLMIFFEGVLEGLVQNQDIILESYDKQVELGWQDKRVEEVLSLDFQYCTETLIKGK
ELEPAEIKEHLAPLGDSMLVVGGDELVKVHIHSNHPGKVLESCLQWGSLSDIKINNMLEEVHEHRDNWTRFNEELAAASKNLKNIGLVAVGAGSGVVQILQNLGVDVVVEGGQTMNPSIEDLLNACKEVPAPNVIVLPNNSNIIMAAEQAKQLSDKPVAVVPSRSVMQAITALIAFNPELALEDVAQAMIEEMKQVKYGEVTYAVRDSQLNGLEIKSGDTIGLIEDEISVTADNAGEAVLKLLERMV
DEDSELITFFYGEDVSEEEANGLKEQIIKNYPDCEVDLHYGGQPHYRYLLSVE*
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VESKKDTKEAMERIKFEVSQEMGLSKPVEKKQKNIKK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02792_hypothetical_protein
MARNNQLLVPQARAAMDTFKMEAAGEVGVSLKQGYNGDLTSKQAGSIGGQMVKKMIYDYQQRASGKV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02793_Germination_protease_precursor
MINREFNIYIDMAIEARDLVRGAGDQEIPGVKEDIKQLKNIKTITTVLDQNGAEKLGRPIGSYVTIESPPLKINDPYVRDEIVEAMEESMHTLIGEKLKPQDTVLLVGLGNWRATADALGPRFIEYSPITRHYHNYAPDALVEGMRPTCGISPGVLGITGLETFDVIKGIVEKVQPALLVAVDALAAQDVKRIGTSIQMCNTGIQPGSGVGNARHAITEQELGVPVIAIGCPTIVNAAIIANEAVKNFCYNI
GAPFNETTSLDAIKEILSPFGGSLGVTPKEIDEIIENTTRIISMGVARSLFPGISEEQLLLYAT*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02794_Ribosomal_RNA_small_subunit_methyltransferase_D
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02796_Sporulation_integral_membrane_protein_YlbJ
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GLFEITIGARAITATSPANILPQLLAVSSTLAWSGLSIIAQVMSIVVGTPVKLSFYLYSRLLQMSLSILITAIAYKLLATGQQSVLSFSLPYNKALYSFDAWGISIACLWVCFLLLAFMLASSLYLRRP*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02798_hypothetical_protein
LPVEYVLGLLLIFYIGVLIKGDDSTKKRMGGVLGVIGFAGIVYSSTQFGNYTLDESKLWFLLLVSIALAILGVVAFFPKNKDKS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02799_hypothetical_protein
VKKVEVFCVIEKADDEYLAYCDELRATASGDTEEEAIVNLKAAIKELIKYQEPQIFAPNKKRVLVEVV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02800_cytidyltransferase-like_domain_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02801_Phosphate_acetyltransferase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02802_Acetate_kinase
MKVLVVNAGSSSIKYQVVDMTDESVLAVGLVDRVGIPGTTLDHSPLGKDKVTIKKDLPDHTAGMELVLQVLVNEEYGCIKSMDEIGAVGHRVVHGGEAFAASVVIDDEVKRVIKECFEIAPLHNPPNMMGIEACQRLMPNVKHVAVFDTAFHQTMGPANFMYALPYDVYEKFRVRRYGFHGTSHFYVAHRAAEMLGKPYEECKIITLHLGNGASMAAIKGGKVIDTSMGFTPLEGLVMGTRS
GDIDPAIVFFLMDKLGMNSSEANNYFNKKSGMLGLSGVSNDLRDILEAAGSGNERAKIALDVYYNKVKGYIGNYIAKLNGVDCLVFTAGVGENAIDIRENVCSNLDYLGIKMDVEKNKVRGKEVDVATADSKVRIFLIPTNEELVIARDTFNLAK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02803_hypothetical_protein
MKIDLRRLKLRPQQSEEFYLEAVGRNDFLKEVGGKFAAPLQVKLLVDNTGKIFVARGHVRTALQLPCSRCLGEAIVPVDTELACNLLEARYSEHADWEEDIIIQDPEQVDISPCVEEALFMSIPINPLCKLECRGICPQCGVNRNLEECQCESEEIDPRWEKLKNIIK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02804_50S_ribosomal_protein_L32
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02805_Phosphate_acyltransferase
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GGPLPAFFQRLDYTQTGGAPLLGVNGLSIVCHGSSKREAVYNGLKIAEDCYNKNIIEMQQLELSKAVETEA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02806_Acyl_carrier_protein
VQEFFERARKILAEQLDIEVEKIRMETTFDEIEADSIDIVEMIMALEDIYDVEFPEEEQKDYQTIGSLINDLYEFLKQSKNAE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02807_Ribonuclease_3
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02808_Oxygen-independent_coproporphyrinogen-III_oxidase_1
MKHINIPIFIPHLGCPFTCVFCDQNRISATRDIPGEMEVINIVENHLATIPAGSEVEIAFFGGNFTMVEKTRQEMYLATVKRYLQDGRVRGIRISTRPDGIDAQILDFLQRWGVRTIELGVQSLSDEVLKASWRGYQAADVFKACQLIKEYGFRLGIQLMIGLPGDKLDLDMKTAAKVIELRPDMVRIYPTLVIAGTHLEKLYLKGKYIPLTLAEALQNSLAVYLQFQKENIPVIRMGLQPGEELRREGCV
AAGPFHPSFGELVEQEAFKAQAGKAIEQFFTAHGRHPQLLLFVHPRDISKVTGQRRSNLNYLKEQFGLELIKVRGIENLARDSVGAGTIDASAPALLLSRLEFIEQVTWDTGTGSLSHVNVKKYQR*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02811_Signal_recognition_particle_receptor_FtsY
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02812_S-methyl-5'-thioinosine_phosphorylase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02819_NADP-reducing_hydrogenase_subunit_HndC
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02821_Formate_dehydrogenase_H
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02828_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02833_co-chaperonin_GroES
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02852_hypothetical_protein
LRRIFIISLLVLGLFLIPLAAELEKTWAATVTGQALSSDIHAYVNGQMLPCLIINDRTAIVAEDLRSCGFDVIWEPVERKLEISENTSHPTGKTGSRTTTDYAAFAGKDRMILASDIKTFLQQKEIASFNIDGYTAIYLSELAAYGEVKWDPLQRVARFDSSRRSGDTILAESSEEANLIAEEIDRREGIIEFHGEKLLYQNQQVGYAHNGKAMVSLDWMAGWLGYQVQSKQNSYLVKRGSHSFQVKAGER
QVQVFYDGSPAKIVELYEVPSLISTRLYLYSLDLENLFGLDSQWNNEKRQWKVRYADYRIKELGNYLGGSSCTIKAQYSELLSGFNTPPELSVKNITLISEGSDKGGYAYVSGDGKNYAATVSLKVLSDNEIQICLGKKNRVLFYKQMTLRGEVQNHQLERQKIIGPFTEYSLVKPEQGFIQVKQNSFMVEGQVGFTNEAVIHILPAKIDQASGIITELPEQTLSLQEQKFSGPVALNAGPGLYRIFFQVQ
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02853_Methyl-accepting_chemotaxis_protein
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DTEKVLCRMGSEKFDTNVVVGLPISEVKTAMQTIQARKRVQVDINTRKLGNIRMISIPLFDEESGELVGTFGITTPRNLASNLQNAADKLRSHTDDMARVMQQIATSAGEINITESKLADIIKSIQENLENIVRVLSFTKDVANQTKMLGMNAAIEAARAGDLGKGFGVVAGEIRKLSDQSKQTADEIGQLTRAIEIRIKDAVEASQGTVMQSQEQAAATQEVTATVMEMSEVAEKLATLAKSL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02854_Bacteriophytochrome_cph2
LIIVMFSFFAINIGMNEEFNIYSILGWLGLIAAIILLLAYLRHHKFVRQSTPEDANLKKILDELNIATWALDPYSGSYSFSNSIESITCCKARDLMLNPTLWSKMVHPYDILLLREADKELMAGRKSMLEYRIMLTDGRVRWIQRLGIPVMDQAGKVKRLTGLIIDVSEQKQEEENIKQKAYYDTLTGLANRSMLEYYFAHCQASSRHFAQNLAIVFIDLDSFKAVNDQFGHNTGDILLKMVAARLKNLLRG
NDLLSRLGGDEFVVLLTRVSRESLIGVAERIMGTFSEPFEVEGYRLMIGASLGISIYPDDGEDLEILIHNADQAMYQAKNQGKNNYRFYS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02855_Penicillin-binding_protein_E
LNKFRVVAACLIALLLAIMIPASFNAAENPALSNTRLTARSEIWKAINAGNAGSGTVAVMENGKIVYAEGFGMADRERSISVDKNTLFNIGSISKVYCATAIMLLVDEGKVELDQPVTAYLPEFTMEDERYKDITVRMLLNHSSGLPGTIGSNSFGFEYHKEYYQDVLDTLAKSHLKHRPGEMAPYCNDGFTLAEMIVARISGKSYLQFLSERVFEPLGLNHTGPGVGQRQGLKEGSVARYYTTDGKSE
PLEVVSLLGSGGLSATPEDLCKFADTFSASGPQILSPASLAEMRKGQPAESYMQLKQPELSFGLGWDLTEIAHYKAKGINVLGKSGGTGNYSSMLYTIPDKRISVAVIFTGPQSNAMVIAASIMEAFLCENGLFDKTPAVLKLPLKAQSLPSELANYEGYYSNGSVLKRLKVDRAENKLTVYMLEGGQETEILSAIYNDGYFHNQRDKYYFITLGGRQYFVQHSATLAVDMIASQKLEPVAKASELKISV
DKRKWLRRNAKAYEARMLVSGHIITSRQFSELPGYIDFDGIKRVISPTSAGMAINSMRDLTELGLSEKDGISWAWISGMLYTPADAVQSLASGDTNITTGREGYNEWRKVAEDSILDFQIPNKGRVIVFDPDGQAIYDSAVDSGEVLATTGSFVEVAGNPGATFKLSASSPL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02856_prevent-host-death_family_protein
MFNVTEVRQNISKIITQVIETKEPIVLLKRSKPVAYIIEAKVFEELQAKAKKAESYEKTEKAKDTLQRLAKLRGEMKPQPDSTPLIRRLREGERSE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02857_putative_nucleic_acid-binding_protein,_contains_PIN_domain
VSSYICLDSSVLIKVLVNEEDSDKAVTLLERVINERMTVVLPDFAWAEVGSVLRKKVNRRLINPKQAETAWEAFNSFGVITFINGVSVMRAAWQIADKEELPTLYDAAYLAVAEIMAKQNGKECEFWTADNKLASSVKNKSYVKVLQSCIIF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02858_Spore_photoproduct_lyase
LFPEKIFYEPPVLHYELGKQLQEKFAHIPWIAIENHNNIEELRKNPNKEFVHMKRYLILGVRKSLKYTPNHKVSDFLVPYTSSGCSAMCLYCYLVCNYNKCSYLRLFVNREQMLDKLMKTANRSPGDLTFEIGSNSDLLLENSISGNLEWTIENFAGSKKGFITFPTKFDMVEALLPLNHGGRTIMRMSVNPQPIIQRLEFGTSSLTGRIRALEQMHDAGYKVGILIAPVVLLDNWQELYSQLIEQLADEL
PDKLKKELFIEIIFMTYSYIHRAINAEAFPNAVKLYDKSLMTGRGRGKYCYRSDIRLQAEEYLKELLEQKLNGIPVIYIV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02859_hypothetical_protein
MRSTLRALLLCFLAALALGNEVLWNMIREKERAGGQGKRDSIYRFWEEGLKKKSTHPQKGILVVAKTLVGSGGGAVGISDKGKRLSEYILESIKEQLLLETGKNLPAL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02860_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02861_hypothetical_protein
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LIILEGIGSEDFPTEQQLINNQYSWYTYSPGDAQYLAITSGIHLPGQQYPPGNRCYDEDGAEKPYPFSGIYHSMPEKVIGSDPGLQSVAVGSRSILTHLASGARVCVECFARTLYNYGIMGIIEER*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02862_molybdenum_cofactor_biosynthesis_protein_A
MYREEQGKVVEIYPFAWNSFGVTHIESLPFFHAYPGSRSLLLGSAGCNFDCQYCSNAHVARVNPKSVNLWHLQPEKLLTKARQSGCHNIVFAINEPTVSWPSLRALGETAREQGIEMGCMSNGYFTPRVANEMAETFSFINISLKAMNRDFYQRYIRVTDIAPVLRNIAYLAEHTHLEITTPIIQGLNDGDIPSAASFIASQDPEIPWHVFRLLPEYQMKDMLAPSIEAIEYALQEQENKLAYIYFGNFVGS
EWVNTVCPDCGKVLVERINLGGCGAKSLACHLQGDCCPSCGRRLRLLGEWTSWNKGGAQIGKNSSY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02863_putative_ABC_transporter_permease_protein
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ISACGTIGWVGLVVPHMARIMIGPDHKHMLPFSMIVGAVFMLLMDTLARTITGAEIPISIMTSLVGAPFLGYLLLREQDKEWNG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02864_Ferric-citrate-binding_protein
MKAFRNSVMLILMVALLALPGCGKPATAPQNEGAKAVSSIVVKDGLNRDVKIDGNVESIVSSYGIALHMVVALGAADLIQAIDVPSMKSDFFKATIPQNAQGKSVGSPRELNIEEVAALDPDLVLVPGRNQEMVESLEKRGITVFGVVAETPQELNLTMLNLGKALGREQVAQEFVDYYDQTIKDVKDRLAGLEKSQRPRVYLVGPMGILSTCSSDMYQHELIAMCGGENVAAQLQGKLDGHG
WLEIPAEQLITWDPEVILVVQYSGAKPADILNDSRFRNIQAVKDKKVYWFPSDLNPWDYPSPQAVLGVKWLAATLHPDCFENVNMQVEADNFFNRFYGKSFTGMGGKL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02865_Iron(3+)-hydroxamate_import_ATP-binding_protein_FhuC
MDNTILRVENINFAYKKRQVLNGISFSVKAGCFCALLGPNGSGKTTLLKCINQILFQDSGNILLDGQTASSLGRRDIARLVAMVPQQTHLVFGFSVMELVVMGRSSSLGTTGLPGRQDYHRAQTALEELGISHLAQRKFNELSGGERQLVLLARALCQEPRILLLDEPTSHLDFKNQFLILNKVRGLTRDRGLASLISIHDPNQAARYCDSVVMLKDGAVLKQGLVQEVFQPLSLAELYGMEVVVQ
RSSTGSDFVLPRYY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02867_Neu5Ac_permease
VLPLVEMLTIVILTRRNPDLGPAGPKANWQERLVALKGGLGEVLIIFAISMGRLFAGWFTPTEAGAVGAAGVLLVSLLGRSLNWEGFKKSLLDTTKTTAMIMLIIAGAVIFGRFMAISRIPFALASWAGDLALPAAAIMAIILLIYFVLGCFIDALALALVLLTIPIFYPIVVNNLGYDPIWFGVIIVLVVAMRVITPPVGMNVYIIKGVAPDVPLETIFKGIWPFLLAIVVCLAILITFPAISTVLPNLMK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02868_L-dehydroascorbate_transporter_large_permease_subunit
MGFLAYYSGIGTRLYVFAYKMVGQRPGGLAIATQAACAVFGAICGSNTATAATMGAIALPEMKKYQYEDAMATASVAAGGDVNHSYTYPP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02869_hypothetical_protein
MVERQPDSTPEENTYLKLIQDNSGNESEDARTIINWVAEQLKADMGKIVRIIRSAYGRGHFDARDNSQMNFNPGGELTAIVTPLVDRVLSGIYESRDIKFDGPSSFKKEDGVKIINGIVKTGSIPRRAKPNQNISAVQNFATGLKIVKKSA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02870_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02871_Lon_protease
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ALTKFDITAIF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02872_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02873_hypothetical_protein
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ADASKSVPYCPDEYLSDDEFVFANGVRLGMSYEKVIEILGGYDEAFDNAPDVKSIIKDGCHYGFYQINDKYTNQSDLKTDGVFRLLNLSSESYQGEFPRGIRIGDSIEDVLNKFPGKDKQLRKWAHQTIYGKDEIGSPRAYLQFTMYNECYRFLATTSRQVLIINFDRKNQVRSVELHKEDS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02874_putative_oxidoreductase_YdhV
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ALSVHNYSRGTLPDWKQKAGRQIVDIYGSRHIACQSCIIACGHLAEINEGKYAGTLVKDMEITPTVSYSSNVGLSTEASIKSSELCQRYGIDMSSSGSVIAFAMELYQKGIINKDDVGYELAFGDDDAAFALLRDISLRQGIGDILAEGVKRAADHWPGADDYAIHVKGVEVPMIDPRGRWSTWTLGMLTNIRGGDHLRCRNPVENLRYNENLYHYQKERFGFKKPMYDRLDMPENLKSAAIDLESD
TVDIAIMSKWAEDLINLYNSVGICIRPPVMETIGPTLLAEIYTCMTGIPMSPDELMMGSERAWNLMKLFNIRHGEVAGDSKFPRRFYRELQSGNIVDEDKVQAVLEQYWQARGWDPGTGHPLPETEKRLGI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02875_putative_ferredoxin-like_protein_YdhX_precursor
MKQKRLYHNTSLCDGCGLCQLVCALEHCGQWNHYQSRIKIVNDMEREAFYAVCCTQCEEAPCILTCLMNTIYKQPGSDITVRDLYHCIGCRACELACPFDAAVFDVIQEKVVNCDLCGGRPLCVEYCPNHALTYDYPGDQADKKRNQAALQRFGTSLLEVFKFSGKEA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02876_Nitrite_reductase_[NAD(P)H]
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SHPAIYACGDCIETSDLLTGKPALCLLWSCAKAQAEVAARNCLGEEIVYPGALKLIAEEAYGKPCMAAGLLEEELDRTGLKIIEKETENTYHRILIKNERIMGIQAVGSMEAMGPLLYFMKKMIAPSEIKRIINSPALLKNMPWMLAIDKYWQ*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02877_Bicarbonate_transporter_BicA
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GGFAMCHGSGGLAAHYRFGGRTGFTPALMGIILLFTGIFLGPAGVDLLQIIPQAVLGGLLFFSGVDLVRGVQDFGDKKALFCFAVVLIISIAVNPALAFLVGLILHFLFNKGWVKI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02878_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02879_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02880_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02881_Putative_pyruvate,_phosphate_dikinase_regulatory_protein
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EEVGNTITHKFNLPLRITHHRF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02882_Cell_division_inhibitor_MinD
MGKKTEESSVIVVTSGKGGVGKTTTVANVASALARKGYKIAVMDLDIGLKKLDLILGLENRVIYDIIQVIEGECTLKQALVKDKRFPELYMLPAAQTRNKDDIKPEQVQEICRQLRPEFDFIFIDCPAGIEQGFRNAIAAADKAIVVTNPEVSAVRDADRIIGMLESAQFQDIQLVINRLQASMVKSGDMLSIDDLLEHLCITLLGIVPEDKKVLISTNKGEPIVLNERSEAGLAFNNIANRLLGQQVDFPSF
EEDSLWGKIRNLGRNLFSKE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02883_cell_division_topological_specificity_factor_MinE
VLDFLKRIFADSSSRKQANDRLRVVLTHDRTGTSSRLMETLKEEILEVISRHVEIEGRPEVKIIREGRHSALDINIPLKGR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02884_Septum_site-determining_protein_MinC
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02885_Adenylate_cyclase_2
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ADVIEEKIPPAYFQDKIVLIGTTPEDHDFVTTPYTTSNMVKGGALDTPGVEMHASIIQTLLEDSWYREAEKPFNIAFLFLAGLLTSLVVRGRGPWKGLIGTVLVTLASIALVYGLWEYQRIWLSLAAPLALILLSYVVVTATEFIQAELGRRKTKAMFSRYVSADVVDELLKNPDEISLGGKKQVVTIMFADIRGFTAFSENKDPVDVINRLNEYLTAMTDSIQSHGGTLDKYLGDGLMAFFGAPVYFE
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02886_putative_ubiquinone_biosynthesis_protein_UbiB
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KLSDLEEIDKRGWNRRKISQLGTETFLSQIILHGFYQADPHPGNILLLDENRIAFIDFGQIGSLSETRLIHLGELLLAISKQNMDKAMSSLQDMGIVGELDDIEDFQEDFADLIKSVSGSIGKLDINRLRNELMDLSYRHQLKMPAYLTGLMKALITVEGVGKKLDPGYDFMETARPLANKVLEERLKAESVYKYIRRKYYQDIKPLAALPSNFNKLVRRTSEGQLKVRMELDLSDKAYHGISRLISRLSASL
IITGALIGSSFILQANHAAWVEEYSFLGVLGFGVAIVSLVVFLISSLRP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02887_Putative_aliphatic_sulfonates-binding_protein_precursor
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STRWSNENVDQALAVAAETLPTIPQPVMKKALSRIEFEFIDSSKSRPEVEFYLQKMKELYPQGTPKLPDKDFYYS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02888_Putative_aliphatic_sulfonates_transport_permease_protein_SsuC
MRTGLRSLFGIIVFILLWQLLAVLLDKSIIVPTPGETFGLFFQLLLSPVTLLAGLQTAWKVLMALGLVLLLGLPLGLIIGLFEPLYDMSRPIIMVIQAVPVISWLSLVLFTWGRNWQGPVLIAFLSILPIAILTTVSGVRNLDKKLLEMARLYQVPARKIMHDIYLGSLLPFIIAIIDVSLGQAWKVILVAEYLCGDSGLGLKIFDARSFVDTPSVYAYTLLAVLLGIITERLIKMGTGRLSKLWVPV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02889_Aliphatic_sulfonates_import_ATP-binding_protein_SsuB
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02890_Ribonuclease_Z
MAKRNFEVTFWGVRGSLPVPGPHTIKYGGNTSCVQVQIDQRLFILDAGTGIYHLGQHLLKSQSPISGEIFISHTHWDHIQGFPFFAPAFIKGNRFILYGQSKVNSTFADLMKGQMIYQHFPVSLEGMGARIEFHELDNGSEMDLGEQIRLRTVHTNHPNGSLAYRLDYDGRSCCYITDTEHYSCVDPHLKAFCEETDLMIYDSNYTDEEYPRFLGYGHSTWQEGIKLAQAAGAKKLVLFHHDKARS
DEEMEKIEKEAQRCFPNCIAAREGLVIAL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02891_Cyclic_di-GMP_phosphodiesterase_response_regulator_RpfG
LRSYTPEILEQIEDIINIGIALSAEKDKNRLLEMIVSEARRITNADAGTLYLCENDCLSFKIMQNESMNSFLGGRGEKINIPPVPLKMENVSAYAAISHKSVNIPNVYQAEEFDFSGPKKYDESTGYRTLSMLVIPLENHEAEVIGVLQLINARDENGKLIPFAPYFENVITSLASQAAIAISNMQLVADIEELFNSFVQVMATAIDARTPYNANHTRRVALLAGEMARAVNRQSQEYWAGVSFSEEQIAQLEMA
GWLHDIGKITTPLEVMNKSTRIEHQLELVLLRFDYILSSSEAEYLKEKQALLAINSNNSREQLEQLERAWEDKQCYIKESREFIIKVDHPSTFVDRKIVEKLKEIAVQSYRDGSGKLQPWLRENELKCLCVAKGTLTEQERKIMEEHVVVTGKMLEKIPFTKKLQDVPFFASIHHEHLNGKGYPRGLSGEQIPLEGRILALVDVFDALTASDRPYKKALPLEQALKILGFMVKDGELDGDLLQLLVEQRV
WEKI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02892_Cyclic_di-GMP_phosphodiesterase_Gmr
MFKLAYLALDKVNQGIIILDKDLKIFFWNAWLEQYTGKSQDETIGQKLPQLFPDLSRKPCLDAFQGALFHQQSRFLSGALHHCFIAPAGDIRKDVRQNLLVEPLYCDDEEYILLQISDLTGHYSRVKQLKHMIKEIDNEYEQVRAAEKINRFKAFHDALTGLPNRYLFYDRLDNAISMAQRNKEMLAVAFLDLDGFKEVNDSYGHEAGDLLLQAVAERLRELLRESDTLARLGGDEFLLIFPQIKGEA
DAATIAEKILAALAYPFMFWGLEIYLTASIGISLYPKDAKDSRNLINKADLAMYQVKNSEKNDYHFYNSSI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02893_flagellar_motor_switch_protein
MLNPLQKDVLTELVNVYVGYAANLLSEMVGLRILLSVPRVELIPEAEMEQGGLPLPEIFSPGHIVSSYISFGQDFRGKAFLVFPVQQAKLLVNACTGEQLLLEEGDAVPPRFLDTDFDVLKEISNLILNAVIGEFGNLLETRVVFTVPEVELIDVTESDQRLFLKDGVYILILHTTFTVAEIQVQGVIMIALNLNSVSCLLQKIDALLEGQDV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02894_Chemotaxis_protein_CheY
MGVVVVKILIVDDSQFFQGFLKKLFHNYLPEAVLLTANNGRDAYALYEQERPEFVITDLLMPEMNGQEFLQVLKESNPQVKVIVISADIQKATRREIEKMGALAFFNKPLNNEKAGELLALLKEGSYA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02895_O-acetyl-ADP-ribose_deacetylase
MKISSVEIQVVQGDITRQEDLAVIVNAANSSLRGGGGVDGAIHRAAGPELKKESSALAPIGPGQAVITGAYRLPNRFVIHCVGPVYGVHKPEEELLASCYRNALRLAEKRQVDSIAFPAISTGVYAYPMREAAQVMFKTIIEAIPALKHIKKIRIVLFDRPAYELHLQVLEACQAE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02896_Extracytoplasmic_solute_receptor_protein_YiaO
VKKARFVGGKRSWRPGKILLSLLLVIALLAVGGCGKTSPTSTTSKEAPKKSQTQTIELRLAHFWPSTHPAEVELVQPWAKAIEEATGGQVKIVSYPNQTLLQADSIYDGVLNGIADIGISCFSYTRNGFPVLEVFELPGITYESSRVASTVAWEGIKELNPKEVQDTKLMMVLTTGPGDIYSKVPVRNLQDLKGLEIRATGLSAKTLQALGATPVAMPQSDAYESLSKGVVKANLGPVEVLKGWRQAE
VTQYLTQTPFLYNTLFFVTMNLDKWNSLDPETQKAIEKVNEKFFKEVAAGLWDKQNDEALKWAVDEKGMELIQLPADEAQRWIDLVKPIQDDFVKRMDKQGFEGAKILNTAKTLADKYNKEFK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02897_TRAP-type_C4-dicarboxylate_transport_system,_small_permease_component
MAKKYNGFVAGLSQFLDQIAGLSLVAVMLVVVGNVLMRALFKHPILGTYDYVGFLTATAIGLALAHCALQNAHIAVDFVVERLPHKTRALIDTATNSVAITFWGFALWNLAIYAGTMKTNGIVAATSQLPVSPFIYLVAFGLFSLCLVLLSHLGESLRRVAR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02898_Neu5Ac_permease
MNPFGLGVLGIIVFLVLLMLRMPIAYAMALVGFTGFALLSSASASFSMVAKEIFNTFSSYSLSVIAMFVWMGFLAFYSGIGTRLYVFAYKLMGHLPGGLAVATQLACGIFGAICGSNTATAATMGAIALPEMKKYQYDTSLATASIAAGGVLGVLIPPSVIFIVYGMATEQSIGELFMAGIIPGILLMLAYIAAILFLTLRNPALGPAGPRASWKERASSLRGGLFEVLVVFALSIGGLFAGWFTPTEAGAVGA
AGVLAVSLLGRHLDWTGFKKSLYDTTRTTAMIMLMIAGAMIFGRFMAISRIPFELANWAGSLPLPPFAIVGVILLIYLVLGCFIDALALILLTIPIFYPVVVKTLGYDPIWFGVIVVMVVAMGVITPPVGMNVYIIKGVAPDVPLEDIFRGIWPFLLAIIFSLIILIAFPSIATFLPQLLHGV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02899_putative_domain_1
MNYQQHFMRLERMYLSAPYNRQLYHNNTIKISREQAIITTEVMEKHFHGAGAMHGSVYFKLLDDAAFFAVNSIIKDYMVYTVSFNVNLLRPVGAGVIKSIGIVKHQARNRLVADANLYDPEGKLAACGTGNFMRSPLKLGEMPEYTRELSDEG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02901_ABC-type_uncharacterized_transport_system,_periplasmic_component
VRKSLPRLLLLPVLLLLVFSLAGCAQEKEKTPPKTAEETEMKTIGIVQIVEHPSLNTIRESLVKQLAEKMALPLSLLTPM*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02902_hypothetical_protein
MSRERLTLRVRLVFHPTGVTIKVASYGREIGALPLEPRDKPLVLPMRSALSGTTDAPCGRY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02903_ABC-type_uncharacterized_transport_system,_periplasmic_component
LIVAIATPSAQAAVGETREIPIVFSACTDPVGSGLVSKMEKPGGNVTGTSDAVSAEKIMELAKRITPNIKKVGALYNSSETNSIAVVNNLKDYAAQNGMTVVDATVTNSSEVQQAVSSLIGKVDAVFSPIDNTVASAMPLVAQVANKAKMPVYVGADSMVKDGGLATYGINYPVLGQETANMAVDILNGKKAGDIPVKSMTDMDIYLNQATAKAIGIDIPADVMKEAVQVFDK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02904_Autoinducer_2_import_system_permease_protein_LsrC
LVGLALAFAAGCLAGSVTALLHTKLNIQPLLSGILVMLGLYSINLRVMDGRANIPLLNKATVFSLLQGTPLEESAALLIPTIILLSMLVLLFLFLKTQFGFVLRATGDNDQMVRALGVNTDRVILIGLALSNALVALSGSLIAQYQSFADISMGIGMVIIGLASVIIGEVIFGTTPLLRRLVAVILGAVLYRLVIALALELGMAPTDLKLISALIVTLALSMPSIKAYLIAWKKKHSSPYSRKGGQA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02905_Spermidine/putrescine_import_ATP-binding_protein_PotA
MLIIESLSKTFNPGSINEKLALDNITLSLQPGEFLSIIGGNGAGKSTLLNCISGVYPMDQGRIILDSMDISYRPEYQRSRYIGRVFQDPMLGTAFDMTIEENLAIAYARGKSRGLKPGIRKAEAKLFQEHLARLELGLEDRMKQKVGLLSGGQRQALTLLMATIVEPRLLLLDEHTAALDPAIAQRVLQLTREIVSRYHLTTIMVTHNMKAALEYGNRTIMMHEGRIILNLQGAEREEMTVEKLVQLFGLK
SGAELDNDRLLLI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02906_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02907_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02908_hypothetical_protein
VLGITSINRNHRGEIVNIELSDGRRISLEELFQEVEQDNVGGAYIATDANGEKHLHLSRDGDTDEDRDCLSLI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02909_hypothetical_protein
LQRIFLTLISPAEYARQGVNFKFPVPDACPNPECLIPIPPKKHGFYGRNCLDVTYRGRVLIRRYYCPFCGKTVSYLPSFCLPYYQYSLAVIYMIIVNHIESAMSYASIIRNLRKHHPNLHLGLQHVEFYILRFLMNLNSIQIGLRQFLPDLALPDFGLDIKKGAKKILHIVNGGFGTIQTFSQRFFEQCKRSFLSPLHNSLA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02910_hypothetical_protein
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LTPGELFLTRFDIAENGKIGGMTSQKEIPDDLLTWTKGLIIEKKGKVASKYEIKEIDGDTYLFYEWKNGNYIYSGMQPDYYVLKKVK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02911_Sigma-W_factor
MKDISQEQAEAIFRDYSSAVYRLALFLSKSPILADDITQDTFLQVFKKYGSYDSRRPIYPWIYKIALNITRNTLRRQKWLVLFGEPPESGDSTTIEDRILKNELAAELWQEINKLTLKSREVIVLHYYLDLKLQETAAVLGIPLGTCKSRLNSALNTLEKQLQENSLLILKKGDDLLDII*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02912_HTH-type_transcriptional_regulator_MtrR
MIMTTKEKIKQAALAAFAQKGYEGATMQEIAEAVGINKASIYNHYKGKEDLFLAVYQDVARKYEKLLKRMIRDSENMEIRDKLLHMFKEYILFYYKDLHISLFWTQCLVFAPPELRENLYVDIVKREEPFEKKMLEILGEGMQQGIIRRDIPTKMLLSYRAMRDGLLLWMRIVPELSGEWIEVFWKDFWLGIQEGKGGGEQQDETRNELKLKGSPDSQPADKGALSLYTATCLICHREFGIPFTDYRY
KDIKYNRCAYHVCDDCGKKIQEECQKITGLSPESIDFWERLENRRK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02913_hypothetical_protein
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PYTSMGRVIAASGLAAATFNHRTLLQGFQIKDVIADIENLIAFLINNADAYGIDKNRIAVWALSSGVPYGLYAGIHNHPAYVKCIVAYYGFGEFASLCALLNIPFNAGGWASIQAEQYSPLQFLSQNPDRIAPMFITRAGRDQIPHLLESLDGFISTALANNIHIDLYNHPNGVHAFDLFNDEPRTHEIIEKTLEFLKRHLLIL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02914_CarD-like/TRCF_domain_protein
MFKVKDYVVYGLNGVCQIADIRKDNYDNSNETEYYILKPVYNTSITSIMVPVNNSNIMMRAISTKNDVLSLIAKMPDIETSSWIDNDTQRTNQYKAALRTGKTEEWVKIIKTLYQEKKARSAVGRKLTTTDEGLLNTAEKHLNEEFAIALDISPDEVVSYISKHIS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02915_hypothetical_protein
VSFRISSQHQNIQVLDICVKYLYIIIILYKYMGCCLLNKIETQLVNNILGAFQCAKDTVALLPQLPPNIKPVYFRILNAIYKLNHYTGRPRISDISKESGLLLPNTTKVINEMVELNILEKFTPDFDKRVVLVRATELGEQYIQKYIVNFIESLEKQVSRINEIECIIMIDTVYKVHQAIKTVYDEQEPEKDAIN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02916_Putative_glutamine_amidotransferasec
LNVLLENEPGDTGERKGEAMKAVIGISANHNAAESLYCLKEAYVVSVREGGGVPLILPALDDVALVDEYLDLICDAFIFSGGGDIDPFYWGEVPETGLGEINPLRDSFELKLARRLLLQNIPVLGICRGCQLLSVASGGKLVQDLATGMSHEQNAPRYYPFHDILVYKETLLARIMDNHEARVNSFHHQAVREAGVGMRVSARAPDGTIEAIESIDKNFWLGVQWHPEFLRDEYSRRLFRTLIEAAYMT
K*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02917_mRNA_interferase_EndoA
MIKRGEIYFAQLNPVIGSEQGGVRPVVVVQNDIGNQYSPTTIILAITAQINKAKLPTHVELKAAVYGLERDSVILAEQIRTIDKTRLKQRIAVLNDDTMNKVDQALNISLGLTEV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02918_EndoA_inhibitor
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02919_Alanine_racemase
MIMAVVKADAYGHGMLEVSRACLQEGVEWLGVASLDEAIHLREEGIKAPVLVLGFIPEEFAEATVEYDISASVFSLSFARALSQAASKLSRTARVHIKIDSGMGRLGFAPIPSSLALIQEIAALPGIEAEGIFTHFADADAKDKSFTYEQLRAFSNFVSNLEKRGLSIPLKHCSNSAALLDIPEAHLNMVRAGIVIYGLYPSEDMKRLGLDIIPSMTLKSRISYLKVLEPGHYVSYGRTFCCQRATRVATVPIGYA
DGYHRLLSNRSTAVIRGEKAPSIGMVCMDQCMFDVSGLERVEEGDEVILFGKPSDGVTADDLARILGTINYEIVCAVSARVPRLYITR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02920_putative_manganese-dependent_inorganic_pyrophosphatase
MLAKDIMTREVIAVNKNDSLEEVARILLKEKISGVPVVDADRHVIGIVTEKDLIVKASELKMPFYVTLFDSIIFLENPIRFNNNLKKFTASQVNDAMTSRVIMVEEDTEVSRIVEIMQEKQVNRVPVVRHGKLVGIISRNDILKSLVKKNG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02921_Nicotinamide_nucleotide_repair_protein
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TYGHVLIIGASPGLSGAVIMAAGAALKSGAGLVTAAVPESLLGVVDAGWMEIMSSPLAESKQGTMALEALPLIEGLLGRASACAIGPGMSRFPEASAILHSLLKKAGIPILIDADGLNALAEDLNILKDHQVPVVLTPHPGEMARLTGKNIEEIQSNRVAVARKFAQQWGVTLVLKGNKTLIASAAGEIFLNITGNPGMATAGSGDVLCGLITGLMAQGLRPLDASIAGVYLHGMAGDRAAEIKGQRG
LLAGDILNSLPDILQQFER*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02922_Holo-[acyl-carrier-protein]_synthase
LLVGIDIIEIERVKEALTRTPRLLQRLFTEQERLYCFSKKNPYPSLAVRFAAREALRKLHPAFTAGAAFHDVEVLSLEDGRPELLLYGSAAEICREQGIGKISLSLSHSQEQAIAVVIAEKG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02923_Chemotaxis_protein_CheW
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02924_selenium_metabolism_protein_YedF
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02925_Putative_L,D-transpeptidase_YkuD
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02926_High-affinity_zinc_uptake_system_membrane_protein_ZnuB
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G*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02927_putative_zinc_transport_system_ATP-binding_protein_AdcC
MDRMDREERKKVIEIENLLVKLDGRTVLEEVNLSVYEKDFLGIIGPNGGGKTTLLKTILGLVTAEAGTIKIMGEKMKKNRGQVAYVPQYAAFDRSFPVNVWEVVLMGRLGSKRGRSYSELDQEIAREVLKRVEMYELRHRPIGELSGGEIQRVLVARALAGRPEILLLDEPTASIDSRFQAGFYELLEELNREMTLILVSHDISAISVYVKTLACLNCKLYYQHSKELSPEMIEKGYQCPVELIAHGVPHR
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02928_putative_zinc_transport_system_zinc-binding_lipoprotein_AdcA_precursor
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EIGGKVVFLDPLPRNYISDMQAAAKTLADALSD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02929_Peroxide-responsive_repressor_PerR
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02930_hypothetical_protein
MIANKFSSKTERQTEEPVTLKDIGGILLGCFILAAAIQGILIPAQLLTGGVTGIAIILNYLTSLELWLWYMLLNIPIFIAGYRLVSHRFAIYSLIGTFALTAFLAWLKPFNLGIEETILAAIFGGAMGGIGTGIIFHSKGSSGGLDIIAVIIKRYWGYNIGQTFFAANLLVISLFLLLSSLELALFSVIGIFVSSRMVDLVESGLNVSRTAMIISKQHEEIVYGILHNLQRGCTYLSGTGAYSSKEEKIIMTTVGKTQLPRLKE
IVFQIDSQAFLIINETIEVFGKGFKRSGREY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02931_putative_cysteine_desulfurase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02932_GPR1/FUN34/yaaH_family_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02933_3-oxoacyl-[acyl-carrier-protein]_reductase_FabG
LFPQSNELEAYTCLIAGGSRGIGAAIARAVAARGASVIINYRSSELEALRLARDLREKGAGVLAIRADLSRENEVERMFTRIEAEMGNVNALVYNAGVSQRGLLIECSEEQWDRVMNANLKGAFLCCRRALPYMIRERFGRIVNIASVLGITGASYESIYSSAKGGLIALTRSLAQEVGPSGITVNAIAPGPIFTDMLREELDEDEMADLTREIPVGRLGCPEDVAAACVFLLGREASFINGHILSLDGGWKP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02934_Poly-beta-1,6-N-acetyl-D-glucosamine_synthase
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QILQRLRSGSQVVIARRNFSAGTRLEGESPLRGLMGRGFNRLVQFLLLPGIADSQCGLKGFQREAARKLFTRQHLKGFAFDVELLALARVLNLEICEQVVEAIDCPGSSVNRILTPLQMARDVLRLKIALMTNRYDLPTFQWPWKPVLLAMALFLLALAIRLPWLWEFPRFIDELKEVQLAYLIYYGQSWPLHNAAHDIGAMHNYILAAIFKIAGPNIYWPRLYVAITSSLSVYLVYRLGKHLFGESSGLI
AALFLLTNGMHILLSHMAWANCTTPFFFTLALLVTLKSEQKKSGRLLVLAAFLWAATLQTHSSVIIYLLVVVAYLAVTFRNSAIPFRYYLAAAFSFLFGYFNMIYYNLLSYGGSFKWINNKSYALEQNLSINSYLHNMAQLLVELIRSVTSIYRNYGELWHYSLHPLFILSLFLIGTGAYFSIKEKKGLPLWLLLGGVLIMPLFNKRYVFYLATRYIMPLLICALILLAYGLVQIIRRIQSRTSQKKAVNIITATLILL
LATAQVFPYYSYCSARLNTNESNRLALEVVKLTRQMSQGHESIVLIDDKLPLENQPLPYLLTFLEHPYQMLDSKKSWDNDINRYSGISTLYPGHGQQLIMVMNEENFRNWKFLLHERINRVERLSCQISFPSPASRPRSIFVVEINDKYSQPVFQGKASLPGEEIR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02935_Deoxyuridine_5'-triphosphate_nucleotidohydrolase
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02936_hemolysin
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02937_Major_Facilitator_Superfamily_protein
MSQAKKAFANQLLLFAVSVFMMGLYSGLYDPSFNNYLSQVHQLGEVARGGLEFPRELPGFLVVFVFTALAFFADSRIAMLAALIVGISLWGQGFLAPNMRMVVLWMLLWSTGAHLFMVLKSSISLRLAVQGQEGRLLGQLGALEAAGALCGMLVVYLGVSQFHFSFGVIFGIAGTFALLAALCLYLLDPKPIKRPPHYLLFKKKYSLYYLLSILFGARKQVFLTFAPWVLIKVFNTQVQTFALLGLIG
TVVSLGFRPLLGRAIDAWGERLVIFLESAILVVICILYGFSLYWFSARIALVIIMICYIVDQLLFAVTMARSTYLNRIADSRDDVAPTLSMGTTLDHGVSMTIPFVGGIIWALFGFHWVFVAAAVIALLNMAASLFIPGIEEERLNNRGV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02938_Coenzyme_A_disulfide_reductase
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DRMESNLPGIYAAGDCATTKHLVSGQEVYIPMGTTANKQGKVAGENAAGGNARFAGVLGTGIVRAMEMELSRTGLCENECRQLGIDFISRRVKSRTAAHYCPVSGEIHVKILVEEPNGRILGAQIVGFAGAAKRIDMLATAITMRATVESLIDMDLAYSPPFSPVWDPVLVALNQF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02939_Fatty_acid-binding_protein
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FVISEIGAAIGAHVGAGSYSVFFLRQG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02940_hypothetical_protein
VLMWEQDLIRFSFCARASLEFSILALNLYTCLTQDKIYMSARSPLRLKVEDMGLISYFHLLDKEGVRIDNPLTICL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02941_D-inositol_3-phosphate_glycosyltransferase
MKVALLSPIAWRTPPRHYGPWERVVSLIAEGLVKKGIDVTLFATGDSKTAGHLDYVCPIPYEENPNMDPKVWEAMHIAHLFEQAHKFDIIHNNYDFLPLSYSRLVDTPVVTTIHGFSSPKILPIYREYNRDNYYVSISNADRSPDLDYFATVYHGIDLNELTLNLDGDSYLLYFGRIHPDKGTAQAIEIARKSDMQLLIAGIIQDKQYFNREIYPRIDNKNIIYLGSVGPARRDELLGNALALLHPIHFNEPF
GLSVIEAMACGTPVIAFNKGSMPEVIKDGETGFLVDNVEMACEKLRSINKIKRANCRYWVEENFSQERMVSNYLSLYKQIVKGLSIRTPSLSSRWK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02942_DEAD-box_ATP-dependent_RNA_helicase_CshA
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LARVLTSRGYNADALHGDMSQRERDHVMHGFRQGNTKILVATDLAARGLDIELVTHVFNFDIPEDLDSYIHRVGRTGRAGRSGIAITLVEPTQIRLLRMIERHTGKRIERAILPTLAEAVEKRQDLLLERVRQASSEPGDICLSLAEKLMQQGDPKKMLAAALKLLIDEEPDFEMADLPESDDNMAHLELPAGRLQGMHPRQLLEFIAAHTSLSPQRVGDIEINRNSTFVEVPMDYIHEVYEAFEKYR
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MNKHMRDKEMVNDVLSMTKGGLATYAHCISETANQQLRQTLQQIRNSDEQFQYQLYQMAEQKGFYAPAAQVDTQDVQQVKSQLRS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02944_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02945_Cyclic_di-GMP_phosphodiesterase_response_regulator_RpfG
MFIRADISGLPLGRRLAQDLYAFDGHLLVAKGIVLQESHLQQLRQRGYEYVYIQEEDEVNENSLNQGIDYLIDKQLPKVFSISVESMRHMMARVSSGHMIKAVEVEECIDLVYDHVLRTYNVFKYLQNLRNKDEYTLQHSVSVGILSIKIGQSLGLDTDKLRNLGIAGLLHDIGKSMISPDIINKPGPLDENEFKEIQKHPVYGYRIVNGIKLQDYDIAQAVLQHHEHQDGNGYPLGVQGDKINDFARI
IAVADVFDALTSDRAYRPRMPLLQAVDIIIKSSCGQLDPLASRRLLSYVLDITTGEKVILSTGEEATVILKNEVEPARPLVRIGDNFLDLKTNRDVFIKDFAR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02946_TVP38/TMEM64_family_inner_membrane_protein_YdjZ
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02947_Aerobic_C4-dicarboxylate_transport_protein
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DIIPSNIFQSFLDGNTLQTIFLAVITGITMLVYKGRFPVISKVVSESNLIFSTLLDAICSLMPWVIFICIFDMLLSGDGRVLLSSIAVVVLICICFLLIVLLCLLSVALIEKQNPLQYIKTIGPVLLIALSTASSSATFAPHSMIASNKQGIRDYLANFSIPVGALFAKPFVVPVLLLMTLFVGNFYSLTFTAADVVSMVLLCVILSVAVPPVQGMGIFLFTIIFKRFTIPLEGLAMAASLFMLFDYLMTTGNVFSINISMLH
TEQRLREKDKRVIVYNNQKC*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02948_hypothetical_protein
MAYWLLCQSCKEWSKFTTPLSNDKVCPFCSNSFIMVKSHLSSIPYERTIEKAQDLPENPATVENEPAPSIEEKESLELQETEIAEITETAEMPKMKIENTAEIEEMPETSTAPDKPETEDKAELQENAEMPDQPEMTEISEIPEDTAIQETSLEEDQTNEISELQETEKVLTGNEKQNILRQKKKRSKYYR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02949_Multidrug_export_protein_MepA
MDRSARMRNQHIGKLLWNFSLPTIVGMLVSSLYNVIARIFVGRGIGSLAIAATTVAFPIMILLMAVSLLIGVGATALISLKLGEQKKDEAEKVAGTAMTMLILLPAALALLFLLFAEPILISFGASAAVLPYARDFTQIIMLGSVFGSISMGMNNFIRAEGNPAMAMYTQILGAVVSVALNYVFIFIFHWGIKGSALATILAQLISAIWVLSYFFTGRSLVKIHWKNLKPAWPVLSSIMAIGFAPFAMQTAACIQQ
LILNHTLMFYGGDLALAAIGIVMSISMLLVMPVLGLGQGAQPIIGYNYGARQYQRVRETWKTAVLAGTGIAVAGYLALHIWPLQLVGLFSKGDTALTTMTVHAMLTFFALLPVVGFQVVSSMYFQAVGKARQAAILSLSRQFLIFIPLLLILPRFWGIDGVWRTAPIADGLSVALTAGFILFEMKKIRQEEAQEPRGGGGETTPSGTFENLA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02950_Glutamine_transport_ATP-binding_protein_GlnQ
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FLSKVLMAR*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02952_Sulfate_starvation-induced_protein_7
LKRKVAWLILLCFSLGMLLMSGCAAKTPAPESSGDDSWTKIKDKGYFVMGLDDAFPPMGFRDEANEIVGFDIDLAKEVARRLGVEVQFQSIVWDTKKEELNSGNIDVVWNGFTINEERKKDFLFSKPYISDRQIIVVRADSDIAGKADLAGKKIGIQAASSANEAVEADKETFEVIKDNLLQFESNDLALRDLKGGGVEAVVVDEVVGRYYLSKHPGDYKVLKDNFGLEDFGVGFRLDDKAFHAEV
EKALDEMKADGTAAKISEKWFGEDIINK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02953_Endo-1,4-beta-xylanase_A_precursor
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AVTQIDPPVLTADLTNNTIGQAIDITFSDDIAWRTAISDVSIDGQSANAKYSINEGKITINAEVFNEARSYIIVVKAAGYNDIQLEQKIMQPSANGGGGSGDGNNSGGGSGDGSGGGAGSGTPGGLTVLSFNQAKLAPSDTLLQFDFGNGMDKTLSSNLNKIRVYEKASGTEVKHSNYNYIKQGSGNDAVKLRRLELMFNNLKPGTAYVVELEAGIEANNGSTLGSKQSFEFSTSGTTAGGGAAVPA
DEKSYGQEAATINEQGARIDIPAAAFDQDFKVKVRKVADVSQLPLAEKSKLISDVVEIEKDKSGEFKKAVSITLSFDKTKVDSNKYDIRICYLDEKANKWLPLSNIKVDLATGQVSGQTKHFTKFAVIAAEKATVPEQKAIENSKVVKLSDIQGHWAQKAIEELLASAAIGGYPDGSFKPEQNITRAEFTSILVKALKLNVKDGKVFDDTAQHWAKEAIAAAAAGGIVSGCSESIFAPDESITREQMAVMVV
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02954_tRNA_modification_GTPase_MnmE
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TPDDVMLTSFSILFARFKGDLLELVRGAKAIEKLRPGDEVLIAEACTHHAQDDDIGRVQIPRWLNRYVGGELNFHWYSGSGYPENLEQFKLVVHCGACMINRRQMLHRIDMARDSGVPIVNYGVLLAFVNGILERALQPFPQARAVL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02955_Aldehyde_dehydrogenase
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QTCVAPDYLLLQREIKEPLLKKMGEVLLKFYGANPRHSPDYARIISAGHFQRLEALLADGRILYGGEAVREERYIAPTIMDRIASDSPLLQEEIFGPLLPVLEFGDLEEAIQFVNERPKPLALYFFSRNRKRQEQVLKQSSSGGVCINDTLSHISSPYLPFGGVGESGMGSYHGQASFELFSHKKSVLQQSLSFDIPLKYPPYRIPLQALKKLLRILQA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02956_50S_ribosomal_protein_L13
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02957_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02958_MORN_repeat
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IVTGSDIAK*
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FSYEGPFGVGYLCAGLRPKASTPSRLEKLVKERKESINTSRNEESTPVRWARMILESYIREGKRAKLPPEMEELRQQRAGAFVSLKKNGQLRGCIGTIAPSYGDLADEIAGNAISAGTADPRFLPVDENELDDLVYSVDILGDAEACRIEDLDPHQYGVIVSSGRKRGLLLPDLEGVDSVEEQLSIALQKAGISPGERYEIERFEVKRYY*
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PGLVRLVLEEKYRNENFVRVLPAGVMPHTKWVYGSNLLDIGIYADEKSRHVILVSALDNLVKGASGQAIQNMNLLLGLEEDSGLKLAGIHP*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02964_Arginine_biosynthesis_bifunctional_protein_ArgJ
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EDYLLLQEALDYLCVSLAKKIARDGEGATRLIEVQVVNAADYESARQIARSITASNLTKAAVFGEDANWGRILAAAGYSGAEFDPGRVDIYLGQEKMAENGMGLLFDEERARQELKQDPVLIKVDLKSGKQQATAWGCDLSYDYVRINAAYRT*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02965_Acetylglutamate_kinase
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CVEAVTGGVGRTHIIDGRVPHSILLEVFTDEGIGTMVVNE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02966_Acetylornithine_aminotransferase
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DIVTLAKGLGGGFPIGAMLASEKAAGGFAPGDHASTFGGNPLATALACKVVDTVASQEFLAQVEKIAEYLYEALLSISDPRITAVRGRGLMLGIEFNTEVRELVEICMEKGLLLLGAGPKVLRFVPPLVVSEMEINQAMGILKGALMEWSA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02967_Ornithine_carbamoyltransferase
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LGTIFEALRRDSAIWLQDRLVIKVADILARSEVKQPDFESYSFPDLWQSFQEGCHKYRSLLHSCDHEKEIEKQLQLPPEKFHLSDELWVSALFSLLLAYTFDEQADRQEILAALTTLYNGRVASYVLEMHSFSEQLGFLTTREKDAILVGKMDNIRQCLSNRFWLLKPELSRQWLHRREQVKPAIIPLGYMEYVPGKPLVVPKKILGKDQCLINTDCIFRELRKRYENSFNAFLEQGLAVDVNAPPPTIVA
AIKDFMEQLEQSLEELFPGDLYNEQGLEKFVEALFAVFPQHSMFTVGEDLLREMLVRFPPVNVMIPLACYKPADLLKKMEARDALTYANLVEGRMYSDRTLLWLLDNLKPESFHWVGIKPIILKEELHPGELAQIRLSYLNRVTGRVTIKYLEEGKGGKYPRLRYFTSIIRRLAVAENFSQLFQVIVRERKNLGLKVGYSLLKLQKGDELSALNIFENQHHRKLVEKLRYLAKKLSEQGNEEKSRIFTLM
ADSYGLSQVLEDETFLTCTAWSWASYSFKGGIKIPTPMTTSVENRWFNHDFLELLYQELGYDPKEITSIIFRLIQANKGGQNLLDTLLPARPRDVAVVVQEITNEPSKYLKRYEGNPILEPIEEHDWESKYVLNPGALRIKDKVYLFYRAVGSDGISHIGLAISDGYKVLERLPHPIFSPSIAEEKRGCEDPRLIIIEDRIIMLYTAYDGNIAQIAAASIKVRDFLAGKYENWKRDGLAFKNIWDKDAILFPEKIN
DKYVIYHRIEPSIWATYMKEISFPLKENHAIIIGPRPGRMWDSLKIGAGAQPLKTKYGWLLIYHGVDYNYVYRLGVILVDLNDPAKVIYRSPNPVLEPEEDYEIGFSGAWVPNVVFSCGAVAAADKEVLEDNDEILVYYGAADTSIGMARATLADLVPEVFRVEVHT*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02969_Sporulation_kinase_E
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02972_Phosphomannomutase/phosphoglucomutase
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VPANFGWCDLGNWNALAEIYLPDLKSNICNGNDVLLIDSNNCIIKQNEKTIVLFGVDNLLLVESEDLVLVADRNRAQDIREIVEFLQEKKRFDLL*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02977_putative_nucleic_acid-binding_protein,_contains_PIN_domain
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_02988_hypothetical_protein
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IGEICAFCGNEISDERWQLLGNYFNDEVKKLESRIASGITKIELELDAIKGIEEIKEVVFYDRFKQDIRKLNLQIVAKRNEYKEFLSSLQAALEEKKKKLFIESTPLEIAIPANFNYIEKECEDLVKGHNELSLNLKTEQEKAKDALRYHEINKMLDEFQYDDESISLAKLSAINDEAQKVLGDKKNELQIKQDARKDLILQTKDEEKIAEKINKLLLSMGVVSFSLKLVKDDDENQKGQYQIKSHDENIRPITKLS
KGEKNIIAFLYFIFSLESVDSRSKPKVIVLDDPMTSNDDTMQYLMISEIQKLYRGLRDGNYLIILTHNCHFYLNVRPNTGRTYKENGEEISFYEKYGVYHLFSDGKRTTIKSISKGKQDFKTSYETLWKELVFLHNTEDASPDLMLSPCRKICETYMNFTKKGIEAFYGDNISAKKLFDVNQHSIDDFEAEANGKTKCEILAILQKLFTDNDAVDHINSYWRGGET*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03012_hypothetical_protein
MNIRQGYVFSFEDAINLQPRSRLEVILATLDFYDIITVLDKENKQHRGPTGYPFESKLNALIAMRVYNMATFTELVERLTHDPVLRYNCGFDVFGKVPSIATFSRFYERLTQSEVLRELFKK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03013_Transposase
MGLIDTSSIAIDASKVDANEKSVPRKNIKDDGQSANWGSKLDTNGNQITWFGYKLHIATDVKSELPVALSITPASTNDGIMAESILEECSNNLNSKPQYYLMDAGYDQKSIYELIRKDYKAQAIIPLNHRGAKEPPEGLDWDATPICSAGYRMAYWGGSNGVNKFRCPHVMGKCDCPFGSSWCSDSNYGMVVKTRARQDSRLFTVPHRGTSNWKLLYNKRTSVERCFGRLKEHLGLETGLNVRGI
KKVKTHAYLSVITMIASVIAINKDKSSTDIAA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03014_Serine/threonine-protein_kinase_PrkC
MKNNGDIILFLKQKDYIMVNNDLGGGSFGKTVLLQDPFIDELFVAKKYEPEYEDIKERFYKNFLDEIKILYKLNHRNIVRIYNYYAYENIFTGYILMEYVNGKNIGEFITDYLGFIKDVSLDDVFSQLIDGFCYIEEQGIIHRDIREGNILIDKIGTVKIIDFGIGKIFEKKTDDSDSLVAEINRSGSDTLPQEYFDGIYTSKTDMFYLAELFNRLLMEAHEQDLLDFSYQDILYKMMEKQPQNRYETFADIKEAI
GKHDFVNMVISQEDKDIYQAFTNLVFQALISFFDEQKFNYDIDIFVARLEKALRDNLFENIIQKNADIIGSIVFGAYRCSSNVVIPCSVVNDFLNWFTASTPQSQKLILTNIISKLSTIAVVEKEPEIPF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03015_hypothetical_protein
MDRIQVLIQIGKLGGKDIHYSEVADEIIKSDEYVLKAYEILEKDGYIHRGGLSTGLITEATLTVSGKNFLRNK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03016_Type_I_restriction-modification_system_methyltransferase_subunit
MITGEIRNKIDKIWTDMWAGGITNPLTVIEQLTYLMFIRSLDEKELEMERVEALSGEEMPKIFPQDKAGQDMRWSKFKTKDSRAIYDIVGSKVFPFIKAMNGKNTSAFSRYMQDAMFLISTPQVLQKIITGLDELYEHDIKDLDMQGDVYEYMLGKLSTAGQNGQFRTPKQIRDMMVRLLDPTPEDKICDIITAKTIQFNYPILMAS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03017_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03018_putative_secretion_ATPase,_PEP-CTERM_locus_subfamily
LLGYGQNELWERLKLQSYAAIRQRIDLQCKLPYLDRAEVGEYIKTHLAYSGADHDIFSDNAIDEIFKFSSGAARMVNKVCTHCLIYGAQNNRNIIDDHMVKFVVQGELS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03019_butyryl-CoA:acetate_CoA-transferase
MELKIALNYLKDYDRKFTFADEAVKCIKEGSIVRYAFGVCHTNELDFALARRRDKLNNVYILYDPDAYQYAAMISNSKKNISTLYHINGRCGNKKIFHLSIVY*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03020_Arginine_utilization_regulatory_protein_RocR
LIPDLLVSDLLDTSAMTAIIVCNNGTVVFINKTYLDVLGKKKEEVVGKNVGDITPESRTLTVLRTGKAIVGYNWSVNGYNMIACALPIIKDGKVVACFAYSLFMDIWDAKDLVNNLMSELNMYRDEVRNLYSARHGFSEIIGQARNIQDMKFMAQKAALHPSITVLVTGESGTGKELFAHAIHKASSRSRMPFIRVNCAAIPENLLEAELFGYEEGAFTGSRKGGNPGKFELANGGTIFLDEIGEMSTS
MQSKLLVFLQEKEFERLGSNHPIRVNVRIIAATNRNLEEMITQQKFREDLYYRLNVLTLDIPPLRNRIEDIPLLVNYLITKLNIDLKTNVVSMSDEALDLLSKYNWPGNIRELVNALQRAMLLADMGNYNIINAKHLYFLKINLDNVNLSLSSTKTLKMQLRCYEKQILSKVLEETNYNKRKTASILDVDLSSLYKKIKQYGLQPDDA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03021_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03022_hypothetical_protein
MIKFKSCSDDGFPEFRKIVFVGMRNFFDQAVKQKALQDPGDGSRAQVGDKFADHLVLKTLDVKLSPGQDFKKLTVGMAEGIEAFVASLILHDGIGDFGKLLNTVAGIVKGRDKLQVAPVLRPHPSGA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03023_putative_enoyl-CoA_hydratase_echA8
MELKTILYEKDAGVGIITLNRPKALNALNDELINELTILMDDIGSDNEVQAVIITGGERAFAAGGDIAFMANADSLQAEKFVEAIRVAFDKIDRLDKPVIAASGLALGGGSELALACDIRIAAEGSSIGQPEINLGIIPGAGGTQRLTRTVGPGWAKYMVMTGLPISADTALKIGFITKVVPKEQLMDEAKKIANIMAVKSPLAMKAAKRCVNYGLSVDLSSALSYEIKTWAALFSTEDQKEGMKAFLEKR
NPVYKSR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03026_hypothetical_protein
MEDIIRLYKDRIRIFLIIYFFSEEFHDSTNLNLVRVLYTETRIQKIDFLLRNPDYFALELLNLLPTKKHDRNQIKNVIIDIFKNREPEIRRLEMEKFFFGAYEDIDDVIAFLESYGFIVFKSKRNIELNVIDKQYYVTKYAKEKTDKVLSEMDSLKWYIDRCEQIKQYLGDYTGTQLKNMQYEEETYRNTSYKEFIANVQEKVKTIFKREFGENL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03027_ATPase_involved_in_DNA_repair
MKKLISELKKELEIRDLVIGDTELNEILERNEYVAELPIATGKRILLEELRFTGTKNNGDKIDYIQKFASGINIIIADNLTGKSSVFKVVKFALTGRDSLKSDISSWIKTIMLGFSIAAKSYTICIDKTSSRMSSTLYSTAIDQVNIEYDDNVIFQSNTKSDYEVQIQDFFFNQFSYYPLSWTQKDSAKDSIELRETKASWSTYFKSIYLESKDTNSFYGNQGSKTFQILLGLKYTKTINKLMIKRDFIKNSLAKKDGGD
NISLVKKEDLLNELKKIEVGLDAIRTNSDYVKFQSLKELQNSLFMDIQASSMIFSSSNNRHYQLLAELDNSRSARDSLTKEKDGLEKEVTKITRKINDLKEYLESGYFFSNLTIKMCPSCNHEIDMSPTNEEHECNLCHKPVVSEIENKEQFSERLKQLTETKIILEIKINEIEEKISTLQKSISGLEKEKLDIEKTIQNNDYAELSQKSAQINKQLNELNDKLKQSTERENELISQKAILNYRLSLQEVDSDDNVG
KLNKKLEVLEISIDYFINKRFEESKPVLTSLEDLMLNEIHAFGLPSITKIHIDKLFNIEYTQNGTRIKFEDIAEGEQLRVKLAFYLSIIQLDIQKNYGKHPRLLMIDSPAKEEGDNKYLEGLKAVLADIENRYADKLQILIGTAERNLSDIVRSQFVYEADQYVF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03028_hypothetical_protein
MCFDIAILDTYKTKNQAEKLNFWEGQLPLCNFEKQNSRQLVSFIHQIIADSQEAIYSKCQAIDFSIRMFLADILKDRNILDILLDSWEPTSDIHLETLRIKRLALLYPYDTDIQSVLNELAQSDSLVSTESNYQLGLINLFVAREKRSIDEVVEVLRIAYVHFDVASKEENRIDASLFKVITNSIIYIFCNNWLEFDKCIKELERLIFIQRIYSWNPDVVTLHRAIYSKLYNAKLIIKKDTKNWLNYKAEFDQLCMEFF
NIQNQSVKSDLFSMEIEHGISDNLITKVIEPVFKTNFHSVLCKIDCLLNDDSIEENQAEFLIYLKDVIQQQSETEISEYDFFNQSIIRTFPHLPESKSRIFYDAIKDSNLQIISNILDQLTNSNGYDKLFERIMYACVTLQGTRHYYGSEENIRNKFIAQLLEASGFRTKDQTQWGLSNKGISDGEIDVQIVDDKGTAYSIIEGLILKSLDTTYLNLHLDKIFKYDTTGLEYIFIVSYVAVADFSSLFTAIQKSQQCDV
LEPHCA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03029_hypothetical_protein
MILRNVQLVRKGHLADNIGIKRRRRFNINIDDMSIQGVFYIKQYLEKLQLEDQFCRLFAPEDINQLLYIYGRVYRINYSEALINVFEIVLNNAIYSVLSGNSEVKLRISQEQFEHLQQKFMGLDHSHTIALIEDAIEILIKQLGIDQPRPQDYIRKFKSVFLSRFINGLTYNCLENVILIDKEQTQNFDIVFDEGNRLDDESFRLVVDDIMDCTFTKRKTDIVRSSIHSLGDFIDILEADCFFGDEFYDLFNSLGDM
ELSVLARIVFIEEIRSNLMSFSLASPGEKAEAMEWQVEFCNFLQSLSADRIESIETYIKSSLQMTDAWDFLG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03030_putative_ABC_transporter_ATP-binding_protein_YheS
MKIAMGLAIMGQYDLLILDEPTNHLDVHSREALEESLRQFPGSILLITHDRYFLEQICDGMLVFEQQRIMRIEGNSAKKQFAETRADSVKTSNDEETLVLETRISWVLGQLNRYKPGDPKYTALDKEYSELIQRKNALSKQL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03031_Regulatory_protein_BlaR1
MASTGTKVGAYGFIAGWHFYCYRRFTMQLRADSLPVADDTAAVILSSCKAALGVHGDVKLMQNHKITGPMLVGLLRPMILLPASSISGMDLNLVLAHELMHLKRKDLWVKMLALLAGTLHWFNPLAHILCKDVSIWGELSGDEALVYEMSHEERKLYGEAILNTLDNHSSINTALIQITASQCIS*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03032_Competence_protein_ComM
MEDKKVTISRVKYTNSYPANFMLVAAMNPCQCGYYGTDKCRCTDYEVLKYRQKISGPISDRIDIQKYVHPVDFMNLSNFTAKTSSSELRERVEAARIIQNKRFEKYENIISRAGFTFMSQTHLLRGRILLLSATDPIYSL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03033_(R)-stereoselective_amidase
MICYDCRFPELARAAALEGAELLVIPAAFNTTTGPAHWQLLMRCRAVDNQLFVAAASPARNLSASYQAWGHSLVVDPWGDILQEAGSGEEIIHARLDFSRLEQVRQELPLLRQRRKDLYRLDYKAPGNGIV*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03034_HutP
MALSAYRQEETRLKKELLENWEVKAVAVDYGGEFISSVGKIVERAVVAASPFA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03035_Tyrosine_recombinase_XerD
MDISYWRELNDGFTDFLVEKGYTHDITRHYRGTINLLIRFANANGYKAYTQEIGEKFLKSEERLMYLQQAGYQRQRLVIRRFNEYLDDGKYSYTYLRVNYECPEAFEEVLEHYLKSLETANLKQCTIDKHRVFTIKLCRDFARNGIESWDTVDAKALAGAFDRATSKAQFAACIRKLFGFLVKEGIVKYNYAGIVPQMHYWKRIPSVYSSDEIEAILGSVDRSNEVGKRNYAILLLAARLGMRSSDISFLRF
ENIDFVKAIIEFKQRKTGVANQLTLLPEIAEALQDYINNARGDSVEPYIFLTCRESLRKGVLPQLSSGAICRVAAKHFRQSGIEFGDRHHSAHALRMSLASGLVAENVPYEAVRTILGHEDPNAITHYVKFDTESLRSCALDVPMASGRFAEYLASGKGAL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03036_Tyrosine_recombinase_XerC
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HYFTFKSFLKSEAARRPLEESGPRLAAYLGHESLIGTEKYITTNYVLYKNSHARMEESIGNLFPEVNFE*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03037_Tyrosine_recombinase_XerD
VKSKPGELTRLLSEFFTEYLPTTKGLSANTITAYQYAFRLLFGYLDDVKGIMPTKVSFETLSNGVIDEFLVHLEQERQCTAKTRNVRRSAIIAFAKYAAKKSFSASLPFYSEAITSAKKKEPKNNIIKYFTKEEIQLLLKLPDTSKAIGQRDVAMMAALYATGARAQELCDITLKDITLATPSFPTKVRLTGKGNKSRIITIPMSCTAIITEYLRVRKYDLNNKSTYDRHLFSSQANEQMSISCVEEVVRKYVVRA
KELYPKLFRQNDYTPHSFRHSIAVHMLEAGESLIAIKAFLGHASISSTVVYAKLTPELANKYLDELGKPLENTMMQSIPQSLPNAMPFLYR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03038_Transposase
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ETKGKVENVVKYVKRNFAKNRTFHNLEKLNEDCLAWLERTGNGKVHNTTKKIPVEVFALEKQHLIPVPHKINISTTKIITRVVRKDNTIVYKGNRYALPLGTYAPERRVVVKEDEGILIIANLDDELEIIRYPVCLEKGRLIKSSDCRREKDKGIDTYLQEVAQILNDSQQAYDFLGLVRQEKPRYIRDQLKIIKDHSLDKSPEVISKALNYCLKNRLYGATDFVDSLNHFNHFHNVAEEKLSIKNDIQPLY
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03039_Chromosomal_replication_initiator_protein_DnaA
VSAELEQLKNDMKRLKITEAAAVVEERLLEAQVTEPSYQVFLTNLVQHEIKKREEKQLGRLYKLAAFPEYKPLDNFDLSEQQSLSKKQLKQLQELIWLEQAYNLILLGPPGVGKTCLSIGLGIEAISRGYRVTFVQMDELIRLLKTEEISRNSRAKVKRMVGSDLVIIDDLMFMAIDRHEANLFFQLINKLYGQTSIIITSNKGPEDWGDILGDPAITTAILDRLIHKSEVIHLSGDSYRLKHRQTIFGNN*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03040_hypothetical_protein
MLVETTVKQGSFYNVLYQMIPDNHILKRIDSAIDLSFVNELLADRYCKNFGRPAKEPEMMLRIQILKYLYNLSDEQLIQDLSVNLAYKWDVRGIGIFTAPPGMGKAYALRCFAKDLNPNLYQMVYTFLSTVSVSEFYRQFCTMLGIDAGFRKTDMFKAIQDTSIMPCYYCTQVFTNKPYWYHSAAIGDYCSGIPPLTARLIVLTSG*
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MIEITTSWEEKGRVKGIAEGIAEGQASILLRQLKKKFGHMPIEMENRVMTMPIEKLQNLAEAIFDLGTLNEVDNFINK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03042_Transposase
MIKYREILRLHSQDVSGRSIASSCQCSRNTVSKVLERAEGCGITWPFEKDMADADLQKLLFPEKSIKSSRKLPDCANIHKEMAKSGVTLSLLWHEYCETCRLSGEIPLMYSQFCRYYREYANKTKATMRIKRKPGEMMELDWAGKTAFLKDNITGEPIPAPIFVAVLSCSQYAYVEAFLNMNMESWINAHIHAFNYFGGVTRILVPDNLKTGVEQVSKPDPKINKTYHEMAEHYGTAVIPARVRHPKD
KPHAEGTVGIISTWIIASLRHQQFFSLRELNGAIQEKLAEFNEKPFQKKPGSRKSAFLEEEKALLLPLPASPYELATWSKASVQYDYHIYVDKNQYSVPYEYIRHQVDVRLTSKIVEVFYHNHRIASHLRVLGKEGQVITVPEHMPEKHQKYLEINGDFFRKWAADVGANTVIVVNAILTRHKVEKQGYRACTSLMKLADTYSLSRLEEACHRALSYTPSPSFKTIQTILKTGQDKMSVKESRPVTRSNTET
HGFVRGADYYGGKEHD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03043_YcfA-like_protein
MNPKELMQILAQDGWKVVRIQGSHHIHKHPAKSGTIPVALHNKDMAPGTLNKILKIAGLK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03044_hypothetical_protein
MIYIYPAIFSHCEVEERGTVYTVEIPDIPGCITEGESIQEAMAMGREALAGCILAIKQDNEEVPAPSEYRDITTESPDNFVTLLDVDLNEYLRKRETKSIIKTVSLPQWLAIMAEESGISYSQALQQALKQHLGIQD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03045_Putative_zinc_ribbon_domain_protein
MKICIACGMPMNKPADFAMGDESKDYCLYCCNPDGSMHSYEEKLNGLTAFIIRTQGLDEQAACSAAQSMMAKLPAWKDRNNQDA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03046_hypothetical_protein
LSKKEKLMARLLSKPKDFTFEELTALLGYFDYEQTKLGKTSGSRVVFTNGDGDYIRLHKPHPRNILKPYQVEDVITALQERGLL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03047_putative_protein_encoded_in_hypervariable_junctions_of_pilus_gene_clusters
MSNYIHYRDYTGSIEFSEEDAVFHGRVIGIKNMLSFEGDSVKTLTEDFHNAVDEYLEFCENSGKQPEKPFKGSFNVRIQPELHRKAALAASARGVSLNAFVEDAIRHTVD*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03049_Group_II_intron-encoded_protein_LtrA
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HDSLKERFAECGLELHPTKTRIVYCKDDDRREEYPETKFDFLGYTFRPRRSKNKYGKYFVNFTPAVSNKAKKAMRQTIHDWRMHLKPDKTIEDLSHMFNPVIRGWINYYGRFYKSELYSVLRHMDWALVRWVQRKYKKFATHKRRATYWLGQIARREPKLFAHWQMGIRPAAG*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03051_hypothetical_protein
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03052_Succinyl-CoA:coenzyme_A_transferase
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VDSFVDMYEAGRITGRRKQLDKCKMAYTFAMGTNKLYNFLDGNPACAIYPVDYTNDPFIIGRNDKVLGINNAIEVDLYGQVASESSGTRHISGTGGQLDFIIGSYYSKGGKGLICLTSTFTDKEGRLQSRIRPTLTPGAVVTVPRSINFYVVTEYGITMLKAKSTWQRAEALINLAHPNLRDELIKEAEKMRIWVRSNKLV*
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>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03057_Transposase_IS116/IS110/IS902_family_protein
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LEAFGYTVTIDQQIGISTA*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03058_putative_secretion_ATPase,_PEP-CTERM_locus_subfamily
LLGYGQPLIRSKLALNVNNPLRQRIVVKHMMSNMQKDELGGYLKTRLAFGGTHEELFTAPSMEAIYGVTNGVPRLVNSLATNCLLYACEKKQRQVDEETVYQAQSELNF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03059_Aminoglycoside_3'-phosphotransferase
VGKWGMLAVDDLVVPHGEYVLSYIMVENVQFSGFIDCGRLGVADRYQDIALATRDIAEELGGEWADRFLVLYGIAAPDSQRIAFYRLLDEFF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03060_DMSO_reductase_iron-sulfur_subunit
MVCSLVHENACSPALSRIRIVRYRREALNVPVTCAFCEKPPCLDVCPVGAITKNHETGDVSIRAELCIGCRQCAQACPFGHMNFNAAKGIAFKCDLCGGDPQCVKFCWTGAIEYVDSEIAVDIKRSGFADSVLQQHNK*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03062_hypothetical_protein
MNLYCISQVIILLCFSQPEYCVITFSKFYPGKIQYYYGDYPVKVLISSAAYVLVAKHATGIIAAASLHVAQVANLHFYIHQVIVF*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03064_hypothetical_protein
LAKEDPAIGKAKRVLEQMASNPRERELYELRRKAILDRNSALYEAKMEGIAEGIAEGKVEGQASILLRQLKKKFGYLPVEMENRVMTMPTEKLQNLAEEIFDLGTLDEVDNFINR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03065_hypothetical_protein
MGSFNKGRCHKGHPIPGQAMRHLVRIPMGLCHLHAMRADDSPADSHRPHRSRASLNPATEGLDATAERPDANPTPSPVTGAVNDERHGGAIMLDVDIDERLGKGVENLI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03066_ferrous_iron_transport_protein_B
VATLLTWFLQTFDAKLNVVTDSAKSLLAMIGTAIAPALNPVGFGDWRIATALITGFIAKESVVPPLQILLGGGAPSSLFTVRRSLTFLSFTLLYTPCVAAVSAVRRELGSGLRALGVVIAQTAVAWIVAFAVYQLLGIWL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03067_putative_FAD-linked_oxidoreductase
LVTRGRVTGGAGVCDALKGGIVLDLSTLDEIVEIDDPSIQVIVRPGVIHAQLNQEVSKYKLFFPPDPGSSQMCTIVGMVANNASGLRAVKYGCTEQYILGMEVVLPNGEVITTGGVKDRCIKNVSGLNLTKLMVGSERVLGILTRSRLR*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03068_hypothetical_protein
VTPSEAFERLNTICNHTPSDDFKEKIDLLEKYRNRLTHAEISIDDQDIILLFDNLLDELDMYLFSNIGVATACFLRRVLRIGRAGVHQRPRQHRVGSLWSQSGYERGLQGDKFKDHVVNNGVHFFRHKKHGI*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03069_hypothetical_protein
LKLVELIENLTIELQDGPVAREISGIAYDSRRGQSGHICL*
>Syntrophomonas_wolfei_subsp.metylbutyratica_JCM14075T_03071_hypothetical_protein
MSRERLTLRVRLVFHPTGVTIKVASYGREIGAVPLEPRDKPLVPMRSALSGTTDAPCGRY*
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