

Supplemental Table A. Predicted function and classification of all *Mmymy*SC ORFs

ORF name	Start position	Gene name	Gene product	EC-number
Amino acid biosynthesis				
MSC_1015	1157805	<i>asnA</i>	aspartate-ammonia ligase	6.3.1.1
MSC_1040	1181562	<i>asnA</i>	aspartate-ammonia ligase	6.3.1.1
Purine, pyrimidine, nucleoside and nucleotide metabolism				
MSC_0005	4156	MSC_0005	hypothetical purine NTPase	
MSC_0046	56116	<i>tmk</i>	thymidylate kinase	2.7.4.9
MSC_0049	59379	<i>codA</i>	cytosine deaminase	3.5.4.1
MSC_0050	59963	<i>guaC</i>	GMP reductase	1.6.6.8
MSC_0134	157063	<i>ctrA</i>	CTP synthase	6.3.4.2
MSC_0149	173034	<i>tdk</i>	thymidine kinase	2.7.1.21
MSC_0218	251730	<i>gmk</i>	guanylate kinase	2.7.4.8
MSC_0256	291075	<i>hpt</i>	hypoxanthine phosphoribosyltransferase	2.4.2.8
MSC_0336	385427	<i>truB</i>	trna pseudouridine synthase B	4.2.1.70
MSC_0388	440441	<i>dguok</i>	deoxyguanosine kinase	2.7.1.113
MSC_0407	462351	<i>cmk</i>	cytidylate kinase	2.7.4.14
MSC_0474	538793	<i>apt</i>	adenine phosphoribosyltransferase	2.4.2.7
MSC_0475	539388	<i>relA</i>	GTP diphosphokinase	2.7.6.5
MSC_0552	628179	<i>udk</i>	uridine kinase	2.7.1.48
MSC_0581	653425	<i>dctD</i>	dCMP deaminase	3.5.4.12
MSC_0583	655204	<i>rluD</i>	ribosomal large subunit pseudouridylate synthase D	4.2.1.70
MSC_0715	822611	<i>truA</i>	pseudouridylate synthase I	4.2.1.70
MSC_0725	831915	<i>adk</i>	adenylate kinase	2.7.4.3
MSC_0830	943686	<i>deoA</i>	thymidine phosphorylase	2.4.2.4
MSC_0835	950083	<i>pnp</i>	purine nucleoside phosphorylase	2.4.2.1
MSC_0848	964307	<i>hpt</i>	hypoxanthine phosphoribosyltransferase	2.4.2.8
MSC_0849	964894	<i>purB</i>	adenylosuccinate lyase	4.3.2.2
MSC_0850	966185	<i>purA</i>	adenylosuccinate synthase	6.3.4.4
MSC_0853	969187	<i>nrdE</i>	ribonucleoside-diphosphate reductase alpha subunit	1.17.4.1
MSC_0854	971336	<i>nrdI</i>	ribonucleotide reductase	
MSC_0855	971818	<i>nrdF</i>	ribonucleoside-diphosphate reductase 2 beta chain	1.17.4.1
MSC_0893	1015953	<i>upp</i>	uracil phosphoribosyltransferase	2.4.2.9
MSC_0952	1081475	<i>prs</i>	ribose-phosphate pyrophosphokinase	2.7.6.1
Fatty acid and phospholipid metabolism				
MSC_0156	179554	<i>cls</i>	cardiolipin synthetase	2.7.8.-
MSC_0257	291692	<i>glpF</i>	glycerol uptake facilitator	
MSC_0258	292507	<i>glpK</i>	glycerol kinase	2.7.1.30
MSC_0259	294041	<i>glpO</i>	glycerol-3-phosphate oxidase	1.1.3.21
MSC_0264	302253	<i>lplA</i>	lipoate protein ligase	6.-.-.-
MSC_0276	315887	<i>dhaK2</i>	glycerone kinase	2.7.1.29
MSC_0356	407304	<i>cdsA</i>	phosphatidate cytidyltransferase	2.7.7.41
MSC_0368	420652	<i>lip1</i>	triacylglycerol lipase	3.1.1.3
MSC_0409	464328	<i>gpsA</i>	glycerol-3-phosphate dehydrogenase [NAD(P)+]	1.1.1.94
MSC_0480	546655	<i>plsX</i>	fatty acid/phospholipid synthesis PlsX	
MSC_0530	603802	<i>lip2</i>	triacylglycerol lipase	3.1.1.3
MSC_0531	604596	<i>lip3</i>	triacylglycerol lipase	3.1.1.3
MSC_0577	650816	<i>plsC</i>	1-acyl-sn-glycerol-3-phosphate acyltransferase	2.3.1.51
MSC_0747	843789	<i>dhaK1</i>	glycerone kinase	2.7.1.29
MSC_0837	951302	<i>pldB</i>	lysophospholipase	3.1.1.5
MSC_0911	1036323	<i>pgsA</i>	CDP-diacylglycerol--glycerol-3-phosphate 3-phosphatidyltransferase	2.7.8.5
MSC_0939	1064929	<i>Igt</i>	prolipoprotein diacylglycerol transferase (extended)	2.4.99.-
MSC_1064	1208233	MSC_1064	LICA protein	
Biosynthesis of co-factors, prosthetic groups and carriers				
MSC_0004	3299	<i>ksgA</i>	dimethyladenosine transferase KsgA	2.1.1.-
MSC_0029	31891	<i>acpD</i>	acyl carrier protein phosphodiesterase	3.1.4.14
MSC_0096	114548	<i>coaE</i>	dephospho-CoA kinase	2.7.1.24
MSC_0106	123900	<i>ribC/ribF</i>	riboflavin kinase / FAD synthetase	2.7.1.26
MSC_0151	174753	<i>hemK</i>	protoporphyrinogen oxidase	2.1.1.-

MSC_0272	312742 <i>kdtB</i>	pantetheine-phosphate adenylyltransferase	2.7.7.3
MSC_0280	319637 <i>thiI</i>	thiamin biosynthesis protein	
MSC_0440	495965 <i>nadE</i>	NH(3)-dependent NAD(+) synthetase	6.3.5.1
MSC_0442	497013 MSC_0442	probable nicotinate-nucleotide adenylyltransferase	2.7.7.18
MSC_0501	569654 <i>nifS</i>	nitrogen fixation protein NifS	
MSC_0502	570895 <i>nifU</i>	nitrogen fixation protein NifU	
MSC_0578	651950 <i>acpS</i>	holo-[acyl-carrier-protein] synthase	2.7.8.7
MSC_0687	790741 <i>pncB</i>	probable nicotinic phosphoribosyltransferase	2.4.2.11
MSC_0942	1068242 <i>folC</i>	dihydrofolate:folylpolyglutamate synthase	6.3.2.17/6.3.2.12
MSC_1020	1165209 <i>pncA</i>	pyrazinamidase/nicotinamidase	3.5.1.19
MSC_1045	1188966 <i>pncA</i>	pyrazinamidase/nicotinamidase	3.5.1.19

Central intermediary metabolism

MSC_0129	151266 <i>nagB</i>	glucosamine-6-phosphate deaminase	3.5.99.6
MSC_0145	168949 <i>glpQ</i>	glycerophosphodiester phosphodiesterase	3.1.4.46
MSC_0270	309526 <i>ackA</i>	acetate kinase	2.7.2.1
MSC_0503	571325 MSC_0503	5-formyltetrahydrofolate cyclo-ligase	6.3.3.2
MSC_0533	606628 <i>nagA</i>	N-acetylglucosamine-6-phosphate deacetylase	3.5.1.25
MSC_0555	630838 MSC_0555	N-acylglucosamine-6-phosphate 2-epimerase	5.1.3.9
MSC_0559	634606 <i>nal</i>	N-acetylneuraminate lyase	4.1.3.3
MSC_0821	933483 <i>nagB</i>	glucosamine-6-phosphate deaminase	3.5.99.6

Energy metabolism

MSC_0017	23628 <i>mtlD</i>	mannitol-1-phosphate 5-dehydrogenase	1.1.1.17
MSC_0020	25874 <i>srlD</i>	sorbitol-6-phosphate 2-dehydrogenase	1.1.1.140
MSC_0034	43808 <i>ldh</i>	D-lactate dehydrogenase	1.1.1.28
MSC_0118	140141 <i>uhpT</i>	hexosephosphate transport protein	
MSC_0139	162491 <i>fbaA2</i>	fructose-bisphosphate aldolase class II	4.1.2.13
MSC_0162	187584 <i>xylS</i> or <i>aglA</i>	alpha-xylosidase or alpha-glucosidase	3.2.1.-/3.2.1.20
MSC_0253	288393 <i>eno</i>	phosphopyruvate hydratase	4.2.1.11
MSC_0260	295427 <i>pfk</i>	6-phosphofructokinase	2.7.1.11
MSC_0261	296590 <i>pyk</i>	pyruvate kinase	2.7.1.40
MSC_0263	300886 <i>nox</i>	NADH oxidase	1.6.99.3
MSC_0265	303301 <i>pdhA</i>	pyruvate dehydrogenase (lipoamide), alpha chain	1.2.4.1
MSC_0266	304413 <i>pdhB</i>	pyruvate dehydrogenase (lipoamide), beta chain	1.2.4.1
MSC_0267	305431 <i>pdhC</i>	dihydrolipoamide S-acetyltransferase	2.3.1.12
MSC_0268	306736 <i>pdhD</i>	dihydrolipoamide dehydrogenase	1.8.1.4
MSC_0269	308545 <i>pta</i>	phosphate acetyltransferase	2.3.1.8
MSC_0305	348210 <i>rpe</i>	ribulose-phosphate 3-epimerase	5.1.3.1
MSC_0307	349801 <i>pkn</i>	serine/threonine protein kinase	2.7.1.-
MSC_0354	402184 MSC_0354	nitroreductase family protein	1.6.6.-
MSC_0372	423540 <i>tkt</i>	transketolase	2.2.1.1
MSC_0396	449067 <i>rpe</i>	ribulose-phosphate 3-epimerase	5.1.3.1
MSC_0404	459982 <i>ppa</i>	inorganic pyrophosphatase	3.6.1.1
MSC_0481	547692 MSC_0481	predicted kinase related to hydroxyacetone kinase	
MSC_0495	561326 <i>pmi</i>	mannose-6-phosphate isomerase	5.3.1.8
MSC_0505	574024 <i>pgi</i>	glucose-6-phosphate isomerase	5.3.1.9
MSC_0509	577274 <i>gapN</i>	glyceraldehyde-3-phosphate dehydrogenase (NADP)	1.2.1.9
MSC_0526	600219 MSC_0526	NADH dependent flavin oxidoreductase	
MSC_0529	603271 <i>gcdH</i>	glycine cleavage system H protein	
MSC_0532	605620 <i>ldh</i>	L-lactate dehydrogenase	1.1.1.27
MSC_0544	617738 <i>pdhD</i>	dihydrolipoamide dehydrogenase	1.8.1.4
MSC_0618	703168 <i>atpD</i>	ATP synthase beta chain	3.6.1.34
MSC_0619	704547 <i>atpA</i>	ATP synthase alpha chain	3.6.1.34
MSC_0644	738332 <i>fbaA1</i>	fructose-bisphosphate aldolase class-II	4.1.2.13
MSC_0678	776053 <i>pgk</i>	phosphoglycerate kinase	2.7.2.3
MSC_0679	777382 <i>gap</i>	glyceraldehyde-3-phosphate dehydrogenase	1.2.1.12
MSC_0758	852900 <i>folD</i>	methylenetetrahydrofolate dehydrogenase (NADP+) / methenyltetrahydrofolate cyclohydrolase	1.5.1.5 / 3.5.4.9
MSC_0794	894981 <i>patB</i>	aminotransferase (PLP-dependent)	2.6.1.-
MSC_0806	910920 <i>patB</i>	aminotransferase (PLP-dependent)	2.6.1.-
MSC_0823	936231 <i>tpi</i>	triosephosphate isomerase	5.3.1.1
MSC_0825	937809 <i>gpm</i>	phosphoglycerate mutase (2,3-diphosphoglycerate-independent)	5.4.2.1
MSC_0828	941246 <i>deoC</i>	deoxyribose-phosphate aldolase	4.1.2.4
MSC_0829	941848 <i>manB</i>	phosphoglucomutase or phosphomannomutase	5.4.2.8
MSC_0832	947115 <i>fruB</i>	1-phosphofructokinase	2.7.1.56
MSC_0840	954623 <i>bgl</i>	beta-glucosidase	3.2.1.21

MSC_0841	956004 <i>suk</i>	sugar kinase, ROK family	
MSC_0845	959127 MSC_0845	glycosyl hydrolases family protein	
MSC_0863	984307 <i>glk</i>	glucokinase	2.7.1.2
MSC_0884	1008927 <i>atpC</i>	ATP synthase epsilon chain	3.6.1.34
MSC_0885	1009226 <i>atpD</i>	ATP synthase beta chain	3.6.1.34
MSC_0886	1010662 <i>atpG</i>	ATP synthase gamma chain	3.6.1.34
MSC_0887	1011506 <i>atpA</i>	ATP synthase alpha chain	3.6.1.34
MSC_0888	1013095 <i>atpH</i>	ATP synthase delta chain	3.6.1.34
MSC_0889	1013642 <i>atpF</i>	ATP synthase B chain	3.6.1.34
MSC_0890	1014216 <i>atpE</i>	ATP synthase C chain	3.6.1.34
MSC_0891	1014551 <i>atpB</i>	ATP synthase A chain	3.6.1.34
MSC_0895	1017901 <i>rpiB</i>	ribose 5-phosphate isomerase, RpiB	5.3.1.6
MSC_0938	1064013 <i>trxB</i>	thioredoxin reductase (NADPH)	1.6.4.5
MSC_1019	1163647 <i>nox</i>	NADH oxidase	1.6.-.-
MSC_1044	1187404 <i>nox</i>	NADH oxidase	1.6.-.-

Transport and binding proteins

MSC_0008	10082 <i>rbsC-2</i>	ribose/galactose ABC transporter, permease component II	
MSC_0009	11059 <i>rbsC-1</i>	ribose/galactose ABC transporter, permease component I	
MSC_0010	13616 <i>rbsA</i>	ribose/galactose ABC transporter, ATP-binding component	
MSC_0011	15235 <i>rbsB</i>	ribose/galactose ABC transporter, substrate-binding component	
MSC_0019	25446 <i>EIIA-mtl</i>	PTS system, mannitol-permease IIA component	2.7.1.69
MSC_0021	26632 <i>EIIBC-mtl</i>	PTS system, mannitol-permease IIBC component	2.7.1.69
MSC_0030	32527 <i>abc</i>	ABC transporter, ATP-binding component (antibiotic?)	
MSC_0033	37983 MSC_0033	predicted permease	
MSC_0035	44813 MSC_0035	malate permease	
MSC_0054	65125 <i>ptsG</i>	PTS system, glucose-specific IIBC component	2.7.1.69
MSC_0076	92413 <i>comEC</i>	competence protein ComEC	
MSC_0077	93174 <i>phnE</i>	phosphonate ABC transporter, permease component	
MSC_0078	95913 <i>phnC</i>	phosphonate ABC transporter, ATP-binding component	
MSC_0079	96679 <i>phnD?</i>	prolipoprotein, putative phosphonate ABC transporter	
MSC_0113	132385 <i>abc</i>	ABC transporter, ATP-binding component	
MSC_0130	152046 <i>nagE</i>	PTS system, N-acetylglucosamine-specific IIBC component	2.7.1.69
MSC_0167	194564 <i>mgfE</i>	Mg(2+) transport protein	
MSC_0180	210699 <i>oppB</i>	oligopeptide ABC transporter, permease component	
MSC_0181	211959 <i>oppC</i>	oligopeptide ABC transporter, permease component	
MSC_0182	212983 <i>oppD</i>	oligopeptide ABC transporter, ATP-binding component	
MSC_0183	214673 <i>oppF</i>	oligopeptide ABC transporter, ATP-binding component	
MSC_0184	216570 <i>oppA</i>	oligopeptide ABC transporter, substrate-binding component	
MSC_0224	255560 <i>potA</i>	spermidine/putrescine ABC transporter, ATP-binding component	
MSC_0225	256615 <i>potB</i>	spermidine/putrescine ABC transporter, permease component	
MSC_0226	257592 <i>potCD</i>	spermidine/putrescine ABC transporter, permease and substrate-binding component	
MSC_0273	313258 <i>ptsI</i>	phosphoenolpyruvate-protein phosphotransferase	2.7.3.9
MSC_0274	315059 <i>crr</i>	PTS system, glucose-specific IIA component	2.7.1.69
MSC_0289	329289 <i>ctp</i>	cation-transporting ATPase	3.6.1.-
MSC_0315	356930 MSC_0315	predicted permease	
MSC_0323	369395 <i>abc</i>	ABC transporter, ATP-binding component (Na+?)	
MSC_0324	370102 <i>abc</i>	ABC transporter, permease component (Na+?)	
MSC_0394	446798 <i>pts</i>	PTS system, IIA component	2.7.1.69
MSC_0398	450876 <i>natA</i>	Na+ ABC transporter, ATP-binding component	
MSC_0434	487991 <i>abc</i>	ABC transporter, permease and ATP-binding component	
MSC_0435	489871 <i>abc</i>	ABC transporter, permease and ATP-binding component	
MSC_0459	521270 <i>abc</i>	ABC transporter, ATP-binding and permease component	
MSC_0485	550801 <i>pstS</i>	phosphate ABC transporter, substrate-binding component	
MSC_0486	552012 <i>pstCA</i>	phosphate ABC transport system, permease component	

MSC_0487	554208 <i>pstB</i>	phosphate ABC transporter, ATP-binding component	
MSC_0493	559308 <i>cut</i>	copper homeostasis protein	
MSC_0516	587730 <i>gtsA</i>	glycerol ABC transporter, ATP-binding component	
MSC_0517	588928 <i>gtsB</i>	glycerol ABC transporter, permease component	
MSC_0518	589934 <i>gtsC</i>	glycerol ABC transporter, permease component	
MSC_0558	632901 MSC_0558	sodium:solute symporter family	
MSC_0646	740123 <i>pts</i>	PTS system, sucrose-specific IIBC component	2.7.1.69
MSC_0704	807844 <i>abc</i>	ABC transporter, ATP-binding component (Na+?)	
MSC_0714	818371 MSC_0714	predicted permease	
MSC_0716	823369 <i>abc</i>	ABC transporter, permease component (vitamin B12?)	
MSC_0717	824393 <i>abc</i>	ABC transporter, ATP-binding component (vitamin B12?)	
MSC_0718	825292 <i>abc</i>	ABC transporter, ATP-binding component (vitamin B12?)	
MSC_0749	846530 <i>pts</i>	PTS system, trehalose-specific IIBC component	2.7.1.69
MSC_0759	853775 MSC_0759	sodium transport protein	
MSC_0768	865379 <i>ptsH</i>	phosphocarrier protein HPr	
MSC_0788	889736 <i>phnB</i>	alkylphosphonate ABC transporter, permease component	
MSC_0789	891532 <i>phnC</i>	alkylphosphonate ABC transporter, ATP-binding component	
MSC_0790	892292 <i>phnD</i>	alkylphosphonate ABC transporter, substrate-binding	
MSC_0803	907509 <i>phnC</i>	alkylphosphonate ABC transporter, ATP-binding component	
MSC_0804	908269 <i>abc</i>	ABC transporter, substrate-binding component	
MSC_0831	945076 <i>frvB</i>	PTS system, fructose-specific IIBC component	2.7.1.69
MSC_0842	956884 <i>frvA</i>	PTS system, fructose-specific IIA component	
MSC_0846	961517 <i>frvB</i>	PTS system, fructose-specific IIBC component	2.7.1.69
MSC_0860	978817 <i>ptsG</i>	PTS system, glucose-specific IIBC component	2.7.1.69
MSC_0865	986105 MSC_0865	putative membrane arginine transporter	
MSC_0868	987496 <i>mgtA</i>	Mg(2+) transport ATPase, P-type	3.6.3.2
MSC_0873	993997 <i>ptsG</i>	PTS system, glucose-specific, IIBC component	2.7.1.69
MSC_0878	1001288 MSC_0878	putative membrane arginine transporter	
MSC_0907	1029536 <i>mgtA</i>	Mg(2+) transport ATPase, P-type 1	3.6.3.2
MSC_0908	1032327 MSC_0908	amino acid permease	
MSC_0910	1034663 MSC_0910	amino acid permease	
MSC_0940	1066520 <i>ptsK</i>	Hpr serine kinase	2.7.1.-
MSC_0964	1097481 <i>oppA</i>	oligopeptide ABC transporter, substrate-binding component	
MSC_0965	1100438 <i>oppB</i>	oligopeptide ABC transporter, permease component	
MSC_0966	1101513 <i>oppC</i>	oligopeptide ABC transporter, permease component	
MSC_0967	1102531 <i>oppD</i>	oligopeptide ABC transporter, ATP-binding componen	
MSC_0968	1103969 <i>oppF</i>	oligopeptide ABC transporter, ATP-binding component	
MSC_1018	1162053 MSC_1018	proton/glutamate symporter	
MSC_1043	1185810 MSC_1043	proton/glutamate symporter	

DNA metabolism

MSC_0001	1 <i>dnaA</i>	chromosomal replication initiator protein DnaA	
MSC_0002	1602 <i>dnaN</i>	DNA polymerase III, beta chain	2.7.7.7
MSC_0006	5607 <i>gyrB</i>	DNA gyrase subunit B	5.99.1.3
MSC_0007	7527 <i>gyrA</i>	DNA gyrase subunit A	5.99.1.3
MSC_0023	28675 <i>recG</i>	probable DNA recombinase recG	3.6.1.-
MSC_0026	30425 <i>ssb</i>	single-strand binding protein	
MSC_0044	54676 MSC_0044	methyltransferase	2.1.1.-
MSC_0045	55398 <i>holB</i>	DNA polymerase III delta subunit	2.7.7.7
MSC_0047	56990 <i>recR</i>	DNA repair protein RecR	
MSC_0048	57351 <i>dnaX</i>	DNA polymerase III gamma-tau subunits	2.7.7.7
MSC_0091	110260 <i>polA</i> or <i>polI</i>	DNA polymerase I, 5'-3' exonuclease	2.7.7.7
MSC_0100	119877 <i>xseB</i>	exodeoxyribonuclease VII small subunit	3.1.11.6
MSC_0101	120082 <i>xseA</i>	exodeoxyribonuclease VII large subunit	3.1.11.6
MSC_0105	123038 <i>nfo</i>	endodeoxyribonuclease IV	3.1.21.2
MSC_0166	193897 MSC_0166	methyltransferase	2.1.1.-
MSC_0185	219986 MSC_0185	restriction endonuclease	3.1.21.4
MSC_0186	220595 MSC_0186	DNA methylase	
MSC_0200	236587 <i>mod</i>	adenine-specific DNA-methyltransferase	2.1.1.72
MSC_0215	248694 MSC_0215	type II site-specific deoxyribonuclease (Sau96I-like)	3.1.21.4
MSC_0216	249451 <i>dcm</i>	Cytosine-specific DNA-methyltransferase Sau96I	2.1.1.73
MSC_0219	252626 MSC_0219	dna methylase	
MSC_0297	336756 <i>uvrC</i>	excinuclease ABC subunit C	

MSC_0355	402847 <i>polC</i>	DNA polymerase III alpha chain	2.7.7.7
MSC_0410	465358 MSC_0410	DNA-binding protein HU (HB)	
MSC_0416	471548 <i>recU</i>	recombination protein U	
MSC_0421	476358 <i>recA</i>	recombination protein recA	
MSC_0444	498796 MSC_0444	deoxynucleoside kinase	
MSC_0463	524569 <i>recO</i>	DNA repair protein recO	
MSC_0465	526787 <i>dnaG</i>	dna primase	2.7.7.-
MSC_0496	562248 <i>ung</i>	uracil-DNA glycosylase	3.2.2.-
MSC_0510	578876 <i>parE</i>	DNA topoisomerase IV subunit B	5.99.1.-
MSC_0511	580809 <i>parC</i>	topoisomerase IV subunit A	5.99.1.-
MSC_0512	583601 <i>recD</i>	exodeoxyribonuclease V alpha subunit	3.1.11.5
MSC_0542	616160 <i>ruvA</i>	holliday junction DNA helicase RuvA	
MSC_0543	616737 <i>ruvB</i>	holliday junction DNA helicase RuvB	
MSC_0549	622050 <i>dinP</i>	DNA polymerase IV	2.7.7.7
MSC_0649	743547 <i>recD</i>	exodeoxyribonuclease V alpha chain	3.1.11.5
MSC_0680	778502 <i>dnaI</i>	primosomal protein	
MSC_0681	779450 <i>dnaB</i>	chromosome replication initiation/membrane attachment protein	
MSC_0682	780791 <i>fpg</i>	formamidopyrimidine-DNA glycosylase	3.2.2.23
MSC_0683	781626 <i>polA</i>	DNA polymerase I	2.7.7.7
MSC_0684	784370 <i>dnaE</i>	DNA polymerase III alpha chain	2.7.7.7
MSC_0764	859409 <i>ligA</i>	DNA ligase	6.5.1.2
MSC_0769	865713 <i>pcrA</i>	ATP-dependent DNA helicase	3.6.1.-
MSC_0931	1055842 <i>topA</i>	DNA topoisomerase I	5.99.1.2
MSC_0943	1069344 <i>uvrA</i>	excinuclease ABC subunit A	
MSC_0944	1072193 <i>uvrB</i>	excinuclease ABC subunit B	
MSC_0947	1077275 MSC_0947	deoxyribonuclease, TatD related	3.1.21.-
MSC_0956	1084096 <i>dnaC</i>	replicative DNA helicase DnaC	3.6.1.-

Transcription

MSC_0018	24615 MSC_0018	transcriptional regulator (RpiR family)	
MSC_0068	77429 MSC_0068	transcriptional regulator (involved in nitrogen regulation; NifR3 family)	
MSC_0085	103160 <i>trmE</i>	tRNA modification GTPase, TrmE	
MSC_0102	121493 <i>nusB</i>	transcription termination factor nusB	
MSC_0251	287169 <i>gntR</i>	transcription regulator gntR	
MSC_0296	336160 <i>greA</i>	transcription elongation factor	
MSC_0328	375791 <i>rnh</i>	ribonuclease H-related protein	3.1.26.4
MSC_0352	399813 <i>nusA</i>	transcriptional terminator	
MSC_0430	483996 <i>rnhB</i>	ribonuclease H II	3.1.26.4
MSC_0466	528580 <i>rpoD</i>	RNA polymerase sigma-A factor	
MSC_0469	531597 <i>deaD</i>	ATP-dependent RNA helicase	
MSC_0479	545967 <i>rnc</i>	ribonuclease III	3.1.26.3
MSC_0508	576339 <i>spoU</i>	rRNA methylase	2.1.1.-
MSC_0721	828968 <i>rpoA</i>	DNA-directed RNA polymerase alpha chain	2.7.7.6
MSC_0962	1090472 <i>nusG</i>	transcription antitermination protein NusG	
MSC_1009	1150719 <i>rpoC</i>	DNA-directed RNA polymerase beta' chain	2.7.7.6

protein synthesis

MSC_0012	17078 <i>metS</i>	methionine-tRNA ligase	6.1.1.10
MSC_0025	30178 <i>rpsR</i>	30S ribosomal protein S18	
MSC_0027	30877 <i>rpsF</i>	30S ribosomal protein S6	
MSC_0064	73306 <i>ald</i>	alanine dehydrogenase	1.4.1.1
MSC_0066	75743 <i>serS</i>	serine-tRNA ligase	6.1.1.11
MSC_0069	78406 <i>lysS</i>	lysine-tRNA ligase	6.1.1.6
MSC_0072	82309 <i>trxA</i>	thioredoxin	
MSC_0080	98313 <i>asnS</i>	asparagine-tRNA ligase	6.1.1.22
MSC_0086	104566 <i>rpsT</i>	30S ribosomal protein S20	
MSC_0114	134936 <i>ilvA</i>	threonine dehydratase	4.2.1.16
MSC_0131	153850 <i>gltX</i>	glutamate-tRNA ligase	6.1.1.17
MSC_0146	169823 <i>rpme</i>	50S ribosomal protein L31	
MSC_0150	173666 <i>prfA</i>	peptide chain release factor 1	
MSC_0157	181189 <i>rpsL</i>	30S ribosomal protein S12	
MSC_0158	181713 <i>rpsG</i>	30S ribosomal protein S7	
MSC_0159	182205 <i>fusA</i>	translation elongation factor G	
MSC_0160	184406 <i>tufA</i>	translation elongation factor Tu	3.6.1.48
MSC_0178	207226 <i>alaS</i>	alanine-tRNA ligase	6.1.1.7
MSC_0217	250469 <i>sun</i>	Sun family protein	2.1.1.-

MSC_0220	253257 <i>pdf</i>	peptide deformylase	3.5.1.88
MSC_0221	254049 <i>infC</i>	translation initiation factor IF-3	
MSC_0222	254620 <i>rpmI</i>	50S ribosomal protein L35	
MSC_0223	254830 <i>rplT</i>	50S ribosomal protein L20	
MSC_0262	298293 <i>thrS</i>	threonine-tRNA ligase	6.1.1.3
MSC_0278	316961 <i>rpsD</i>	30S ribosomal protein S4	
MSC_0303	344889 <i>valS</i>	valine-tRNA ligase	6.1.1.9
MSC_0327	374354 <i>proS</i>	proline-tRNA ligase	6.1.1.15
MSC_0330	377321 <i>lepA</i>	GTP-binding protein elongation factor LepA	
MSC_0333	381862 <i>aspS</i>	aspartate-tRNA ligase	6.1.1.12
MSC_0334	383595 <i>hisS</i>	histidine-tRNA ligase	6.1.1.21
MSC_0335	385024 <i>rbfA</i>	ribosome-binding factor A	
MSC_0347	396220 <i>rpsO</i>	30S ribosomal protein S15	
MSC_0349	397381 <i>infB</i>	translation initiation factor IF-2	
MSC_0358	409750 <i>trpS</i>	tryptophan-tRNA ligase	6.1.1.2
MSC_0425	481010 <i>rpsP</i>	30S ribosomal protein S16	
MSC_0426	481354 <i>rimM</i>	16S rRNA processing protein RimM	
MSC_0427	481844 <i>trmD</i>	tRNA (guanine-N1)-methyltransferase	2.1.1.31
MSC_0428	482568 <i>rplS</i>	50S ribosomal protein L19	
MSC_0443	498118 <i>pfs</i>	5-methylthioadenosine nucleosidase/S-adenosylhomocystein nucleosidase	3.2.2.16 / 3.2.2.9
MSC_0447	501506 <i>trmU</i>	tRNA (5-methylaminomethyl-2-thiouridylate)-methyltransferase	2.1.1.61
MSC_0450	505504 <i>fmt</i>	methionyl-tRNA formyltransferase	2.1.2.9
MSC_0451	506544 <i>efp</i>	elongation factor P	
MSC_0464	525382 <i>glyS</i>	glycine-tRNA ligase	6.1.1.14
MSC_0483	549831 <i>rpmB</i>	50S ribosomal protein L28	
MSC_0492	558154 <i>metK</i>	methionine adenosyltransferase	2.5.1.6
MSC_0527	601397 <i>lplA</i>	lipoate-protein ligase A	6.-.-.-
MSC_0541	615870 <i>rpsU</i>	30S ribosomal protein S21	
MSC_0560	635657 <i>rpmA</i>	50S ribosomal protei L27	
MSC_0562	636257 <i>rplU</i>	50S ribosomal protein L21	
MSC_0584	656117 <i>lsp</i>	signal peptidase II	3.4.23.36
MSC_0585	656716 <i>ileS</i>	isoleucine-tRNA ligase	6.1.1.5
MSC_0593	665530 <i>rpmF</i>	50S ribosomal protein L32	
MSC_0595	666242 <i>pheT</i>	phenylalanine-tRNA ligase beta subunit	6.1.1.20
MSC_0596	668635 <i>pheS</i>	phenylalanine-tRNA ligase alpha subunit	6.1.1.20
MSC_0599	679945 <i>argS</i>	arginine-tRNA ligase	6.1.1.19
MSC_0600	681611 <i>frr</i>	ribosome recycling factor	
MSC_0607	689457 <i>tsf</i>	elongation factor TS	
MSC_0615	699253 <i>spoU</i>	rRNA Methylase (Spou-family)	2.1.1.-
MSC_0686	789488 <i>tyrS</i>	tyrosine-tRNA ligase	6.1.1.1
MSC_0688	791780 <i>pheT</i>	phenylalanine-tRNA ligase	6.1.1.20
MSC_0700	802930 <i>arcC</i>	carbamate kinase	2.7.2.2
MSC_0703	806516 <i>arcB</i>	ornithine carbamoyltransferase	2.1.3.3
MSC_0709	811724 <i>leuS</i>	leucine-tRNA ligase	6.1.1.4
MSC_0712	817388 <i>rpsI</i>	30S ribosomal protein S9	
MSC_0713	817786 <i>rplM</i>	50S ribosomal protein L13	
MSC_0720	828589 <i>rplQ</i>	50S ribosomal protein L17	
MSC_0722	829925 <i>rpsK</i>	30S ribosomal protein S11	
MSC_0723	830340 <i>rpsM</i>	30S ribosomal protein S13	
MSC_0727	834132 <i>rplO</i>	50S ribosomal protein L15	
MSC_0728	834588 <i>rpsE</i>	30S ribosomal protein S5	
MSC_0729	835371 <i>rplR</i>	50S ribosomal protein L18	
MSC_0730	835747 <i>rplF</i>	50S ribosomal protein L6	
MSC_0731	836303 <i>rpsH</i>	30S ribosomal protein S8	
MSC_0732	836916 <i>rplE</i>	50S ribosomal protein L5	
MSC_0734	837477 <i>rplX</i>	50S ribosomal protein L24	
MSC_0735	837817 <i>rplN</i>	50S ribosomal protein L14	
MSC_0736	838201 <i>rpsQ</i>	30S ribosomal protein S17	
MSC_0737	838458 <i>rpmC</i>	50S ribosomal protein L29	
MSC_0738	838874 <i>rplP</i>	50S ribosomal protein L16	
MSC_0739	839290 <i>rpsC</i>	30S ribosomal protein S3	
MSC_0740	840009 <i>rplV</i>	50S ribosomal protein L22	
MSC_0741	840368 <i>rpsS</i>	30S ribosomal protein S19	
MSC_0742	840656 <i>rplB</i>	50S ribosomal protein L2	
MSC_0743	841559 <i>rplW</i>	50S ribosomal protein L23	
MSC_0744	841843 <i>rplD</i>	50S ribosomal protein L4	
MSC_0745	842482 <i>rplC</i>	50S ribosomal protein L3	
MSC_0746	843229 <i>rpsJ</i>	30S ribosomal protein S10	

MSC_0761	856213 <i>gatB</i>	glutamyl-tRNA (Gln) amidotransferase subunit B	6.3.5.-
MSC_0762	857654 <i>gatA</i>	glutamyl-tRNA (Gln) amidotransferase subunit A	6.3.5.-
MSC_0763	859111 <i>gatC</i>	glutamyl-tRNA (Gln) amidotransferase, subunit C	6.3.5.-
MSC_0766	863443 <i>rluC</i>	RNA pseudouridylate synthase	4.2.1.70
MSC_0795	896181 MSC_0795	translation initiation inhibitor	
MSC_0807	912120 MSC_0807	translation initiation inhibitor	
MSC_0864	985160 <i>arcC</i>	carbamate kinase	2.7.2.2
MSC_0877	1000370 <i>arcC</i>	carbamate kinase	2.7.2.2
MSC_0894	1016676 <i>glyA</i>	glycine hydroxymethyltransferase	2.1.2.1
MSC_0954	1082969 <i>pth</i>	peptidyl-tRNA hydrolase	3.1.1.29
MSC_0955	1083641 <i>rplI</i>	50S ribosomal protein L9	
MSC_0959	1087858 <i>cysS</i>	cysteine-tRNA ligase	6.1.1.16
MSC_0960	1089185 <i>spoU</i>	rRNA Methylase	2.1.1.-
MSC_0994	1133534 <i>rplK</i>	50S ribosomal protein L11	
MSC_0995	1133962 <i>rplA</i>	50S ribosomal protein L1	
MSC_1006	1144562 <i>rplJ</i>	50S ribosomal protein L10	
MSC_1007	1145128 <i>rplL</i>	50S ribosomal protein L7/L12	
MSC_1067	1211028 <i>rnpA</i>	ribonuclease P (protein C5)	3.1.26.5
MSC_1068	1211364 <i>rpmH</i>	50S ribosomal protein L34	

Protein fate

MSC_0083	101683 <i>gcp</i>	O-sialoglycoprotein endopeptidase	3.4.24.57
MSC_0089	106684 <i>secA</i>	preprotein translocase SecA subunit	
MSC_0090	109609 <i>pepQ</i>	proline dipeptidase	
MSC_0163	190007 <i>pepA</i>	leucyl aminopeptidase	3.4.11.1
MSC_0235	268611 <i>pepA</i>	leucyl aminopeptidase	3.4.11.1
MSC_0237	270251 <i>pepF</i>	oligoendopeptidase F	3.4.24.-
MSC_0357	408529 <i>pepQ</i>	Xaa-Pro dipeptidase	3.4.13.9
MSC_0423	479104 <i>ffh</i>	signal recognition particle M54 protein	
MSC_0453	507435 MSC_0453	FKBP-type peptidyl-prolyl isomerase	
MSC_0454	508805 <i>lon</i>	endopeptidase La	3.4.21.53
MSC_0489	555656 <i>ftsY</i>	cell division protein FtsY	
MSC_0504	572231 MSC_0504	peptidase	3.4.-.-
MSC_0554	629333 MSC_0554	Xaa-His dipeptidase	
MSC_0696	797085 <i>pepO</i>	endopeptidase O	3.4.24.-
MSC_0724	831160 <i>map</i>	methionyl aminopeptidase	3.4.11.18
MSC_0726	832684 <i>secY</i>	preprotein translocase secY subunit	
MSC_0774	871088 <i>msrA</i>	peptide methionine sulfoxide reductase	1.8.4.6
MSC_0997	1135301 MSC_0997	transglutaminase	
MSC_1062	1205772 MSC_1062	AAA family ATPase	

Regulatory functions

MSC_0248	282546 MSC_0248	putative glucokinase regulator	
MSC_0488	554915 <i>phoU</i>	phosphate transport system regulator PhoU	
MSC_0490	556839 MSC_0490	gene regulatory 13K protein	
MSC_0556	631577 MSC_0556	ROK family protein	
MSC_0612	695056 <i>hrcA</i>	heat-inducible transcription repressor HrcA	
MSC_0616	699811 MSC_0616	Ham1 family protein	
MSC_0645	739380 MSC_0645	sucrose PTS repressor, DeoR family	
MSC_0691	794464 <i>fur</i>	ferric uptake regulator	
MSC_0751	848786 <i>lacI</i>	transcription regulator, LacI family	
MSC_0833	948050 <i>fruR</i>	transcription repressor of fructose operon	

Cell envelope

MSC_0013	18811 <i>lpp</i>	prolipoprotein	
MSC_0014	20490 <i>p72</i>	immunodominant protein P72 precursor	
MSC_0061	71462 <i>lpp</i>	prolipoprotein	
MSC_0108	127251 <i>epsG</i>	glycosyltransferase	2.4.-.-
MSC_0109	128653 <i>cps</i>	glycosyltransferase	2.4.-.-
MSC_0110	129970 <i>galU</i>	UTP-glucose-1-phosphate uridylyltransferase	2.7.7.9
MSC_0117	139108 <i>lpp</i>	prolipoprotein (putatively variable protein)	
MSC_0177	205816 <i>lppC</i>	prolipoprotein C	
MSC_0240	273632 <i>p72</i>	immunodominant protein P72 precursor	
MSC_0271	310777 <i>lpp</i>	prolipoprotein	
MSC_0285	324680 <i>lpp</i>	prolipoprotein	
MSC_0295	335395 MSC_0295	oxidoreductase	

MSC_0317	362907 <i>lpp</i>	prolipoprotein	
MSC_0364	417756 <i>lpp</i>	prolipoprotein (putatively variable protein)	
MSC_0390	442973 <i>vmm</i>	variable surface protein Vmm (prolipoprotein)	
MSC_0392	445015 <i>lpp</i>	prolipoprotein	
MSC_0397	449911 <i>lpp</i>	prolipoprotein	
MSC_0401	454681 <i>lpp</i>	prolipoprotein	
MSC_0419	474159 <i>lpp</i>	prolipoprotein	
MSC_0431	485130 <i>lpp</i>	prolipoprotein	
MSC_0456	512802 <i>lpp</i>	prolipoprotein	
MSC_0499	564386 <i>lpp</i>	prolipoprotein	
MSC_0519	590870 <i>lppB</i>	prolipoprotein B	
MSC_0540	615070 <i>lpp</i>	prolipoprotein	
MSC_0570	642675 <i>lpp</i>	prolipoprotein	
MSC_0617	700614 <i>lpp</i>	prolipoprotein	
MSC_0625	711732 <i>lpp</i>	prolipoprotein	
MSC_0627	716860 <i>lpp</i>	prolipoprotein	
MSC_0635	730385 <i>lpp</i>	prolipoprotein	
MSC_0653	747182 <i>lpp</i>	prolipoprotein	
MSC_0693	795174 <i>lpp</i>	prolipoprotein	
MSC_0711	816417 <i>lpp</i>	prolipoprotein	
MSC_0771	868653 <i>cps</i>	glycosyltransferase	
MSC_0775	872132 <i>lpp</i>	prolipoprotein	
MSC_0782	883460 <i>lpp</i>	prolipoprotein	
MSC_0798	900805 <i>lpp</i>	prolipoprotein	
MSC_0847	963373 <i>lpp</i>	prolipoprotein (putatively variable protein)	
MSC_0897	1018728 <i>lpp</i>	prolipoprotein	
MSC_0971	1108435 <i>galE</i>	UDP-glucose 4-epimerase	5.1.3.2
MSC_0973	1109940 <i>epsG</i>	glycosyltransferase	
MSC_0974	1111141 <i>cps</i>	glycosyltransferase	2.-.-.-
MSC_0977	1115278 <i>glf</i>	UDP-galactopuranose mutase	5.4.99.9
MSC_0978	1116217 <i>galE</i>	UDP-glucose 4-epimerase	5.1.3.2
MSC_0980	1117724 <i>epsG</i>	glycosyltransferase	
MSC_0982	1120795 <i>cps</i>	glycosyltransferase	2.-.-.-
MSC_0984	1122741 <i>glf</i>	UDP-galactopyranose mutase	5.4.99.9
MSC_0987	1125448 <i>epsG</i>	glycosyltransferase	
MSC_0988	1126649 <i>cps</i>	glycosyltransferase	2.-.-.-
MSC_0990	1129933 <i>galU</i>	UTP-glucose-1-phosphate uridylyltransferase	2.7.7.9
MSC_0993	1131803 <i>epsG</i>	glycosyltransferase	
MSC_1001	1138793 <i>lpp</i>	prolipoprotein	
MSC_1005	1143005 <i>lpp</i>	prolipoprotein (putatively variable protein)	
MSC_1021	1165902 <i>lppQ</i>	prolipoprotein Q	
MSC_1033	1177814 <i>lpp</i>	prolipoprotein (putatively variable protein)	
MSC_1046	1189659 <i>lppQ</i>	prolipoprotein Q	
MSC_1058	1201579 <i>lpp</i>	prolipoprotein (putatively variable protein)	

Cellular processes

MSC_0028	31496 <i>csp</i>	cold shock protein	
MSC_0031	33609 <i>hsp33</i>	heat shock protein (33 kDa chaperonin)	
MSC_0039	49583 <i>ftsH</i>	ATP-dependent zinc metallopeptidase FtsH	3.4.24.-
MSC_0053	64605 MSC_0053	AhpC/TSA family protein	
MSC_0375	426682 <i>gid</i>	glucose-inhibited division protein	
MSC_0420	475771 <i>cinA</i>	competence-damage inducible protein	
MSC_0494	559984 <i>gid</i>	glucose inhibited division protein	
MSC_0588	661644 <i>ftsZ</i>	cell division protein FtsZ	
MSC_0609	691439 <i>dnaJ</i>	heat shock protein DnaJ (chaperone)	
MSC_0610	692621 <i>dnaK</i>	heat shock protein 70 (chaperone)	
MSC_0611	694452 <i>grpE</i>	heat shock protein GrpE	
MSC_0613	696083 <i>clpB</i>	ATP dependant protease ClpB	
MSC_0659	754610 MSC_0659	Fic family protein	
MSC_0838	952588 <i>fic</i>	cell filamentation protein Fic-related protein	
MSC_0856	973459 <i>rnr</i>	ribonuclease R	3.1.-
MSC_1017	1160013 <i>gidA</i>	glucose inhibited division protein A	
MSC_1042	1183770 <i>gidA</i>	glucose inhibited division protein A	

Other categories

MSC_0699	802312 <i>tnp</i> IS1138-like	IS1138-like transposase	
MSC_0780	880385 MSC_0780	MAV1 virus-like C5 methylase	

MSC_0194	229715 <i>MSC_0194</i>	phage-associated protein
MSC_0662	756756 <i>tnpA</i> IS1296ab_b	transposase IS1296AB_B (ORFA)
MSC_0663	757307 <i>tnpB</i> IS1296ab_b	transposase IS1296AB_B (ORFB)
MSC_0898	1021035 <i>tnpA</i> IS1296ac_r	transposase IS1296AC_R (ORFA)
MSC_0899	1021586 <i>tnpB</i> IS1296ac_r	transposase IS1296AC_R (ORFB)
MSC_0905	1027722 <i>tnpA</i> IS1296ds	transposase IS1296DS (ORFA)
MSC_0904	1026853 <i>tnpB</i> IS1296ds	transposase IS1296DS (ORFB)
MSC_0141	165395 <i>tnpA</i> IS1296eh	transposase IS1296EH (ORFA)
MSC_0238	272114 <i>tnpA</i> IS1296fj	transposase IS1296FJ (ORFA)
MSC_0239	272665 <i>tnpB</i> IS1296fj	transposase IS1296FJ (ORFB)
MSC_0851	967678 <i>tnpA</i> IS1296gz	transposase IS1296GZ (ORFA)
MSC_0844	958259 <i>tnpB</i> IS1296hv	transposase IS1296HV (ORFB)
MSC_0056	67790 <i>tnpA</i> IS1296ie	transposase IS1296IE (ORFA)
MSC_0055	66921 <i>tnpB</i> IS1296ie	transposase IS1296IE (ORFB)
MSC_0211	244133 <i>tnpB</i> IS1296ji	transposase IS1296JI (ORFB)
MSC_0630	722741 <i>tnpA</i> IS1296ll	transposase IS1296LL (ORFA)
MSC_0629	721854 <i>tnpB</i> IS1296ll	transposase IS1296LL (ORFB; extended)
MSC_0138	161748 <i>tnpA</i> IS1296mp	transposase IS1296MP (ORFA)
MSC_0137	160879 <i>tnpB</i> IS1296mp	transposase IS1296MP (ORFB)
MSC_0246	280596 <i>tnpB</i> IS1296od	transposase IS1296OD (ORFB)
MSC_0232	265991 <i>tnpA</i> IS1296px	transposase IS1296PX (ORFA)
MSC_0674	771518 <i>tnpA</i> IS1296qt	transposase IS1296QT (ORFA)
MSC_0016	23010 <i>tnpA</i> IS1296sq	transposase IS1296SQ (ORFA)
MSC_0015	22141 <i>tnpB</i> IS1296sq	transposase IS1296SQ (ORFB)
MSC_0173	202677 <i>tnpA</i> IS1296uk	transposase IS1296UK (ORFA; extended into IS1634BP)
MSC_0174	203270 <i>tnpB</i> IS1296uk	transposase IS1296UK (ORFB)
MSC_0551	626291 <i>tnp</i> IS1634aa	transposase IS1634AA
MSC_0538	611283 <i>tnp</i> IS1634ab	transposase IS1634AB
MSC_0245	278430 <i>tnp</i> IS1634ac	transposase IS1634AC
MSC_0520	592950 <i>tnp</i> IS1634ad	transposase IS1634AD
MSC_0363	414742 <i>tnp</i> IS1634ae	transposase IS1634AE
MSC_0249	284174 <i>tnp</i> IS1634ag	transposase IS1634AG
MSC_0859	976699 <i>tnp</i> IS1634al	transposase IS1634AL
MSC_0785	886378 <i>tnp</i> IS1634am	transposase IS1634AM
MSC_0098	117662 <i>tnp</i> IS1634ap	transposase IS1634AP
MSC_0672	768960 <i>tnp</i> IS1634as	transposase IS1634AS
MSC_0797	898542 <i>tnp</i> IS1634au	transposase IS1634AU
MSC_0981	1119052 <i>tnp</i> IS1634av	transposase IS1634AV
MSC_0332	380077 <i>tnp</i> IS1634aw	transposase IS1634AW
MSC_0862	982422 <i>tnp</i> IS1634ax	transposase IS1634AX
MSC_0802	905712 <i>tnp</i> IS1634ay	transposase IS1634AY
MSC_0876	998605 <i>tnp</i> IS1634az	transposase IS1634AZ
MSC_0070	79909 <i>tnp</i> IS1634ba	transposase IS1634BA
MSC_0989	1128034 <i>tnp</i> IS1634bc	transposase IS1634BC
MSC_1003	1139675 <i>tnp</i> IS1634bg	transposase IS1634BG
MSC_0605	686876 <i>tnp</i> IS1634bh	transposase IS1634BH
MSC_0060	69594 <i>tnp</i> IS1634bk	transposase IS1634BK
MSC_0685	787643 <i>tnp</i> IS1634bl	transposase IS1634BL
MSC_0697	799711 <i>tnp</i> IS1634bm	transposase IS1634BM
MSC_0976	1113135 <i>tnp</i> IS1634bn	transposase IS1634BN
MSC_0097	115276 <i>tnp</i> IS1634bo	transposase IS1634BO
MSC_0172	200977 <i>tnp</i> IS1634bp	transposase IS1634BP
MSC_0969	1105433 <i>tnp</i> IS1634bq	transposase IS1634BQ
MSC_0342	391128 <i>tnp</i> IS1634br	transposase IS1634BR
MSC_0038	47780 <i>tnp</i> IS1634bt	transposase IS1634BT
MSC_0074	88758 <i>tnp</i> IS1634bv	transposase IS1634BV
MSC_1011	1155085 <i>tnp</i> IS1634bx	transposase IS1634BX
MSC_0934	1059446 <i>tnp</i> IS1634by	transposase IS1634BY
MSC_0168	196693 <i>tnp</i> IS1634bz	transposase IS1634BZ
MSC_0602	683271 <i>tnp</i> IS1634ca	transposase IS1634CA
MSC_0921	1045726 <i>tnp</i> IS1634cd	transposase IS1634CD
MSC_0871	991858 <i>tnp</i> IS1634ce	transposase IS1634CE
MSC_0814	922863 <i>tnp</i> IS1634chbz	transposase IS1634CHBZ
MSC_0822	934367 <i>tnp</i> IS1634ci	transposase IS1634CI
MSC_1036	1178842 <i>tnp</i> IS1634cm	transposase IS1634CM
MSC_1031	1173518 <i>tnp</i> ISMmy1a	transposase ISMmy1A
MSC_0230	263779 <i>tnp</i> ISMmy1b	transposase ISMmy1B
MSC_0808	912641 <i>tnp</i> ISMmy1c	transposase ISMmy1C
MSC_0781	881302 <i>tnp</i> ISMmy1d	transposase ISMmy1D

MSC_0123	145487 <i>tnp</i> ISMmy1e	transposase ISMmy1E
MSC_0571	643446 <i>tnp</i> ISMmy1f	transposase ISMmy1F
MSC_0796	896702 <i>tnp</i> ISMmy1g	transposase ISMmy1G
MSC_1056	1197275 <i>tnp</i> ISMmy1i	transposase ISMmy1I

Unclassified

MSC_0073	82628 MSC_0073	putative hydrolase of the HAD family
MSC_0081	99680 MSC_0081	putative hydrolase of the HAD family
MSC_0082	100530 MSC_0082	putative hydrolase from alpha/beta family
MSC_0148	172082 <i>dhh</i> (<i>mgpA</i>)	DHH family protein (MgpA-like protein)
MSC_0191	225944 <i>trsE</i>	transfer complex protein TrsE
MSC_0214	246809 MSC_0214	elongation factor Tu family protein
MSC_0290	332204 MSC_0290	GTP-binding protein
MSC_0301	343250 MSC_0301	oxidoreductase
MSC_0408	463019 MSC_0408	conserved GTPase of unknown function
MSC_0439	494692 <i>obg</i>	GTP-binding protein Obg
MSC_0458	520726 MSC_0458	ThiJ/Pfpl family protein
MSC_0462	523664 <i>era</i>	GTP-binding protein Era homolog
MSC_0497	562974 <i>cbf</i>	CMP-binding-factor
MSC_0498	563985 <i>hit</i>	histidine triad protein
MSC_0564	637128 MSC_0564	tetrapyrrole methylase family protein
MSC_0591	664087 MSC_0591	MraW methylase family protein
MSC_0614	698387 MSC_0614	putative hydrolase of the HAD family
MSC_0805	909925 <i>had</i>	hydrolase of the HAD family
MSC_0824	936970 MSC_0824	putative hydrolase of the HAD family
MSC_0857	975583 <i>smpB</i>	SsrA-binding protein
MSC_0914	1037875 MSC_0914	GTP-binding protein

Conserved hypothetical proteins

MSC_0132	155304 MSC_0132	conserved hypothetical protein with HD domain
MSC_0192	228516 <i>fic</i>	conserved hypothetical protein, Fic protein family
MSC_0429	483052 MSC_0429	conserved hypothetical GTP-binding protein
MSC_0548	620924 MSC_0548	conserved hypothetical GTPase of unknown function
MSC_0476	541688 MSC_0476	P115-like protein with SMC_C motif
MSC_0003	2766 MSC_0003	primase-related protein
MSC_0300	341373 MSC_0300	conserved hypothetical protein
MSC_0312	353635 MSC_0312	conserved hypothetical protein
MSC_0449	503370 MSC_0449	conserved hypothetical protein
MSC_0024	29333 MSC_0024	conserved hypothetical protein
MSC_0036	46289 MSC_0036	conserved hypothetical protein
MSC_0037	47223 MSC_0037	conserved hypothetical protein
MSC_0042	52589 MSC_0042	conserved hypothetical protein
MSC_0043	53797 MSC_0043	conserved hypothetical protein
MSC_0052	62352 MSC_0052	conserved hypothetical protein
MSC_0084	102736 MSC_0084	conserved hypothetical protein
MSC_0093	112407 MSC_0093	conserved hypothetical protein
MSC_0094	113162 MSC_0094	conserved hypothetical protein
MSC_0153	177091 MSC_0153	conserved hypothetical protein
MSC_0154	177680 MSC_0154	conserved hypothetical protein
MSC_0169	199353 MSC_0169	conserved hypothetical protein
MSC_0175	204171 MSC_0175	conserved hypothetical protein
MSC_0176	205010 MSC_0176	conserved hypothetical protein
MSC_0190	225417 MSC_0190	conserved hypothetical protein
MSC_0197	233536 MSC_0197	conserved hypothetical protein
MSC_0203	238611 MSC_0203	conserved hypothetical protein
MSC_0208	241598 MSC_0208	conserved hypothetical protein
MSC_0228	261365 MSC_0228	conserved hypothetical protein
MSC_0233	266781 MSC_0233	conserved hypothetical protein
MSC_0241	275330 MSC_0241	conserved hypothetical protein
MSC_0242	276514 MSC_0242	conserved hypothetical protein
MSC_0243	276946 MSC_0243	conserved hypothetical protein
MSC_0255	290638 MSC_0255	conserved hypothetical protein
MSC_0277	316500 MSC_0277	conserved hypothetical protein
MSC_0304	347594 MSC_0304	conserved hypothetical protein
MSC_0306	348889 MSC_0306	conserved hypothetical protein
MSC_0310	352333 MSC_0310	conserved hypothetical protein
MSC_0311	353205 MSC_0311	conserved hypothetical protein

MSC_0329	376410	MSC_0329	conserved hypothetical protein
MSC_0350	399265	MSC_0350	conserved hypothetical protein
MSC_0351	399551	MSC_0351	conserved hypothetical protein
MSC_0353	401576	MSC_0353	conserved hypothetical protein
MSC_0370	421668	MSC_0370	conserved hypothetical protein
MSC_0378	429858	MSC_0378	conserved hypothetical protein
MSC_0379	430543	MSC_0379	conserved hypothetical protein
MSC_0385	438156	MSC_0385	conserved hypothetical protein
MSC_0386	438976	MSC_0386	conserved hypothetical protein
MSC_0402	455051	MSC_0402	conserved hypothetical protein
MSC_0424	480453	MSC_0424	conserved hypothetical protein
MSC_0461	523166	MSC_0461	conserved hypothetical protein
MSC_0467	530148	MSC_0467	conserved hypothetical protein
MSC_0468	530812	MSC_0468	conserved hypothetical protein
MSC_0478	545598	MSC_0478	conserved hypothetical protein
MSC_0491	557168	MSC_0491	conserved hypothetical protein
MSC_0507	575819	MSC_0507	conserved hypothetical protein
MSC_0515	586464	MSC_0515	conserved hypothetical protein
MSC_0528	602412	MSC_0528	conserved hypothetical protein
MSC_0539	613195	MSC_0539	conserved hypothetical protein
MSC_0557	632491	MSC_0557	conserved hypothetical protein
MSC_0561	635940	MSC_0561	conserved hypothetical protein
MSC_0574	646625	MSC_0574	conserved hypothetical protein
MSC_0586	660214	MSC_0586	conserved hypothetical protein
MSC_0587	661216	MSC_0587	conserved hypothetical protein
MSC_0592	665022	MSC_0592	conserved hypothetical protein
MSC_0621	708413	MSC_0621	conserved hypothetical protein
MSC_0622	708856	MSC_0622	conserved hypothetical protein
MSC_0623	709769	MSC_0623	conserved hypothetical protein
MSC_0631	723524	MSC_0631	conserved hypothetical protein
MSC_0636	732994	MSC_0636	conserved hypothetical protein
MSC_0656	749513	MSC_0656	conserved hypothetical protein
MSC_0658	752052	MSC_0658	conserved hypothetical protein
MSC_0664	758354	MSC_0664	conserved hypothetical protein
MSC_0670	765856	MSC_0670	conserved hypothetical protein
MSC_0677	775373	MSC_0677	conserved hypothetical protein
MSC_0689	792463	MSC_0689	conserved hypothetical protein
MSC_0690	793286	MSC_0690	conserved hypothetical protein
MSC_0698	801851	MSC_0698	conserved hypothetical protein
MSC_0701	803978	MSC_0701	conserved hypothetical protein
MSC_0710	814424	MSC_0710	conserved hypothetical protein
MSC_0755	851074	MSC_0755	conserved hypothetical protein
MSC_0760	855455	MSC_0760	conserved hypothetical protein
MSC_0772	869898	MSC_0772	conserved hypothetical protein
MSC_0773	870221	MSC_0773	conserved hypothetical protein
MSC_0778	878257	MSC_0778	conserved hypothetical protein
MSC_0793	894325	MSC_0793	conserved hypothetical protein
MSC_0826	939502	MSC_0826	conserved hypothetical protein
MSC_0839	953536	MSC_0839	conserved hypothetical protein
MSC_0861	981111	MSC_0861	conserved hypothetical protein
MSC_0874	996291	MSC_0874	conserved hypothetical protein
MSC_0913	1037639	MSC_0913	conserved hypothetical protein
MSC_0915	1038935	MSC_0915	conserved hypothetical protein
MSC_0920	1045427	MSC_0920	conserved hypothetical protein
MSC_0935	1061632	MSC_0935	conserved hypothetical protein
MSC_0941	1067540	MSC_0941	conserved hypothetical protein
MSC_0945	1074468	MSC_0945	conserved hypothetical protein
MSC_0949	1078579	MSC_0949	conserved hypothetical protein
MSC_0963	1091553	MSC_0963	conserved hypothetical protein
MSC_1026	1170368	MSC_1026	conserved hypothetical protein
MSC_1051	1194125	MSC_1051	conserved hypothetical protein
MSC_1065	1208949	MSC_1065	conserved hypothetical protein
Conserved hypothetical membrane protein			
MSC_0209	242136	MSC_0209	conserved hypothetical prolipoprotein
MSC_0418	472626	MSC_0418	conserved hypothetical prolipoprotein
MSC_0776	874563	MSC_0776	conserved hypothetical prolipoprotein
MSC_1063	1207018	MSC_1063	conserved hypothetical prolipoprotein

MSC_0322	368290 MSC_0322	conserved hypothetical prolipoprotein (ABC transporter?)
MSC_0032	34684 MSC_0032	conserved hypothetical transmembrane protein
MSC_0112	131545 MSC_0112	conserved hypothetical transmembrane protein
MSC_0116	137972 MSC_0116	conserved hypothetical transmembrane protein
MSC_0143	166866 MSC_0143	conserved hypothetical transmembrane protein
MSC_0144	167999 MSC_0144	conserved hypothetical transmembrane protein
MSC_0279	317821 MSC_0279	conserved hypothetical transmembrane protein
MSC_0282	322984 MSC_0282	conserved hypothetical transmembrane protein
MSC_0287	327121 MSC_0287	conserved hypothetical transmembrane protein
MSC_0299	339646 MSC_0299	conserved hypothetical transmembrane protein
MSC_0316	359752 MSC_0316	conserved hypothetical transmembrane protein
MSC_0320	366578 MSC_0320	conserved hypothetical transmembrane protein
MSC_0359	410789 MSC_0359	conserved hypothetical transmembrane protein
MSC_0361	412633 MSC_0361	conserved hypothetical transmembrane protein
MSC_0371	423279 MSC_0371	conserved hypothetical transmembrane protein
MSC_0395	447259 MSC_0395	conserved hypothetical transmembrane protein
MSC_0405	460691 MSC_0405	conserved hypothetical transmembrane protein
MSC_0417	471952 MSC_0417	conserved hypothetical transmembrane protein
MSC_0422	477545 MSC_0422	conserved hypothetical transmembrane protein
MSC_0470	532998 MSC_0470	conserved hypothetical transmembrane protein
MSC_0472	534626 MSC_0472	conserved hypothetical transmembrane protein
MSC_0523	597219 MSC_0523	conserved hypothetical transmembrane protein
MSC_0550	623406 MSC_0550	conserved hypothetical transmembrane protein
MSC_0620	706099 MSC_0620	conserved hypothetical transmembrane protein
MSC_0624	710238 MSC_0624	conserved hypothetical transmembrane protein
MSC_0626	714335 MSC_0626	conserved hypothetical transmembrane protein
MSC_0628	719435 MSC_0628	conserved hypothetical transmembrane protein
MSC_0633	725937 MSC_0633	conserved hypothetical transmembrane protein
MSC_0637	733751 MSC_0637	conserved hypothetical transmembrane protein
MSC_0652	746732 MSC_0652	conserved hypothetical transmembrane protein
MSC_0676	772695 MSC_0676	conserved hypothetical transmembrane protein
MSC_0916	1039717 MSC_0916	conserved hypothetical transmembrane protein
MSC_0918	1043458 MSC_0918	conserved hypothetical transmembrane protein
MSC_0919	1043857 MSC_0919	conserved hypothetical transmembrane protein
MSC_0923	1048881 MSC_0923	conserved hypothetical transmembrane protein
MSC_0925	1050679 MSC_0925	conserved hypothetical transmembrane protein
MSC_0958	1086923 MSC_0958	conserved hypothetical transmembrane protein
MSC_1066	1209820 MSC_1066	conserved hypothetical transmembrane protein
MSC_0767	864354 MSC_0767	conserved hypothetical transmembrane protein, CAAX amino terminal protease family

Hypothetical protein

MSC_0455	511312 MSC_0455	putative ATPase, AAA family
MSC_1014	1157599 MSC_1014	hypothetical protein
MSC_0195	230814 MSC_0195	hypothetical protein
MSC_0022	28445 MSC_0022	hypothetical protein
MSC_0040	51761 MSC_0040	hypothetical protein
MSC_0041	52237 MSC_0041	hypothetical protein
MSC_0057	68400 MSC_0057	hypothetical protein
MSC_0058	68766 MSC_0058	hypothetical protein
MSC_0059	68941 MSC_0059	hypothetical protein
MSC_0067	77113 MSC_0067	hypothetical protein
MSC_0092	111334 MSC_0092	hypothetical protein
MSC_0095	114283 MSC_0095	hypothetical protein
MSC_0103	121903 MSC_0103	hypothetical protein
MSC_0119	141827 MSC_0119	hypothetical protein
MSC_0124	147459 MSC_0124	hypothetical protein
MSC_0126	148800 MSC_0126	hypothetical protein
MSC_0133	156544 MSC_0133	hypothetical protein
MSC_0147	170156 MSC_0147	hypothetical protein
MSC_0165	193136 MSC_0165	hypothetical protein
MSC_0170	199836 MSC_0170	hypothetical protein
MSC_0171	200509 MSC_0171	hypothetical protein
MSC_0188	224113 MSC_0188	hypothetical protein
MSC_0193	229426 MSC_0193	hypothetical protein
MSC_0196	232002 MSC_0196	hypothetical protein
MSC_0199	236188 MSC_0199	hypothetical protein
MSC_0201	237256 MSC_0201	hypothetical protein

MSC_0202	238138 MSC_0202	hypothetical protein
MSC_0205	239887 MSC_0205	hypothetical protein
MSC_0206	240605 MSC_0206	hypothetical protein
MSC_0207	241180 MSC_0207	hypothetical protein
MSC_0210	243483 MSC_0210	hypothetical protein
MSC_0227	261066 MSC_0227	hypothetical protein
MSC_0234	268198 MSC_0234	hypothetical protein
MSC_0236	269568 MSC_0236	hypothetical protein
MSC_0247	281838 MSC_0247	hypothetical protein
MSC_0284	324436 MSC_0284	hypothetical protein
MSC_0288	329014 MSC_0288	hypothetical protein
MSC_0293	333931 MSC_0293	hypothetical protein
MSC_0294	334702 MSC_0294	hypothetical protein
MSC_0302	343981 MSC_0302	hypothetical protein
MSC_0309	351874 MSC_0309	hypothetical protein
MSC_0318	363191 MSC_0318	hypothetical protein
MSC_0325	372262 MSC_0325	hypothetical protein
MSC_0326	373693 MSC_0326	hypothetical protein
MSC_0344	393922 MSC_0344	hypothetical protein
MSC_0345	394228 MSC_0345	hypothetical protein
MSC_0346	395681 MSC_0346	hypothetical protein
MSC_0360	411771 MSC_0360	hypothetical protein
MSC_0362	414192 MSC_0362	hypothetical protein
MSC_0369	421446 MSC_0369	hypothetical protein
MSC_0373	425569 MSC_0373	hypothetical protein
MSC_0382	434876 MSC_0382	hypothetical protein
MSC_0391	444017 MSC_0391	hypothetical protein
MSC_0393	445761 MSC_0393	hypothetical protein
MSC_0411	465688 MSC_0411	hypothetical protein
MSC_0433	487467 MSC_0433	hypothetical protein
MSC_0436	491773 MSC_0436	hypothetical protein
MSC_0437	493568 MSC_0437	hypothetical protein
MSC_0438	494295 MSC_0438	hypothetical protein
MSC_0446	500642 MSC_0446	hypothetical protein
MSC_0452	507116 MSC_0452	hypothetical protein
MSC_0460	522933 MSC_0460	hypothetical protein
MSC_0477	545101 MSC_0477	hypothetical protein
MSC_0482	549361 MSC_0482	hypothetical protein
MSC_0484	550268 MSC_0484	hypothetical protein
MSC_0521	595273 MSC_0521	hypothetical protein
MSC_0546	619303 MSC_0546	hypothetical protein
MSC_0547	619986 MSC_0547	hypothetical protein
MSC_0563	636764 MSC_0563	hypothetical protein
MSC_0568	641975 MSC_0568	hypothetical protein
MSC_0572	645420 MSC_0572	hypothetical protein
MSC_0576	650144 MSC_0576	hypothetical protein
MSC_0580	653181 MSC_0580	hypothetical protein
MSC_0589	662859 MSC_0589	hypothetical protein
MSC_0590	663845 MSC_0590	hypothetical protein
MSC_0594	665724 MSC_0594	hypothetical protein
MSC_0597	669716 MSC_0597	hypothetical protein
MSC_0604	686292 MSC_0604	hypothetical protein
MSC_0638	735408 MSC_0638	hypothetical protein
MSC_0639	735721 MSC_0639	hypothetical protein
MSC_0640	736155 MSC_0640	hypothetical protein
MSC_0641	736790 MSC_0641	hypothetical protein
MSC_0642	737110 MSC_0642	hypothetical protein
MSC_0643	737340 MSC_0643	hypothetical protein
MSC_0648	742932 MSC_0648	hypothetical protein
MSC_0650	745179 MSC_0650	hypothetical protein
MSC_0651	746212 MSC_0651	hypothetical protein
MSC_0654	748212 MSC_0654	hypothetical protein
MSC_0657	751526 MSC_0657	hypothetical protein
MSC_0661	756522 MSC_0661	hypothetical protein
MSC_0665	759485 MSC_0665	hypothetical protein
MSC_0669	765280 MSC_0669	hypothetical protein
MSC_0675	772373 MSC_0675	hypothetical protein
MSC_0692	794929 MSC_0692	hypothetical protein
MSC_0694	795523 MSC_0694	hypothetical protein

MSC_0695	796332	MSC_0695	hypothetical protein
MSC_0750	848142	MSC_0750	hypothetical protein
MSC_0756	851817	MSC_0756	hypothetical protein
MSC_0779	879804	MSC_0779	hypothetical protein
MSC_0792	893987	MSC_0792	hypothetical protein
MSC_0819	931180	MSC_0819	hypothetical protein
MSC_0820	931631	MSC_0820	hypothetical protein
MSC_0827	940807	MSC_0827	hypothetical protein
MSC_0834	948900	MSC_0834	hypothetical protein
MSC_0867	986725	MSC_0867	hypothetical protein
MSC_0879	1001655	MSC_0879	hypothetical protein
MSC_0880	1001908	MSC_0880	hypothetical protein
MSC_0896	1018423	MSC_0896	hypothetical protein
MSC_0928	1052753	MSC_0928	hypothetical protein
MSC_0929	1052862	MSC_0929	hypothetical protein
MSC_0932	1058020	MSC_0932	hypothetical protein
MSC_0933	1058815	MSC_0933	hypothetical protein
MSC_0953	1082638	MSC_0953	hypothetical protein
MSC_0961	1090141	MSC_0961	hypothetical protein
MSC_0972	1109812	MSC_0972	hypothetical protein
MSC_0991	1131015	MSC_0991	hypothetical protein
MSC_0992	1131212	MSC_0992	hypothetical protein
MSC_0996	1135005	MSC_0996	hypothetical protein
MSC_0998	1136432	MSC_0998	hypothetical protein
MSC_1004	1141850	MSC_1004	hypothetical protein
MSC_1012	1157140	MSC_1012	hypothetical protein
MSC_1013	1157342	MSC_1013	hypothetical protein
MSC_1024	1168837	MSC_1024	hypothetical protein
MSC_1025	1169582	MSC_1025	hypothetical protein
MSC_1027	1171856	MSC_1027	hypothetical protein
MSC_1028	1172630	MSC_1028	hypothetical protein
MSC_1029	1172840	MSC_1029	hypothetical protein
MSC_1030	1173030	MSC_1030	hypothetical protein
MSC_1034	1177878	MSC_1034	hypothetical protein
MSC_1037	1180897	MSC_1037	hypothetical protein
MSC_1038	1181099	MSC_1038	hypothetical protein
MSC_1039	1181356	MSC_1039	hypothetical protein
MSC_1048	1192145	MSC_1048	hypothetical protein
MSC_1049	1192597	MSC_1049	hypothetical protein
MSC_1050	1193339	MSC_1050	hypothetical protein
MSC_1053	1196387	MSC_1053	hypothetical protein
MSC_1054	1196597	MSC_1054	hypothetical protein
MSC_1055	1196787	MSC_1055	hypothetical protein
MSC_1061	1203542	MSC_1061	hypothetical protein
MSC_1023	1168388	MSC_1023	hypothetical protein

Hypothetical membrane protein

MSC_0104	122833	MSC_0104	hypothetical prolipoprotein
MSC_0286	326510	MSC_0286	hypothetical prolipoprotein
MSC_0367	420249	MSC_0367	hypothetical prolipoprotein
MSC_0377	428727	MSC_0377	hypothetical prolipoprotein
MSC_0500	566539	MSC_0500	hypothetical prolipoprotein
MSC_0575	648468	MSC_0575	hypothetical prolipoprotein
MSC_0922	1047692	MSC_0922	hypothetical prolipoprotein
MSC_0927	1051862	MSC_0927	hypothetical prolipoprotein
MSC_0957	1085479	MSC_0957	hypothetical prolipoprotein
MSC_0632	725479	MSC_0632	hypothetical prolipoprotein
MSC_0924	1049668	MSC_0924	hypothetical prolipoprotein
MSC_0522	595676	MSC_0522	hypothetical surface located membrane protein
MSC_0671	767763	MSC_0671	hypothetical transmembrane protein
MSC_0051	61276	MSC_0051	hypothetical transmembrane protein
MSC_0062	72310	MSC_0062	hypothetical transmembrane protein
MSC_0063	72628	MSC_0063	hypothetical transmembrane protein
MSC_0065	74837	MSC_0065	hypothetical transmembrane protein
MSC_0075	91074	MSC_0075	hypothetical transmembrane protein
MSC_0087	105138	MSC_0087	hypothetical transmembrane protein
MSC_0088	105976	MSC_0088	hypothetical transmembrane protein
MSC_0107	124866	MSC_0107	hypothetical transmembrane protein

MSC_0111	131051 MSC_0111	hypothetical transmembrane protein
MSC_0115	136380 MSC_0115	hypothetical transmembrane protein
MSC_0135	158895 MSC_0135	hypothetical transmembrane protein
MSC_0136	159872 MSC_0136	hypothetical transmembrane protein
MSC_0152	175610 MSC_0152	hypothetical transmembrane protein
MSC_0155	178847 MSC_0155	hypothetical transmembrane protein
MSC_0164	192615 MSC_0164	hypothetical transmembrane protein
MSC_0179	209988 MSC_0179	hypothetical transmembrane protein
MSC_0187	222889 MSC_0187	hypothetical transmembrane protein
MSC_0189	224874 MSC_0189	hypothetical transmembrane protein
MSC_0198	235137 MSC_0198	hypothetical transmembrane protein
MSC_0204	239555 MSC_0204	hypothetical transmembrane protein
MSC_0252	288010 MSC_0252	hypothetical transmembrane protein
MSC_0275	315178 MSC_0275	hypothetical transmembrane protein
MSC_0281	320957 MSC_0281	hypothetical transmembrane protein
MSC_0283	323430 MSC_0283	hypothetical transmembrane protein
MSC_0291	332788 MSC_0291	hypothetical transmembrane protein
MSC_0292	333350 MSC_0292	hypothetical transmembrane protein
MSC_0298	338520 MSC_0298	hypothetical transmembrane protein
MSC_0313	354213 MSC_0313	hypothetical transmembrane protein
MSC_0314	354475 MSC_0314	hypothetical transmembrane protein
MSC_0321	367437 MSC_0321	hypothetical transmembrane protein
MSC_0338	386864 MSC_0338	hypothetical transmembrane protein
MSC_0348	396718 MSC_0348	hypothetical transmembrane protein
MSC_0374	425843 MSC_0374	hypothetical transmembrane protein
MSC_0376	428232 MSC_0376	hypothetical transmembrane protein
MSC_0383	435865 MSC_0383	hypothetical transmembrane protein
MSC_0384	437385 MSC_0384	hypothetical transmembrane protein
MSC_0389	441883 MSC_0389	hypothetical transmembrane protein
MSC_0399	452976 MSC_0399	hypothetical transmembrane protein
MSC_0400	453718 MSC_0400	hypothetical transmembrane protein
MSC_0406	461647 MSC_0406	hypothetical transmembrane protein
MSC_0441	496750 MSC_0441	hypothetical transmembrane protein
MSC_0445	499906 MSC_0445	hypothetical transmembrane protein
MSC_0448	502675 MSC_0448	hypothetical transmembrane protein
MSC_0457	515393 MSC_0457	hypothetical transmembrane protein
MSC_0471	533750 MSC_0471	hypothetical transmembrane protein
MSC_0473	536160 MSC_0473	hypothetical transmembrane protein
MSC_0506	575333 MSC_0506	hypothetical transmembrane protein
MSC_0513	585838 MSC_0513	hypothetical transmembrane protein
MSC_0514	586363 MSC_0514	hypothetical transmembrane protein
MSC_0534	607879 MSC_0534	hypothetical transmembrane protein
MSC_0535	608700 MSC_0535	hypothetical transmembrane protein
MSC_0536	609289 MSC_0536	hypothetical transmembrane protein
MSC_0537	610025 MSC_0537	hypothetical transmembrane protein
MSC_0545	619112 MSC_0545	hypothetical transmembrane protein
MSC_0553	628820 MSC_0553	hypothetical transmembrane protein
MSC_0569	642378 MSC_0569	hypothetical transmembrane protein
MSC_0573	645906 MSC_0573	hypothetical transmembrane protein
MSC_0579	651954 MSC_0579	hypothetical transmembrane protein
MSC_0582	653910 MSC_0582	hypothetical transmembrane protein
MSC_0598	670333 MSC_0598	hypothetical transmembrane protein
MSC_0606	688852 MSC_0606	hypothetical transmembrane protein
MSC_0655	748810 MSC_0655	hypothetical transmembrane protein
MSC_0660	755377 MSC_0660	hypothetical transmembrane protein
MSC_0667	762512 MSC_0667	hypothetical transmembrane protein
MSC_0668	763692 MSC_0668	hypothetical transmembrane protein
MSC_0705	808733 MSC_0705	hypothetical transmembrane protein
MSC_0706	809208 MSC_0706	hypothetical transmembrane protein
MSC_0707	809527 MSC_0707	hypothetical transmembrane protein
MSC_0708	810095 MSC_0708	hypothetical transmembrane protein
MSC_0733	837430 MSC_0733	hypothetical transmembrane protein
MSC_0752	849117 MSC_0752	hypothetical transmembrane protein
MSC_0753	849509 MSC_0753	hypothetical transmembrane protein
MSC_0754	849757 MSC_0754	hypothetical transmembrane protein
MSC_0757	852149 MSC_0757	hypothetical transmembrane protein
MSC_0765	861419 MSC_0765	hypothetical transmembrane protein
MSC_0770	867898 MSC_0770	hypothetical transmembrane protein
MSC_0777	876920 MSC_0777	hypothetical transmembrane protein

MSC_0783	885364 MSC_0783	hypothetical transmembrane protein	
MSC_0784	885639 MSC_0784	hypothetical transmembrane protein	
MSC_0791	893979 MSC_0791	hypothetical transmembrane protein	
MSC_0799	902856 MSC_0799	hypothetical transmembrane protein	
MSC_0800	903131 MSC_0800	hypothetical transmembrane protein	
MSC_0858	976029 MSC_0858	hypothetical transmembrane protein	
MSC_0866	986472 MSC_0866	hypothetical transmembrane protein	
MSC_0869	990606 MSC_0869	hypothetical transmembrane protein	
MSC_0870	991407 MSC_0870	hypothetical transmembrane protein	
MSC_0872	993696 MSC_0872	hypothetical transmembrane protein	
MSC_0882	1005779 MSC_0882	hypothetical transmembrane protein	
MSC_0892	1015432 MSC_0892	hypothetical transmembrane protein	
MSC_0900	1022485 MSC_0900	hypothetical transmembrane protein	
MSC_0901	1023468 MSC_0901	hypothetical transmembrane protein	
MSC_0906	1028605 MSC_0906	hypothetical transmembrane protein	
MSC_0909	1033837 MSC_0909	hypothetical transmembrane protein	
MSC_0936	1062573 MSC_0936	hypothetical transmembrane protein	
MSC_0937	1063492 MSC_0937	hypothetical transmembrane protein	
MSC_0946	1075430 MSC_0946	hypothetical transmembrane protein	
MSC_0948	1078126 MSC_0948	hypothetical transmembrane protein	
MSC_0979	1117524 MSC_0979	hypothetical transmembrane protein	
MSC_0986	1125248 MSC_0986	hypothetical transmembrane protein	
MSC_1002	1138829 MSC_1002	hypothetical transmembrane protein	
MSC_1016	1158990 MSC_1016	hypothetical transmembrane protein	
MSC_1022	1167548 MSC_1022	hypothetical transmembrane protein	
MSC_1041	1182747 MSC_1041	hypothetical transmembrane protein	
MSC_1047	1191305 MSC_1047	hypothetical transmembrane protein	
MSC_1052	1195613 MSC_1052	hypothetical transmembrane protein	
MSC_0254	289815 MSC_0254	hypothetical transmembrane protein related to PAP2 family	
MSC_0809	914693 MSC_0809	putative variable surface protein	
MSC_0810	915791 MSC_0810	putative variable surface protein	
MSC_0812	919406 MSC_0812	putative variable surface protein	
MSC_0813	921050 MSC_0813	putative variable surface protein	
MSC_0815	924667 MSC_0815	putative variable surface protein	
MSC_0816	926531 MSC_0816	putative variable surface protein	
MSC_0818	929596 MSC_0818	putative variable surface protein	
Truncated genes			
MSC_0702	805602 MSC_0702 (truncated)	amino acid transporter (truncated)	
MSC_0099	119428 <i>hlyA</i> (truncated)	hemolysin A (truncated)	
MSC_0601	682409 <i>pyrH</i> (truncated)	uridylate kinase (truncated)	2.7.4.-
MSC_0647	742022 <i>fruK</i> (truncated)	1-phosphofructokinase (truncated)	2.7.1.56
MSC_0608	690847 <i>rpsB</i> (truncated)	30S ribosomal protein S2 (truncated)	
MSC_0926	1051157 <i>abc</i> (truncated)	ABC transporter, ATP-binding component (truncated)	
MSC_0801	904929 <i>abc</i> (truncated)	ABC transporter, permease component (truncated)	
MSC_0748	844893 <i>aglA</i> (truncated)	alpha-glucosidase (truncated)	3.2.1.20
MSC_0432	486528 <i>aspS</i> (truncated)	aspartate-tRNA ligase (truncated)	6.1.1.12
MSC_0229	263022 <i>chrA</i> (truncated)	chromate transport protein (truncated)	
MSC_0902	1024666 <i>pyrG</i> (truncated)	CTP synthase (truncated)	6.3.4.2
MSC_0875	997666 <i>glk</i> (truncated)	glucokinase (truncated)	2.7.1.2
MSC_0912	1036943 <i>gidB</i> (truncated)	glucose-inhibited division protein B (truncated)	
MSC_0903	1025396 <i>uhpT</i> (truncated)	hexose phosphate transport protein (truncated)	
MSC_0950	1079671 <i>dcm</i> (truncated)	cytosine-specific DNA-methyltransferase (truncated)	2.1.1.73
MSC_0951	1080407 <i>dam</i> (truncated)	adenine-specific DNA-methyltransferase (truncated)	2.1.1.72
MSC_1008	1146832 <i>rpoB</i> (truncated)	DNA-directed RNA polymerase beta chain (truncated)	2.7.7.6
MSC_0331	379150 MSC_0331 (truncated)	hypothetical protein (truncated by IS1634AW)	
MSC_0343	392843 MSC_0343 (truncated)	hypothetical protein (truncated by IS1634BR)	
MSC_0881	1003571 <i>mgtA</i> (truncated)	Mg(2+) transport ATPase (truncated)	3.6.3.2
MSC_0975	1112073 <i>oppF</i> (truncated)	oligopeptide ABC transporter, permease component (truncated)	
MSC_0122	144916 <i>lppC</i> (truncated)	prolipoprotein lppC (truncated)	
MSC_0308	351235 MSC_0308 (truncated)	protein phosphatase (truncated)	3.1.3.16
MSC_0161	185729 <i>ptsG</i> (truncated)	PTS system, glucose-specific IIBC component (truncated)	2.7.1.69
MSC_0250	285917 <i>pts</i> (truncated)	PTS system, sucrose-specific IIC component (truncated)	
MSC_0817	929170 MSC_0817 (truncated)	putative variable surface protein (truncated)	
MSC_0337	386292 <i>ribC/ribF</i> (truncated)	riboflavin kinase/ FAD synthase (truncated)	2.7.1.26

MSC_0387	439673 <i>rluB</i> (truncated)	ribosomal large subunit pseudouridine synthase B (trunc.)	4.2.1.70
MSC_0970	1107496 <i>glf</i> (truncated)	UDP-galactopyranose mutase (truncated)	5.4.99.9
MSC_0983	1121742 <i>oppF</i> (truncated)	oligopeptide ABC transporter, ATP-binding component (truncated)	
MSC_0985	1124313 <i>galE</i> (truncated)	UDPglucose 4-epimerase (truncated)	5.1.3.2
MSC_0120	142153 <i>tnp</i> (truncated)	putative transposase (maybe remnant ISMmy1)	
MSC_0125	148300 <i>tnp</i> (truncated)	putative transposase (maybe remnant ISMmy1)	
MSC_0836	950783 <i>tnpA</i> (truncated)	remnant IS1296 (ORFA; truncated)	
MSC_0213	245981 <i>tnpB</i> (truncated)	remnant transposase IS1296 (ORFB; truncated)	
MSC_1010	1154527 <i>tnpB</i> 5IS1296r (truncated)	transposase 5'-IS1296R (ORFB; truncated)	
MSC_0786	888389 <i>tnpA</i> IS1296ac (truncated)	transposase IS1296AC (ORFA; truncated)	
MSC_0787	888941 <i>tnpB</i> IS1296ac (truncated)	transposase IS1296AC (ORFB; truncated)	
MSC_1035	1178284 <i>tnpB</i> IS1296ad (truncated)	transposase IS1296AD (ORFB; truncated)	
MSC_0366	419596 <i>tnpA</i> IS1296cn (truncated)	transposase IS1296CN (ORFA; truncated)	
MSC_0365	418405 <i>tnpB</i> IS1296cn (truncated)	transposase IS1296CN (ORFB; truncated)	
MSC_0142	166076 <i>tnpB</i> IS1296eh (truncated)	transposase IS1296EH (ORFB; truncated)	
MSC_0852	968414 <i>tnpB</i> IS1296gz (truncated)	transposase IS1296GZ (ORFB; truncated)	
MSC_0843	957708 <i>tnpA</i> IS1296hv (truncated)	transposase IS1296HV (ORFA; truncated)	
MSC_0212	245217 <i>tnpA</i> IS1296ji (truncated)	transposase IS1296JI (ORFA; truncated)	
MSC_1059	1202048 <i>tnpB</i> IS1296ko (truncated)	transposase IS1296KO (ORFB; truncated)	
MSC_1060	1203332 <i>tnpA</i> IS1296ko (truncated)	transposase IS1296KO protein (ORFA; truncated)	
MSC_0128	150319 <i>tnpB</i> IS1296nu (truncated)	transposase IS1296NU (ORFB; truncated)	
MSC_0244	278134 <i>tnpA</i> IS1296od (truncated)	transposase IS1296OD (ORFA; truncated)	
MSC_0231	265212 <i>tnpB</i> IS1296px (truncated)	transposase IS1296PX (ORFB; truncated)	
MSC_0673	770726 <i>tnpB</i> IS1296qt (truncated)	transposase IS1296QT (ORFB; truncated)	
MSC_0999	1137258 <i>tnpA</i> IS1296t_ab (truncated)	transposase IS1296T_AB (ORFA; truncated)	
MSC_1000	1137819 <i>tnpB</i> IS1296t_ab (truncated)	transposase IS1296T_AB (ORFB; truncated)	
MSC_0566	639429 <i>tnpA</i> IS1296vm (truncated)	transposase IS1296VM (ORFA; truncated)	
MSC_0565	639082 <i>tnpB</i> IS1296vm (truncated)	transposase IS1296VM (ORFB; truncated)	
MSC_0525	599599 <i>tnpA</i> IS1296xg (truncated)	transposase IS1296XG (ORFA; truncated)	
MSC_0524	599098 <i>tnpB</i> IS1296xg (truncated)	transposase IS1296XG (ORFB; truncated)	
MSC_0339	387197 <i>tnpA</i> IS1296yf (truncated)	transposase IS1296YF (ORFA; truncated)	
MSC_0341	389767 <i>tnpB</i> IS1296yf (truncated)	transposase IS1296YF (ORFB; truncated)	
MSC_0413	468612 <i>tnpA</i> IS1296za (truncated)	transposase IS1296ZA (ORFA; truncated)	
MSC_0415	470624 <i>tnpB</i> IS1296za (truncated)	transposase IS1296ZA (ORFB; truncated)	
MSC_0917	1042267 <i>tnp</i> IS1634af (truncated)	transposase IS1634AF (truncated)	
MSC_0381	433419 <i>tnp</i> IS1634ah (truncated)	transposase IS1634AH (truncated)	
MSC_0930	1053400 <i>tnp</i> IS1634ai (truncated)	transposase IS1634AI (truncated)	
MSC_0666	760829 <i>tnp</i> IS1634ak (truncated)	transposase IS1634AK (truncated)	
MSC_0071	81794 <i>tnp</i> is1634ao (truncated)	transposase IS1634AO (truncated)	
MSC_0567	640146 <i>tnp</i> IS1634ar (truncated)	transposase IS1634AR (truncated)	
MSC_0319	363671 <i>tnp</i> IS1634at (truncated)	transposase IS1634AT (truncated)	
MSC_0414	468933 <i>tnp</i> IS1634bc (truncated)	transposase IS1634BC (truncated)	
MSC_0634	728574 <i>tnp</i> IS1634bd (truncated)	transposase IS1634BD (truncated)	
MSC_0121	144132 <i>tnp</i> IS1634be (truncated)	transposase IS1634be (truncated)	
MSC_0403	458123 <i>tnp</i> IS1634bf (truncated)	transposase IS1634BF (truncated)	
MSC_1032	1175210 <i>tnp</i> IS1634bi (truncated)	transposase IS1634BI (truncated)	
MSC_0140	164696 <i>tnp</i> IS1634bs (truncated)	transposase IS1634BS (truncated)	
MSC_0719	827257 <i>tnp</i> IS1634bu (truncated)	transposase IS1634BU (truncated)	
MSC_0380	431857 <i>tnp</i> IS1634cf (truncated)	transposase IS1634CF (truncated)	
MSC_0340	387712 <i>tnp</i> IS1634cg (truncated)	transposase IS1634CG (truncated)	
MSC_0811	917604 <i>tnp</i> IS1634cham (truncated)	transposase IS1634CHAM (truncated)	
MSC_0883	1008203 <i>tnp</i> IS1634ck (truncated)	transposase IS1634CK (truncated)	
MSC_0412	467654 <i>tnp</i> IS1634cl (truncated)	transposase IS1634CL (truncated)	
MSC_1057	1198975 <i>tnp</i> IS1634cn (truncated)	transposase IS1634CN (truncated)	
MSC_0603	685180 <i>tnp</i> IS30-like (truncated)	transposase IS30-like (truncated)	
MSC_0127	149276 <i>tnp</i> ISMmy1h-IS1296nu (trunc.)	transposase ISMmy1H-IS1296NU (ORFA; truncated)	