

Locus_tag	gene	product_name
LSA0001	dnaA	Chromosomal replication initiation protein A
LSA0002	dnaN	DNA-directed DNA polymerase III, beta subunit
LSA0003	Isa3	Hypothetical protein
LSA0004	recF	DNA repair and recombination protein RecF (Recombinational DNA repair ATPase)
LSA0005	gyrB	DNA gyrase, B subunit
LSA0006	gyrA	DNA gyrase, A subunit
LSA0007	rpsF	30S Ribosomal protein S6
LSA0008	ssb	Single-stranded DNA binding protein (Ssb)
LSA0009	rpsR	30S Ribosomal protein S18
LSA0010	Isa10	Putative nucleotide-binding phosphoesterase
LSA0011	rplI	50S Ribosomal protein L9
LSA0012	dnaC	Replicative DNA helicase C
LSA0013	Isa13	Putative nucleobase: cation symporter
LSA0014	gidB	Methyltransferase GidB (Glucose Inhibited Cell Division protein B)
LSA0015	parB1	Chromosome partitioning protein, DNA-binding exonuclease
LSA0016	parA	Chromosome partitioning ATPase
LSA0017	parB2	Chromosome partitioning protein, DNA-binding exonuclease
LSA0018	Isa18	Hypothetical protein
LSA0019	Isa19	Putative GTP-binding protein
LSA0020	Isa20	Hypothetical integral membrane protein
LSA0021	Isa21	Putative lipase/esterase
LSA0022	Isa22	Putative hydrolase, haloacid dehalogenase family
LSA0023	Isa23	Putative ribonucleotide reductase (NrdI-like)
LSA0024	Isa24	Hypothetical protein
LSA0025	Isa25	Hypothetical membrane protein
LSA0026	Isa26	Hypothetical protein
LSA0027	Isa27	Hypothetical protein
LSA0028	Isa28	Hypothetical protein, DegV family
LSA0029	Isa29	Putative ion Mg(2+)/Co(2+) transport protein, hemolysinC-family
LSA0030	Isa30	Putative aldo/keto reductase (oxidoreductase)
LSA0031	Isa31	Hypothetical protein
LSA0032	Isa32	Hypothetical protein
LSA0033	Isa33	Putative transport protein, Major Facilitator Superfamily
LSA0035	Isa35	Putative Iron-sulfur cluster-binding protein
LSA0036	Isa36	Putative serine/tyrosine protein phosphatase
LSA0037	Isa37	Putative ion Mg(2+)/Co(2+) transport protein
LSA0038	usp5	Similar to universal stress protein, UspA family
LSA0039	tag1	3-methyl-adenine DNA glycosylase I
LSA0040	Isa40	Hypothetical protein
LSA0041	panE	2-dehydropantoate 2-reductase
LSA0042	usp1	Similar to universal stress protein, UspA family
LSA0043	Isa43	Hypothetical integral membrane protein
LSA0044	Isa44	Hypothetical protein
LSA0045	cfa	Cyclopropane-fatty-acyl-phospholipid synthase
LSA0046	Isa46	Putative transport protein
LSA0047	Isa47	Hypothetical protein
LSA0048	Isa48	Hypothetical protein
LSA0049	ddl	D-alanine--D-alanine ligase (D-alanylalanine synthetase)
LSA0050	Isa50	Putative molecular chaperone, small heat shock protein, Hsp20 family
LSA0051	Isa51	Putative Na(+) ABC exporter, ATP-binding subunit
LSA0052	Isa52	Putative Na(+) ABC exporter, membrane-spanning/permease subunit
LSA0053	pepO	Endopeptidase O
LSA0054	maa	Maltose O-acetyltransferase (Maltose transacetylase)
LSA0055	Isa55	Putative thiamine/thiamine precursor:cation symporter

LSA0057	thiE	Thiamine-phosphate pyrophosphorylase (Thiamine-phosphate synthase)
LSA0058	thiD	Phosphomethylpyrimidine kinase (HMP-phosphate kinase)
LSA0059	thiM	Hydroxyethylthiazole kinase (4-methyl-5-beta- hydroxyethylthiazole kinase)
LSA0060	nagE	N-acetylglucosamine and glucose-specific phosphotransferase system, enzyme IIAB
LSA0061	Isa61	Hypothetical extracellular protein precursor
LSA0062	Isa62	Hypothetical integral membrane protein
LSA0063	purA	Adenylosuccinate synthetase (IMP-aspartate ligase)
LSA0064	Isa64	Putative nucleobase:cation symporter
LSA0065	Isa65	Hypothetical integral membrane protein
LSA0066	srtA1	Putative surface protein transpeptidase 1 precursor (Sortase 1)
LSA0067	Isa67	Putative ornithine carbamoyltransferase (OTCase)
LSA0068	Isa68	Putative amino acid/polyamine antiporter (N-terminal fragment), authentic frameshift
LSA0069	Isa69	Putative amino acid/polyamine antiporter (C-terminal fragment), authentic frameshift
LSA0070	Isa70	Putative peptidylarginine deiminase (Amidinotransferase)
LSA0071	Isa71	Putative carbamate kinase
LSA0072	Isa72	Putative peptidylarginine deiminase (Amidinotransferase)
LSA0073	Isa73	Putative transcriptional regulator, RpiR family
LSA0074	Isa74	Putative DNA-binding protein, XRE family
LSA0076	Isa76	Putative DNA invertase (Plasmidic Resolvase)
LSA0077	Isa77	Two-component system, response regulator
LSA0078	Isa78	Two-component system, sensor histidine kinase
LSA0079	Isa79	Hypothetical protein
LSA0080	Isa80	Hypothetical protein
LSA0081	Isa81	Putative metal-dependent hydrolase, beta-lactamase superfamily
LSA0082	htrA	Serine protease HtrA precursor, Trypsin family
LSA0084	Isa84	Hypothetical protein
LSA0085	Isa85	Hypothetical lipoprotein precursor
LSA0086	add	Adenosine deaminase
LSA0087	Isa87	Putative adenine/adenosine:cation symporter
LSA0088	adeC1	Adenine deaminase
LSA0089	Isa89	Putative drug transport protein
LSA0090	Isa90	Putative extracellular arylsulfate sulfotransferase (N-terminal fragment), authentic frameshift
LSA0091	Isa91	Putative extracellular arylsulfate sulfotransferase (C-terminal fragment), authentic frameshift
LSA0092	Isa92	Hypothetical protein
LSA0093	Isa93	Hypothetical integral membrane protein
LSA0094	Isa94	Putative transport protein, Major Facilitator Superfamily
LSA0095	Isa95	Putative transport protein
LSA0096	sipA1	Signal peptidase I (Leader peptidase I)
LSA0097	Isa97	Hypothetical extracellular small peptide precursor
LSA0098	Isa98	Hypothetical protein
LSA0099	racD	Aspartate racemase
LSA0100	gpm1	Phosphoglycerate mutase
LSA0101	Isa101	Putative penicillin-binding protein precursor (Beta-lactamase class C)
LSA0102	Isa102	Hypothetical integral membrane protein
LSA0103	Isa103	Putative transcriptional regulator, MarR family
LSA0104	tpx	Thiol peroxidase (Hydroperoxide reductase, Peroxiredoxin)
LSA0105	Isa105	Hypothetical protein
LSA0106	Isa106	Hypothetical cell surface protein precursor
LSA0107	gmk1	Guanylate kinase
LSA0108	Isa108	Hypotetical protein
LSA0109	Isa109	Putative transcriptional regulator, Fur family
LSA0110	Isa110	Hypothetical cell surface protein precursor
LSA0111	Isa111	Hypothetical protein
LSA0112	Isa112	Hypothetical protein
LSA0113	Isa113	Hypothetical protein

LSA0114	Isa114	Hypothetical cell surface protein precursor
LSA0115	Isa115	Hypothetical cell surface protein precursor
LSA0116	Isa116	Hypothetical protein
LSA0118	Isa118	Hypothetical protein
LSA0119	Isa119	Hypothetical protein
LSA0120	Isa120	Putative GTP-binding protein
LSA0122	dhaT	1,3-propanediol dehydrogenase
LSA0123	Isa123	Putative sugar kinase, ROK family
LSA0125	Isa125	Putative amino acid/polyamine transport protein
LSA0126	Isa126	Putative amino-acid/polyamine transport protein
LSA0127	Isa127	Putative antimicrobial peptide ABC exporter, ATP-binding subunit
LSA0128	Isa128	Putative antimicrobial peptide ABC exporter, membrane-spanning/permease subunit
LSA0129	uxaC	Glucuronate isomerase
LSA0130	Isa130	Putative transcriptional regulator, LacI family
LSA0131	gpm2	Phosphoglycerate mutase
LSA0132	Isa132	Putative transcriptional regulator, MarR family
LSA0133	pepR	Prolyl aminopeptidase
LSA0134	Isa134	Putative Na(+)/H(+) antiporter
LSA0135	Isa135	Hypothetical integral membrane protein, similar to CcrB
LSA0136	Isa136	Hypothetical integral membrane protein, similar to CcrB
LSA0137	Isa137	Putative DNA helicase, superfamily I
LSA0138	panK	Pantothenate kinase
LSA0139	guaA	Guanosine monophosphate synthase (Glutamine amidotransferase)
LSA0140	Isa140	Hypothetical integral membrane protein
LSA0141	tnpA-ISLsa	Transposase of ISLsa1 (IS30 family)
LSA0142	Isa142	Hypothetical protein
LSA0143	Isa143	Putative adenine-specific DNA methyltransferase
LSA0144	tnpB-IS152	Transposase (orfB) of IS1520 (IS3 family)
LSA0145	tnpA-IS152	Transposase (orfA) of IS1520 (IS3 family)
LSA0146	Isa146	Putative adenine-specific DNA methyltransferase
LSA0147	Isa147	Putative DNA-repair helicase
LSA0148	Isa148	Putative DNA-repair ATPase
LSA0149	Isa149	Hypothetical protein
LSA0150	Isa150	Putative deacetylase (acetyl esterase)
LSA0151	Isa151	Hypothetical protein
LSA0152	Isa152	Hypothetical integral membrane protein
LSA0153	Isa153	Hypothetical protein
LSA0154	Isa154	Putative DNA-binding protein, XRE family
LSA0155	Isa155	Putative hydrolase, haloacid dehalogenase-like family
LSA0156	Isa156	Hypothetical protein
LSA0157	Isa157	Putative hydroxyl/aromatic amino acid symporter
LSA0158	Isa158	Hypothetical small peptide
LSA0159	Isa159	Hypothetical protein
LSA0160	Isa160	Hypothetical protein
LSA0161	Isa161	Putative transcriptional regulator, ArsR family
LSA0162	Isa162	Putative Bifunctional glycosyl transferase, family 8
LSA0163	Isa163	Hypothetical protein
LSA0164	Isa164	Putative serine/tyrosine protein phosphatase
LSA0165	Isa165	Putative oxidoreductase, short chain dehydrogenase/reductase family
LSA0166	Isa166	Hypothetical Integral membrane protein
LSA0167	Isa167	Hypothetical protein
LSA0168	Isa168	Hypothetical protein
LSA0169	Isa169	Putative general stress protein
LSA0170	Isa170	Putative general stress protein
LSA0171	katA	Catalase

LSA0172	Isa172	Hypothetical cell surface protein precursor
LSA0173	Isa173	Hypothetical cell surface protein precursor
LSA0174	Isa174	Hypothetical protein
LSA0175	Isa175	Hypothetical cell surface protein precursor
LSA0176	Isa176	Hypothetical protein
LSA0177	Isa177	Hypothetical cell surface protein precursor
LSA0178	Isa178	Putative transcriptional regulator, MarR family
LSA0179	pepD1	Dipeptidase D-type (U34 family)
LSA0180	mtsC	Manganese ABC transporter, ATP-binding subunit
LSA0181	mtsB	Manganese ABC transporter, membrane-spanning subunit
LSA0182	mtsA	Manganese ABC transporter, substrate-binding lipoprotein precursor
LSA0183	Isa183	Putative hydrolase, isochorismatase/nicotamidase family
LSA0184	Isa184	Hypothetical protein
LSA0185	galP	Galactose:cation symporter
LSA0186	Isa186	Putative transcriptional regulator, LytR family
LSA0187	Isa187	Putative drug-resistance ABC transporter, two ATP-binding subunits
LSA0189	Isa189	Putative amino acid/polyamine transport protein
LSA0190	Isa190	Hypothetical integral membrane protein
LSA0191	Isa191	Hypothetical integral membrane protein
LSA0192	Isa192	Hypothetical small protein
LSA0193	Isa193	Hypothetical protein
LSA0194	Isa194	Hypothetical cell surface protein precursor
LSA0195	Isa195	Hypothetical lipoprotein precursor
LSA0196	pepD2	Dipeptidase D-type (U34 family)
LSA0197	Isa197	Putative transcriptional regulator, MarR family
LSA0198	ack1	Acetate kinase (Acetokinase)
LSA0199	Isa199	Hypothetical protein
LSA0200	rbsU	Ribose transport protein
LSA0201	rbsD	Ribose mutarotase
LSA0202	rbsK	Ribokinase
LSA0203	rbsR	Ribose operon transcriptional regulator, LacI family
LSA0204	Isa204	Putative transcriptional regulator, PadR family
LSA0205	Isa205	Putative drug:H(+) antiporter
LSA0206	gpm3	Phosphoglycerate mutase
LSA0207	clpL	ATPase/chaperone ClpL, putative specificity factor for ClpP protease
LSA0208	Isa208	Hypothetical integral membrane protein
LSA0209	Isa209	Hypothetical integral membrane protein
LSA0210	Isa210	Choloylglycine hydrolase (Bile salt hydrolase)
LSA0211	Isa211	Hypothetical cell surface protein precursor (N-terminal fragment), authentic frameshift
LSA0212	Isa212	Hypothetical cell surface protein precursor (C-terminal fragment), authentic frameshift
LSA0213	Isa213	Hypothetical cell surface protein precursor
LSA0214	Isa214	Hypothetical protein
LSA0215	Isa215	Hypothetical cell surface protein precursor
LSA0216	Isa216	Putative transcriptional regulator, MarR family, truncated
LSA0217	Isa217	Putative transcriptional regulator with a Rhodanese-like domain, ArsR family
LSA0218	trxA1	Thioredoxin
LSA0219_a	Isa219_a	Putative DNA-binding protein, XRE family
LSA0219_b	Isa219_b	Putative cyanate transport protein
LSA0220_c	dapE	Succinyl-diaminopimelate desuccinylase
LSA0221	Isa221	Putative transcriptional regulator, LysR family (C-terminal fragment), degenerate
LSA0223	Isa223	Putative transcriptional regulator, LysR family (N-terminal fragment), degenerate
LSA0224	Isa224	Putative acetyltransferase, isoleucine patch superfamily
LSA0225	Isa225	Putative oxidoreductase, short-chain dehydrogenase/reductase family
LSA0226	pepN	Aminopeptidase N (Lysyl-aminopeptidase-Alanyl aminopeptidase)
LSA0227	Isa227	Putative drug:H(+) antiporter

LSA0228	Isa228	Hypothetical protein
LSA0229	Isa229	Putative transcriptional regulator, MerR family (N-terminal fragment), authentic frameshift
LSA0230	Isa230	Putative transcriptional regulator, MerR family (C-terminal fragment), authentic frameshift
LSA0231	Isa231	Putative transcriptional regulator, MarR family
LSA0232	ImrA	Multidrug ABC exporter, ATP-binding and membrane-spanning/permease subunits
LSA0233	Isa233	Putative Na(+):H(+) antiporter (N-terminal fragment), authentic frameshift
LSA0234	Isa234	Putative Na(+):H(+) antiporter (C-terminal fragment), authentic frameshift
LSA0235	Isa235	Hypothetical extracellular protein precursor
LSA0236	Isa236	Hypothetical extracellular peptide precursor
LSA0237	Isa237	Putative DNA-binding protein, XRE family
LSA0238	Isa238	Putative aldo/keto reductase (oxidoreductase)
LSA0239	Isa239	Putative transcriptional regulator, MerR family
LSA0240	Isa240	Putative N-acetyltransferase, GNAT family
LSA0241	Isa241	Putative transcriptional regulator, MarR family
LSA0242	Isa242	Hypothetical extracellular protein precursor
LSA0243	Isa243	Putative glycerophosphodiester phosphodiesterase
LSA0244	Isa244	Hypothetical integral membrane protein
LSA0245	Isa245	Hypothetical lipoprotein precursor
LSA0246	mntH1	Mn(2+)/Fe(2+) transport protein
LSA0247	usp2	Similar to universal stress protein, UspA family
LSA0248	Isa248	Hypothetical protein
LSA0249	Isa249	Hypothetical protein
LSA0250	Isa250	Hypothetical protein
LSA0251	efp1	Elongation factor P (EF-P)
LSA0252	iunH1	Inosine-uridine preferring nucleoside hydrolase
LSA0253	Isa253	Putative transcriptional regulator with a sugar kinase domain, GntR family
LSA0254	Isa254	Putative carbohydrate kinase
LSA0255	Isa255	Putative phosphoribosyl isomerase
LSA0256_a	Isa256_a	Hypothetical protein
LSA0257	Isa257	Hypothetical protein
LSA0258	Isa258	Putative iron-containing alcohol dehydrogenase (oxidoreductase)
LSA0259	Isa259	Pyrimidine-specific nucleoside symporter
LSA0260	Isa260	Putative aldo/keto reductase (oxidoreductase)
LSA0261	tnpB-ISLsa:Transposase (orfB) of ISLsa2 (IS150 family)	
LSA0262	tnpA-ISLsa:Transposase (orfA) of ISLsa2 (IS150 family)	
LSA0263	Isa263	Hypothetical integral membrane protein
LSA0264	Isa264	Putative glycine/betaine/carnitine/choline transport protein
LSA0265	Isa265	Putative transcriptional regulator, PadR family
LSA0266	rpsN	30S ribosomal protein S14
LSA0268	Isa268	Putative drug:H(+) antiporter
LSA0269	Isa269	Putative transcriptional regulator, TetR family
LSA0270	Isa270	Putative multidrug ABC exporter, membrane-spanning/permease subunit
LSA0271	Isa271	Putative multidrug ABC exporter, ATP-binding subunit
LSA0272	Isa272	Putative multidrug ABC exporter, ATP-binding and membrane-spanning/permease subunits
LSA0273	Isa273	Putative DNA helicase (C-terminal fragment), authentic frameshit
LSA0274	Isa274	Putative DNA helicase (N-terminal fragment), authentic frameshift
LSA0275	Isa275	Putative serine/tyrosine protein phosphatase
LSA0276	guaB	Inosine-5 -monophosphate dehydrogenase
LSA0277	Isa277	Two-component system, response regulator
LSA0278	Isa278	Two-component system, sensor histidine kinase
LSA0279	dacA	D-alanyl-D-alanine carboxypeptidase precursor
LSA0280	murE	UDP-N-acetylmuramoylalanyl-D-glutamate--2,6-diaminopimelate ligase
LSA0281	Isa281	Hypothetical lipoprotein precursor
LSA0282	Isa282	Putative zinc/iron ABC transporter, substrate-binding lipoprotein precursor
LSA0283	Isa283	Putative zinc/iron ABC transporter, ATP-binding subunit

LSA0284	Isa284	Putative zinc/iron ABC transporter, membrane-spanning subunit
LSA0285	pepF1	Oligoendopeptidase F1
LSA0286	Isa286	Putative transcriptional regulator, lytR family
LSA0287	Isa287	Pyrimidine-specific nucleoside symporter
LSA0288	Isa288	Putative transcription regulator, GntR family
LSA0289	xpk	Xylulose-5-phosphate phosphoketolase
LSA0290	gltX	Glutamyl-tRNA synthetase
LSA0291	kdgK	2-dehydro-3-deoxygluconokinase
LSA0292	budC	Acetoin reductase (acetoin dehydrogenase) (Meso-2,3-butanediol dehydrogenase)
LSA0293	Isa293	Putative DNA-binding protein, XRE family
LSA0294	Isa294	Hypothetical lipoprotein precursor
LSA0295	Isa295	Hypothetical protein
LSA0296	gntR	Gluconate operon transcriptional regulator, RpiR family
LSA0297	gntZ	6-phosphogluconate dehydrogenase
LSA0298	gntK	Gluconokinase
LSA0299	gntP	Gluconate:H(+) symporter
LSA0300	Isa300	Hypothetical protein
LSA0301	Isa301	Hypothetical protein
LSA0302	Isa302	Putative anion:Na(+) symporter
LSA0303	Isa303	Hypothetical protein
LSA0304	Isa304	Hypothetical protein
LSA0305	Isa305	Putative drug resistance ABC transporter, two ATP-binding subunits
LSA0306	aspD	L-aspartate-beta-decarboxylase
LSA0307	trxA2	Thioredoxin
LSA0308	Isa308	Putative drug:H(+) antiporter
LSA0309	Isa309	Hypothetical membrane protein
LSA0310	Isa310	Hypothetical integral membrane protein
LSA0311	Isa311	Putative glutamate/aspartate:cation symporter
LSA0312	Isa312	Putative NADH oxidase, water-forming (NOX)
LSA0313	Isa313	Hypothetical cell surface protein precursor
LSA0314	Isa314	Hypothetical protein
LSA0315	Isa315	Hypothetical protein
LSA0316	sdhB	L-serine dehydratase, beta subunit (L-serine deaminase)
LSA0317	sdhA	L-serine dehydratase, alpha subunit (L-serine deaminase)
LSA0318	Isa318	Putative oligopeptide transporter
LSA0319	Isa319	Hypothetical protein
LSA0320	pepD3	Dipeptidase D-type (U34 family)
LSA0321	Isa321	Hypothetical integral membrane protein
LSA0323	Isa323	Hypothetical protein
LSA0324	Isa324	Putative hydrolase, haloacid dehalogenase family (N-terminal fragment), authentic frameshift
LSA0325	Isa325	Putative hydrolase, haloacid dehalogenase family (C-terminal fragment), authentic frameshift
LSA0326	Isa326	Putative DNA helicase
LSA0327	trpS	Tryptophanyl-tRNA synthetase
LSA0328	Isa328	Putative drug:Na(+) antiporter (drug efflux pump)
LSA0329	Isa329	Putative DNA-entry nuclease precursor (N-terminal fragment), authentic frameshift
LSA0330	Isa330	Putative DNA-entry nuclease precursor (C-terminal fragment), authentic frameshift
LSA0331	Isa331	Hypothetical protein
LSA0332	Isa332	Hypothetical integral membrane protein
LSA0333	Isa333	Putative nucleotide methyltransferase
LSA0334	Isa334	Hypothetical extracellular protein precursor
LSA0335	Isa335	Putative cytidine deaminase
LSA0336	dnaX	DNA-directed DNA polymerase III, gamma/tau subunit
LSA0337	Isa337	Hypothetical protein
LSA0338	recR	Recombination DNA repair protein RecR
LSA0339	Isa339	Hypothetical protein

LSA0340	tmk	Thymidylate kinase (dTMP kinase)
LSA0341	Isa341	Hypothetical protein
LSA0342	holB	DNA-directed DNA polymerase III, delta prime subunit
LSA0343	Isa343	Hypothetical protein
LSA0344	Isa344	Putative methyltransferase
LSA0345	Isa345	Putative Acyl-ACP thioesterase
LSA0346	Isa346	Hypothetical protein
LSA0347	asnB1	L-asparaginase
LSA0348	Isa348	Hypothetical integral membrane protein
LSA0349	Isa349	Putative O-sialoglycoprotein metallo-endopeptidase (M22 family)
LSA0350	Isa350	Putative N-acetyltransferase, GNAT family
LSA0351	Isa351	Putative O-sialoglycoprotein metallo-endopeptidase (M22 family)
LSA0352	Isa352	Hypothetical integral membrane protein
LSA0353	Isa353	Putative cellobiose-specific phosphotransferase system, enzyme IIB
LSA0354	Isa354	Hypothetical integral membrane protein
LSA0355	Isa355	Putative drug resistance ABC transporter, two ATP-binding subunits
LSA0356	Isa356	Hypothetical protein
LSA0357	Isa357	Hypothetical protein, CAAX protease family
LSA0358	groS	Co-chaperonin GroES (10 kD chaperonin) (Protein Cpn10)
LSA0359	groL	Chaperonin GroEL (60 kDa chaperonin) (Protein Cpn60)
LSA0360	Isa360	Putative amino acid/polyamine transport protein
LSA0361	Isa361	Hypothetical protein
LSA0362	mutS	DNA mismatch repair protein MutS
LSA0363	mutL	DNA mismatch repair protein MutL
LSA0364	maf	Inhibitor of septum formation (Maf protein)
LSA0365	Isa365	Hypothetical protein
LSA0366	ruvA	Holliday junction DNA helicase RuvA
LSA0367	ruvB	Holliday junction DNA helicase RuvB
LSA0368	queA	S-adenosylmethionine:tRNA ribosyltransferase-isomerase
LSA0369	Isa369	Putative N-acetyltransferase, GNAT family
LSA0370	arcA	Arginine deiminase (Arginine dihydrolase)
LSA0371	arcB	Ornithine transcarbamoylase (Catabolic OTCase)
LSA0372	arcC	Carbamate kinase
LSA0373	arcT	putative aminotransferase
LSA0374	arcD	Arginine/ornithine antiporter
LSA0375	arcR	Arginine deiminase pathway transcriptional regulator, Crp family
LSA0376	Isa376	Putative transport protein
LSA0377	tgt	Queuine tRNA-ribosyltransferase
LSA0378	Isa378	Hypothetical protein
LSA0379	adhE	Bifunctional enzyme: alcohol dehydrogenase, acetaldehyde dehydrogenase
LSA0380	Isa380	Putative metal(Iron)-dependent transcriptional regulator, DtxR family
LSA0381	zwf	Glucose-6-phosphate 1-dehydrogenase
LSA0382	dinP	DNA-damage-inducible protein P
LSA0383	Isa383	Hypothetical protein
LSA0384	Isa384	Putative phosphoesterase, DHH family
LSA0385	Isa385	Putative ATP-dependent DNA/RNA helicase
LSA0386	Isa386	Hypothetical protein
LSA0387	alaS	Alanyl-tRNA synthetase
LSA0388	Isa388	Hypothetical protein
LSA0389	Isa389	Hypothetical protein
LSA0390	Isa390	Hypothetical protein
LSA0391	rnhC	Ribonuclease HIII (RNase HIII)
LSA0392	Isa392	Hypothetical integral membrane protein
LSA0393	Isa393	DNA mismatch repair protein, MutS family
LSA0394	trxA3	Thioredoxin

LSA0395	dltA	D-alanine-poly(phosphoribitol) ligase, subunit 1(D-alanine-D-alanyl carrier protein)
LSA0396	dltB	D-alanyl transfer protein (membrane protein)
LSA0397	dltC	D-alanine-poly(phosphoribitol) ligase, subunit 2 (D-alanine-D-alanyl carrier protein)
LSA0398	dltD	Lipoteichoic acid D-alanyl esterase precursor
LSA0399	Isa399	Iron(III)-compound ABC transporter, substrate-binding lipoprotein precursor
LSA0400	Isa400	Iron(III)-compound ABC transporter, ATP-binding subunit
LSA0401	Isa401	Iron(III)-compound ABC transporter, membrane-spanning subunit
LSA0402	Isa402	Iron(III)-compound ABC transporter, membrane-spanning subunit
LSA0403	Isa403	Putative thioredoxin reductase
LSA0404	Isa404	Hypothetical protein
LSA0405	murl	Glutamate racemase
LSA0406	Isa406	Putative nucleoside triphosphatase, Ham1 family
LSA0407	Isa407	Putative phosphoesterase
LSA0408	Isa408	Hypothetical protein
LSA0409	Isa409	Hypothetical integral membrane protein
LSA0410	Isa410	Putative mechanosensitive ion channel
LSA0411	Isa411	Hypothetical extracellular protein precursor
LSA0412	Isa412	Hypothetical extracellular protein precursor
LSA0413	Isa413	Hypothetical protein
LSA0414	pepQ	Xaa-Pro dipeptidase (Proline dipeptidase)
LSA0415	CcpA	CcpA transcriptional regulator (Catabolic control protein A)
LSA0416	pbp1B	Bifunctional glycosyltransferase/transpeptidase penicillin-binding protein 1B
LSA0417	nagB	Glucosamine-6-phosphate deaminase
LSA0418	Isa418	Hypothetical protein
LSA0419	Isa419	Putative drug:H(+) antiporter (C-terminal fragment), authentic frameshift
LSA0420	Isa420	Putative drug:H(+) antiporter (N-terminal fragment), authentic frameshift
LSA0421	Isa421	Putative transcriptional regulator, MerR family
LSA0422	Isa422	Hypothetical protein
LSA0423	Isa423	Hypothetical protein
LSA0424	pepV	Xaa-His dipeptidase V (Carnosinase)
LSA0425	Isa425	Putative heavy metal-transporting P-type ATPase
LSA0426	Isa426	Putative transcriptional regulator, ArsR family
LSA0427	Isa427	Putative cell surface Glycerophosphoryl diester phosphodiesterase precursor
LSA0428	Isa428	Hypothetical protein
LSA0429	Isa429	Putative phosphoesterase
LSA0430	Isa430	Putative nucleotide phosphoesterase
LSA0431	Isa431	Hypothetical protein
LSA0432	Isa432	Putative sugar phosphatase, HAD superfamily
LSA0433	Isa433	Hypothetical integral membrane protein
LSA0434	Isa434	Hypothetical membrane protein
LSA0435	trxB1	Thioredoxin reductase
LSA0436	Isa436	Putative peptidylprolyl isomerase (Peptidylprolyl cis-trans isomerase) (PPIase)
LSA0437	Isa437	Hypothetical protein with an RNA-binding domain
LSA0438	Isa438	Hypothetical protein
LSA0439	Isa439	Hypothetical extracellular lipase/esterase precursor
LSA0440	mleR	Transcriptional regulator of the malolactic fermentation, LysR family
LSA0441	mleS	Malolactic enzyme
LSA0442	mleP1	L-Malate uniport protein
LSA0443	Isa443	Putative single-stranded mRNA endoribonuclease
LSA0444	Isa444	Putative malate dehydrogenase
LSA0445	mleP2	L-Malate uniport protein
LSA0446	pyrDB2	Putative dihydroorotate oxidase, catalytic subunit
LSA0447	Isa447	Putative hydrolase, haloacid dehalogenase family
LSA0448	gltP	Putative glutamate/aspartate:cation symporter
LSA0449	manL	Mannose-specific phosphotransferase system, enzyme IIAB

LSA0450	manM	Mannose-specific phosphotransferase system, enzyme IIC
LSA0451	manN	Mannose-specific phosphotransferase system, enzyme IID
LSA0452	Isa452	Hypothetical protein
LSA0453	Isa453	Hypothetical protein
LSA0454	Isa454	Putative oxidoreductase, short-chain dehydrogenase/reductase family
LSA0455	Isa455	Hypothetical protein
LSA0456	Isa456	Hypothetical protein
LSA0457	Isa457	Putative transport protein
LSA0458	Isa458	Hypothetical integral membrane protein
LSA0459	Isa459	Hypothetical protein
LSA0460	Isa460	Hypothetical small peptide
LSA0461	Isa461	Putative glycosyl transferase, group 1
LSA0462	Isa462	hypothetical integral membrane protein
LSA0463	Isa463	Putative 2-hydroxyacid dehydrogenase
LSA0464	Isa464	Hypothetical protein
LSA0465	Isa465	Putative phosphoglycerol transferase
LSA0466	Isa466	Putative transcriptional regulator, Fur family
LSA0467	Isa467	Hypothetical integral membrane protein
LSA0468	metK	Methionine adenosyltransferase (S-adenosylmethionine synthetase)
LSA0469	Isa469	Putative drug:H(+) antiporter
LSA0470	Isa470	Hypothetical protein
LSA0471	Isa471	Putative glucitol/sorbitol phosphotransferase system, enzyme IIA
LSA0472	Isa472	Putative transport protein
LSA0473	tnpA-ISLsa:Transposase (orfA) of ISLsa2 (IS150 family)	
LSA0474	tnpB-ISLsa:Transposase (orfB) of ISLsa2 (IS150 family)	
LSA0475	Isa475	Putative N-acetyltransferase, GNAT family
LSA0476	guaC	Guanosine 5'-monophosphate reductase (GMP reductase)
LSA0477	Isa477	Putative ion Mg(2+)/Co(2+) transport protein
LSA0478	Isa478	Putative rRNA large subunit methyltransferase A
LSA0479	Isa479	Putative rRNA methyltransferase
LSA0480	Isa480	Hypothetical protein
LSA0481	ftsK	Cell division DNA translocase FtsK
LSA0482	Isa482	Hypothetical protein
LSA0483	Isa483	Hypothetical protein
LSA0484	Isa484	Putative oxidoreductase, short-chain dehydrogenase/reductase family
LSA0485	Isa485	Hypothetical protein
LSA0486	pgsA	CDP-diacylglycerol--glycerol-3-phosphate 3-phosphatidyltransferase
LSA0487	recA	DNA recombinase A
LSA0489	Isa489	Putative metal-dependent phosphohydrolase precursor
LSA0490	tagO	Undecaprenyl-phosphate N-acetyl-glucosaminyl transferase
LSA0491	Isa491	Hypothetical protein
LSA0492	Isa492	Putative bacterial type II secretion/competence system, ATP-dependent DNA helicase
LSA0493	Isa493	Putative bacterial type II secretion/competence system, protein ComFC-like
LSA0494	Isa494	30S ribosomal interface protein S30EA
LSA0495	secA	Preprotein translocase SecA subunit
LSA0496	prfB	Peptide chain release factor 2
LSA0497	ftsE	Cell-division associated ABC transporter, ATP binding FtsE subunit
LSA0498	ftsX	Cell-division associated ABC transporter, membrane FtsX subunit
LSA0499	Isa499	Hypothetical integral membrane protein
LSA0500	Isa500	Two-component system, response regulator (possibly involved in phosphate regulation)
LSA0501	Isa501	Two-component system, sensor histidine kinase (possibly involved in phosphate regulation)
LSA0502	pstS	Phosphate ABC transporter, substrate-binding lipoprotein precursor
LSA0503	pstC	Phosphate ABC transporter, membrane-spanning subunit
LSA0504	ptsA	Phosphate ABC transporter, membrane-spanning subunit
LSA0505	pstB1	Phosphate ABC transporter, ATP-binding subunit 1

LSA0506	pstB2	Phosphate ABC transporter, ATP-binding subunit 2
LSA0507	Isa507	Putative phosphate transport system regulatory protein
LSA0508	Isa508	Putative nucleoside deoxyribosyltransferase
LSA0509	kbl	2-amino-3-ketobutyrate coenzyme A ligase (Glycine acetyltransferase)
LSA0510	Isa510	L-threonine dehydrogenase (N-terminal fragment), authentic frameshift
LSA0511	Isa511	L-threonine dehydrogenase (C-terminal fragment), authentic frameshift
LSA0512	Isa512	Hypothetical protein
LSA0513	Isa513	Putative stress-responsive transcriptional regulator
LSA0514	Isa514	Hypothetical small extracellular protein precursor
LSA0515	Isa515	Hypothetical integral membrane protein
LSA0516	hprK	Hpr kinase
LSA0517	lgt	Prolipoprotein diacylglycerol transferase
LSA0518	gps	[NAD(P)+]-dependent glycerol-3-phosphate dehydrogenase
LSA0519	Isa519	Hypothetical protein
LSA0520	trxB2	Thioredoxin reductase
LSA0521	pgm	Phosphoglucomutase
LSA0522	Isa522	Hypothetical protein
LSA0523	uvrB	Excinuclease ABC, subunit B
LSA0524	uvrA	Excinuclease ABC, subunit A
LSA0525	Isa525	Hypothetical integral membrane protein
LSA0526	Isa526	Hypothetical protein
LSA0527	Isa527	Putative extracellular lipase/esterase precursor
LSA0528	Isa528	Hypothetical protein
LSA0529	Isa529	Putative transcriptional regulator, MarR family
LSA0530	Isa530	Hypothetical protein
LSA0531	clpP	ATP-dependent Clp protease, proteolytic subunit ClpP
LSA0532	Isa532	Putative N-acetylmuramoyl-L-alanine amidase precursor (cell wall hydrolase)
LSA0533	iunH2	Inosine-uridine preferring nucleoside hydrolase
LSA0534	Isa534	Hypothetical cell surface protein precursor (with LPQTG sorting signal)
LSA0536	Isa536	Hypothetical protein
LSA0537	Isa537	Putative transcriptional regulator, MarR family
LSA0538	Isa538	Putative oxidoreductase, short-chain dehydrogenase/reductase family
LSA0539	Isa539	Putative NADPH-quinone oxidoreductase (N-terminal fragment), authentic frameshift
LSA0540	Isa540	Putative NADPH-quinone oxidoreductase (C-terminal fragment), authentic frameshift
LSA0541	Isa541	Putative DNA-binding protein, XRE family
LSA0542	Isa542	Aryl-alcohol dehydrogenase
LSA0543	Isa543	Putative 3-methy-adenine DNA glycosylase I
LSA0544	Isa544	Putative drug ABC exporter, ATP-binding subunit
LSA0545	Isa545	Putative drug ABC exporter, membrane-spanning subunit
LSA0546	Isa546	Hypothetical protein
LSA0547	Isa547	Two-component system, sensor histidine kinase (N-terminal fragment), authentic frameshift
LSA0548	Isa548	Two-component system, sensor histidine kinase (C-terminal fragment), authentic frameshift
LSA0549	Isa549	Two-component system, response regulator
LSA0550	Isa550	Hypothetical protein
LSA0551	Isa551	Putative oligopeptide ABC transporter, substrate-binding lipoprotein precursor
LSA0552	Isa552	Organic hydroperoxide resistance protein
LSA0553	Isa553	Hypothetical protein
LSA0555	Isa555	Hypothetical small protein
LSA0556	Isa556	Putative drug ABC exporter, ATP-binding subunit
LSA0557	Isa557	Putative drug ABC exporter, membrane-spanning subunit
LSA0558	Isa558	Putative transcriptional regulator, LytR/AlgR family
LSA0559	Isa559	Hypothetical integral membrane protein
LSA0560_a	Isa560_a	Putative bacteriocin immunity protein
LSA0560_b	Isa560_b	Putative bacteriocin inducing peptide
LSA0561	sppK	Two-component system, sensor histidine kinase, (SppK fragment), degenerate

LSA0562	sppK	Two-component system, sensor histidine kinase (SppK fragment), degenerate
LSA0563	sppR	Two-component system, response regulator SppR (sakacin P production)
LSA0564_a	Isa564_a	Hypothetical small peptide (orf141)
LSA0564_b	Isa564_b	Hypothetical small peptide (orf162)
LSA0564_c	Isa564_c	Putative bacteriocin Immunity protein (orf666)
LSA0565	Isa565	Hypothetical small peptide (orf168)
LSA0566	Isa566	Hypothetical small peptide (orf180)
LSA0567	Isa567	Hypothetical protein (orf330)
LSA0568	Isa568	Putative SakacinP immunity protein, SpiA (orf285)
LSA0569_a	Isa569_a	Hypothetical small protein (orf177)
LSA0569_b	Isa569_b	Hypothetical small protein (orf234)
LSA0570	Isa570	Hypothetical small protein
LSA0571	Isa571	Hypothetical small protein
LSA0572	tdcB	Threonine deaminase (Threonine ammonia-lyase,Threonine dehydratase, IlvA homolog)
LSA0573	Isa573	Hypothetical protein, CAAX protease family
LSA0574	Isa574	Hypothetical integral membrane protein
LSA0575	npr	NADH peroxidase
LSA0576	Isa576	Hypothetical protein
LSA0577	Isa577	Hypothetical protein
LSA0578	Isa578	Hypothetical integral membrane protein
LSA0579	Isa579	Putative transcriptional regulator, LysR family
LSA0580	ubiD	3-octaprenyl-4-hydroxybenzoate carboxy-lyase
LSA0581	ubiX	Putative 3-octaprenyl 4-hydroxybenzoate carboxylyase
LSA0582	Isa582	Hypothetical protein
LSA0583	glpQ	Glycerophosphodiester phosphodiesterase
LSA0584	pepD4	Dipeptidase D-type (U34 family)
LSA0585	Isa585	Hypothetical protein
LSA0586	Isa586	Site-specific recombinase, prophage Isa1 integrase
LSA0587	Isa587	Hypothetical prophage Isa1 protein
LSA0588	Isa588	Hypothetical prophage Isa1 protein
LSA0589	Isa589	Putative prophage Isa1 DNA-binding protein, XRE family
LSA0590	Isa590	Hypothetical prophage Isa1 protein
LSA0591	Isa591	Hypothetical prophage Isa1 protein
LSA0592	Isa592	Hypothetical prophage Isa1 peptide
LSA0593	Isa593	Hypothetical prophage Isa1 protein
LSA0594	Isa594	Hypothetical prophage Isa1 protein
LSA0595	Isa595	Putative prophage Isa1 DNA primase
LSA0596	Isa596	Hypothetical prophage Isa1 protein
LSA0597	Isa597	Hypothetical prophage Isa1 protein
LSA0598	Isa598	Hypothetical prophage Isa1 protein
LSA0599	Isa599	Hypothetical prophage Isa1 protein
LSA0600	Isa600	Hypothetical prophage Isa1 protein
LSA0601	Isa601	Hypothetical prophage Isa1 protein
LSA0602	Isa602	Hypothetical prophage Isa1 protein
LSA0603	cggR	Glycolytic genes regulator
LSA0604	gap	Glyceraldehyde 3-phosphate dehydrogenase
LSA0605	pgk	Phosphoglycerate kinase
LSA0606	tpi	Triosephosphate isomerase
LSA0607	eno	Phosphopyruvate hydratase
LSA0608	gloA	Lactoylglutathione lyase (N-terminal fragment), authentic frameshift
LSA0609	gloA	Lactoylglutathione lyase (C-terminal fragment), authentic frameshift
LSA0610	Isa610	Hypothetical cell surface protein precursor
LSA0611	Isa611	Hypothetical cell surface protein precursor
LSA0612	Isa612	Hypothetical cell surface protein precursor (with LPQTG sorting signal)
LSA0613	Isa613	Hypothetical cell surface protein

LSA0614	Isa614	Hypothetical extracellular protein precursor
LSA0615	Isa615	Putative transcriptional regulator, ArgR family
LSA0616	Isa616	Putative glycine/betaine/carnitine/choline ABC transporter, ATP-binding subunit
LSA0617	Isa617	Putative glycine/betaine/carnitine/choline ABC transporter, membrane-spanning subunit
LSA0618	Isa618	Putative glycine/betaine/carnitine/choline ABC transporter, substrate-binding lipoprotein
LSA0619	Isa619	Putative glycine/betaine/carnitine/choline ABC transporter, membrane-spanning subunit
LSA0620	riuA1	Pseudouridine synthase, 23S-rRNA-specific
LSA0621	pbp2A	Bifunctional glycosyltransferase/transpeptidase penicillin binding protein 2A
LSA0622	Isa622	Hypothetical protein
LSA0623	Isa623	Putative metallo-phosphoesterase
LSA0624	Isa624	Hypothetical protein
LSA0625	Isa625	Putative metal-dependent phosphohydrolase
LSA0626	prtM	Protein maturation protease precursor (peptidylprolyl isomerase)
LSA0627	Isa627	Hypothetical protein
LSA0628	Isa628	Putative diadenosine polyphosphate hydrolase
LSA0629	Isa629	Putative drug ABC exporter, ATP-binding subunit
LSA0630	Isa630	Putative drug ABC exporter, membrane-spanning/permease subunit
LSA0631	Isa631	Aminoglycoside phosphotransferase
LSA0632	Isa632	tRNA (guanine-N7)-methyltransferase
LSA0633	Isa633	Hypothetical small extracellular protein precursor
LSA0634	trxA4	Thioredoxin
LSA0635	Isa635	Putative aminoacyl-tRNA synthetase
LSA0636	asnB	Asparagine synthetase, glutamine-hydrolysing
LSA0637	murC	UDP-N-acetylmuranoyl-L-alanine synthetase
LSA0638	Isa638	Hypothetical integral membrane protein
LSA0639	Isa639	Putative transcriptional regulator, PadR family
LSA0640	Isa640	Hypothetical membrane protein
LSA0641	Isa641	Hypothetical extracellular peptide precursor
LSA0642	usp3	Similar to universal stress protein, UspA family
LSA0643	pepX	X-Prolyl dipeptidyl-aminopeptidase
LSA0644	Isa644	Putative acyl-CoA thioester hydrolase
LSA0645	Isa645	Hypothetical protein
LSA0646	Isa646	Putative acyltransferase, family 3
LSA0647	Isa647	Hypothetical extracellular protein precursor
LSA0648	Isa648	Putative penicillin-binding protein precursor (Beta-lactamase class C)
LSA0649	glpK	Glycerol kinase
LSA0650	glpD	Glycerol-3-phosphate dehydrogenase
LSA0651	glpF	Glycerol uptake facilitator protein, MIP family
LSA0652	purE	Phospho ribosylaminoimidazole carboxylase (AIR carboxylase), catalytic subunit
LSA0653	purK1	Phospho ribosylaminoimidazole carboxylase (AIR carboxylase), ATPase subunit
LSA0654	purB1	Adenylosuccinate lyase
LSA0655	purC	Phospho ribosylaminoimidazole-succinocarboxamide synthase
LSA0656	purS	Phospho ribosylformylglycinamide synthase
LSA0657	purQ	Phospho ribosylformylglycinamide synthase, glutamine amidotransferase domain
LSA0658	purL	Phospho ribosylformylglycinamide synthase, synthetase domain
LSA0659	purF	Amidophosphoribosyltransferase
LSA0660	purM	Phospho ribosylformylglycinamide cyclo-ligase
LSA0661	purN	Phospho ribosylglycinamide formyltransferase
LSA0662	purH	Bifunctional protein:phospho ribosylaminoimidazole carboxamide formyltransferase
LSA0663	purD	Phosphoribosylamine-glycine ligase (Phosphoribosylglycinamide synthetase)
LSA0664	loxL1	L-lactate oxidase (N-terminal fragment), degenerate
LSA0665	loxL1	L-lactate oxidase (central fragment), degenerate
LSA0666	loxL1	L-lactate oxidase (C-terminal fragment), degenerate
LSA0667	Isa667	Hypothetical protein
LSA0668	Isa668	Hypothetical protein

LSA0669	Isa669	Putative transcription regulator, TetR family
LSA0670	rplU	50S ribosomal protein L21
LSA0671	Isa671	Putative ribosomal protein
LSA0672	rpmA	50S Ribosomal protein L27
LSA0673	efp2	Elongation factor P (EF-P)
LSA0674	Isa674	Putative general stress protein
LSA0675	nusB	Ribosomal RNA transcription antitermination protein NusB
LSA0676	folD	Bifunctional enzyme: Methylenetetrahydrofolate dehydrogenase/methenyltetrahydrofolate cyclohydrolase
LSA0677	xseA	Exodeoxyribonuclease VII, large subunit
LSA0678	xseB	Exodeoxyribonuclease VII, small subunit
LSA0679	ispA	Farnesyl-diphosphate synthase
LSA0680	Isa680	Putative rRNA methylase, hemolysin A homolog
LSA0681	Isa681	Putative transcriptional regulator, ArgR family
LSA0682	recN	DNA repair and genetic recombination protein N
LSA0683	Isa683	Hypothetical protein
LSA0684	Isa684	Hypothetical protein
LSA0685	gmk2	Guanylate kinase
LSA0686	rpoZ	DNA-directed RNA polymerase, omega subunit
LSA0687	dfp	Phosphopantothienoylcysteine synthetase/decarboxylase
LSA0688	priA	Primosomal replication protein N (factor Y)
LSA0689	fnt	Methionyl-tRNA formyltransferase
LSA0690	Isa690	Putative rRNA methyltransferase (sun protein)
LSA0691	Isa691	Putative serine/threonine protein phosphatase
LSA0692	Isa692	Putative serine/threonine protein kinase
LSA0693	Isa693	Putative GTP-binding protein
LSA0694	rpe	Ribulose-phosphate 3-epimerase
LSA0695	Isa695	Putative thiamin pyrophosphokinase
LSA0696	rpmB	50S ribosomal protein L28
LSA0697	Isa697	Putative general stress protein
LSA0698	Isa698	Hypothetical protein
LSA0699	recG	ATP-dependent DNA helicase, RecG
LSA0700	plsX	Fatty acid/phospholipid synthesis protein, PlsX
LSA0701	acp	Acyl carrier protein (ACP)
LSA0702	oppA	Oligopeptide ABC transporter, substrate-binding lipoprotein precursor
LSA0703	oppB	Oligopeptide ABC transporter, membrane-spanning subunit
LSA0704	oppC	Oligopeptide ABC transporter, membrane-spanning subunit
LSA0705	oppD	Oligopeptide ABC transporter, ATP-binding subunit
LSA0706	oppF	Oligopeptide ABC transporter, ATP-binding subunit
LSA0707	rncS	Ribonuclease (RNase III)
LSA0708	smc	Chromosome segregation Smc protein
LSA0709	ftsY	Signal recognition particle-docking protein FtsY
LSA0710	Isa710	Hypothetical protein
LSA0711	Isa711	Putative gluconate permease
LSA0712	Isa712	Glycerate kinase
LSA0713	Isa713	Hypothetical protein
LSA0714	ffh	Signal recognition particle protein Ffh
LSA0715	rpsP	30S ribosomal protein S16
LSA0716	Isa716	Hypothetical protein
LSA0717	rimM	16S rRNA processing protein, RimM
LSA0718	trmD	tRNA (guanine-N1-)-methyltransferase
LSA0719	Rpl19	50S ribosomal protein L19
LSA0720	Isa720	Hypothetical small protein
LSA0721	Isa721	Hypothetical small protein
LSA0722	Isa722	Hypothetical integral membrane protein
LSA0723	Isa723	Hypothetical protein

LSA0724	Isa724	Hypothetical protein
LSA0725	Isa725	Hypothetical protein
LSA0727	Isa727	Hypothetical cell surface protein precursor
LSA0728	Isa728	Hypothetical small protein
LSA0729	Isa729	Hypothetical protein
LSA0730	Isa730	Hypothetical protein
LSA0731	Isa731	Hypothetical protein
LSA0732	Isa732	Hypothetical protein
LSA0733	Isa733	Hypothetical protein
LSA0734	prmA	Ribosomal protein L11 methyltransferase
LSA0735	Isa735	Hypothetical protein
LSA0736	Isa736	Hypothetical integral membrane protein
LSA0737	relA	GTP pyrophosphokinase
LSA0738	dtd	D-tyrosyl-tRNA(tyr) deacylase
LSA0739	Isa739	Putative hydrolase, haloacid dehalogenase family
LSA0740	Isa740	Hypothetical integral membrane protein
LSA0741	Isa741	Hypothetical protein
LSA0742	Isa742	Hypothetical protein
LSA0743	Isa743	Putative S-adenosylmethionine-dependent-methyltransferase
LSA0744	ftsL	Putative cell division protein FtsL
LSA0745	pbp2B1	Bifunctional dimerisation/transpeptidase penicillin-binding 2B
LSA0746	mraY	Phospho-N-acetylmuramoyl-pentapeptide-transferase
LSA0747	murD	UDP-N-acetylmuramoylalanine--D-glutamate ligase
LSA0748	murG	UDP-N-acetylglucosamine--N-acetylmuramyl- pyrophosphoryl-undecaprenol N-acetylglucosamine transferase
LSA0749	ftsQ	Cell division protein, FtsQ
LSA0750	ftsA	Cell division protein, FtsA
LSA0751	ftsZ	Cell division protein, FtsZ
LSA0752	Isa752	Hypothetical protein
LSA0753	Isa753	Hypothetical integral membrane protein
LSA0754	Isa754	Hypothetical protein
LSA0755	divIVA	Cell-division initiation protein (septum placement)
LSA0756	ileS	Isoleucyl-tRNA synthetase
LSA0757	Isa757	Hypothetical protein
LSA0758	Isa758	Hypothetical extracellular peptide precursor
LSA0759	Isa759	Putative mannose-specific phosphotransferase system, enzyme IIA (N-terminal fragment), authentic frameshift
LSA0760	Isa760	Putative mannose-specific phosphotransferase system, enzyme IIA (C-terminal fragment), authentic frameshift
LSA0761	topB	DNA topoisomerase III
LSA0762	Isa762	Extracellular/cell surface DNA-entry nuclease precursor
LSA0763	galR	Galactose operon transcriptional regulator, LacI family
LSA0764	galK	Galactokinase
LSA0765	galE1	UDP-glucose 4-epimerase
LSA0766	galT	Galactose-1-phosphate uridylyltransferase (Gal-1-P uridylyltransferase)
LSA0767	galM	Aldose 1-epimerase (mutarotase)
LSA0768	csp1	Similar to cold shock protein, CspA family
LSA0769	tyrS	Tyrosyl-tRNA synthetase
LSA0770	Isa770	Putative drug:H(+) antiporter
LSA0771	Isa771	Hypothetical integral membrane protein
LSA0772	Isa772	Hypothetical protein (TelA, Telluric resistance family)
LSA0773	Isa773	Hypothetical protein
LSA0774	Isa774	Putative ADP-ribose pyrophosphatase, NUDIX family
LSA0775	Isa775	Hypothetical protein
LSA0776	pfs	Methylthioadenosine nucleosidase (nucleoside phosphorylase)
LSA0777	Isa777	Hypothetical protein
LSA0778	Isa778	Hypothetical protein
LSA0779	Isa779	Hypothetical protein

LSA0780	Isa780	Putative cobalt ABC transporter, ATP-binding subunit
LSA0781	Isa781	Putative cobalt ABC transporter, membrane-spanning/permease subunit
LSA0782	Isa782	Putative Cobalt ABC transporter, membrane-spanning/permease subunit
LSA0783	Isa783	Putative transcriptional regulator, Fnr/Crp Family
LSA0784	Isa784	Hypothetical protein
LSA0785	Isa785	Putative NCAIR mutase, PurE-related protein
LSA0786	Isa786	Hypothetical protein
LSA0787	Isa787	Hypothetical protein
LSA0788	Isa788	Putative facilitator protein, MIP family
LSA0789	Isa789	Hypothetical protein
LSA0790	Isa790	Hypothetical protein, ATP utilizing enzyme PP-loop family
LSA0791	Isa791	Putative cysteine desulfurase (aminotransferase, class V)
LSA0792	Isa792	Hypothetical protein
LSA0794	trmU	tRNA (5-methylaminomethyl-2-thiouridylate)-methyltransferase
LSA0795	deoC	2 Deoxyribose-5 phosphate aldolase
LSA0796	deoB	Phosphopentomutase (Phosphodeoxyribomutase)
LSA0797	deoD	Purine-nucleoside phosphorylase
LSA0798	Isa798	Pyrimidine-specific nucleoside symporter
LSA0799	Isa799	Putative purine transport protein
LSA0800	deoR	Deoxyribonucleoside synthesis operon transcriptional regulator, GntR family
LSA0801	pdp	Pyrimidine-nucleoside phosphorylase
LSA0802	nox1	NADH oxidase, water-forming (NOX)
LSA0803	gpm4	Phosphoglycerate mutase
LSA0804	Isa804	Hypothetical protein
LSA0805	recD	Exodeoxyribonuclease V, alpha subunit
LSA0806	Isa806	Putative N-acetyl transferase, GNAT family
LSA0807	Isa807	Hypothetical protein
LSA0808	Isa808	Putative amino acid export protein
LSA0809	Isa809	Putative DNA alkylation repair enzyme
LSA0810	Isa810	Putative transcriptional regulator, MerR family
LSA0811	Isa811	Putative acetyltransferase
LSA0812	fabZ1	(3R)-hydroxymyristoyl-[acyl-carrier protein] dehydratase
LSA0813	fabH	3-oxoacyl-[acyl carrier protein] synthetase III
LSA0814	acpP	Acyl carrier protein
LSA0815	fabD	Malonyl-CoA:ACP transacylase
LSA0816	fabG	3-oxoacyl-acyl carrier protein reductase
LSA0817	fabF	3-oxoacyl-[acyl carrier protein] synthetase II
LSA0818	accB	Acetyl-CoA carboxylase (Biotin carboxyl carrier subunit)
LSA0819	fabZ2	(3R)-hydroxymyristoyl-[acyl carrier proetin] dehydratase
LSA0820	accC	Acetyl-CoA carboxylase (biotin carboxylase subunit)
LSA0821	accD	Acetyl-CoA carboxylase (carboxyl transferase beta subunit)
LSA0822	accA	Acetyl-CoA carboxylase (carboxyl transferase alpha subunit)
LSA0823	fabI	Enoyl [acyl carrier protein] reductase
LSA0824	birA1	Biotin-[acetyl-CoA carboxylase] ligase
LSA0825	Isa825	Putative biotin synthesis protein
LSA0826	Isa826	Hypotetical small peptide
LSA0827	Isa827	Hypothetical lipoprotein precursor
LSA0828	Isa828	Hypothetical protein
LSA0829	Isa829	Hypothetical integral membrane protein
LSA0830	iunh3	Inosine-uridine preferring nucleoside hydrolase
LSA0831	Isa831	Putative nitroreductase (oxidoreductase)
LSA0832	Isa832	Hypothetical protein
LSA0833	Isa833	Putative hydrolase, haloacid dehalogenase family
LSA0835	Isa835	Putative DNA-binding protein, XRE family
LSA0836	usp6	Similar to universal stress protein, UspA family

LSA0837	Isa837	Hypothetical protein
LSA0839	Isa839	Putative DNA-replication helicase
LSA0840	Isa840	Putative glutamate-cysteine ligase
LSA0841	Isa841	Hypothetical protein
LSA0842	Isa842	Hypothetical protein
LSA0844	rpsD	30S Ribosomal protein S4
LSA0845	Isa845	Putative negative regulator of septum ring formation
LSA0846	Isa846	Putative cysteine desulfurase (aminotransferase class V)
LSA0847	thil	Thiamine biosynthesis ATP pyrophosphorylase
LSA0848	Isa848	Hypothetical protein
LSA0849	valS	Valyl-tRNA synthetase
LSA0850	folC1	Putative polyglutamate synthase
LSA0851	Isa851	Putative hydrolase, haloacid dehalogenase family
LSA0852	radC	DNA repair protein (RadC)
LSA0853	mreB	Cell shape determining protein MreB, actin-like
LSA0854	mreC	Cell shape determining lipoprotein precursor
LSA0855	mreD	Cell shape determining protein
LSA0856	minC	Septum site-determining protein
LSA0857	minD	Septum formation-inhibiting ATPase, ATPase ParA-type
LSA0858	Isa858	Putative amino acid ABC transporter, membrane-spanning subunit
LSA0859	Is859	Putative amino acid ABC transporter, ATP-binding subunit
LSA0860	Isa860	Putative amino acid ABC transporter, substrate-binding lipoprotein precursor
LSA0861	cls1	Cardiolipin synthetase (Phospholipase D family)
LSA0862	Isa862	N-acetylmuramoyl-L-alanine amidase precursor (cell wall hydrolase) (autolysin)
LSA0863	hisS	Histidyl-tRNA synthetase
LSA0864	aspS	Aspartyl-tRNA synthetase
LSA0865	Isa865	Putative protein methionine sulfoxide reductase
LSA0866	msrA	Protein methionine sulfoxide reductase
LSA0867	Isa867	Hypothetical membrane protein
LSA0868	nfo	Endodeoxyribonuclease type IV
LSA0869	Isa869	Hypothetical small peptide
LSA0870	Isa870	Hypothetical protein
LSA0871	Isa871	Putative nitroreductase (oxidoreductase)
LSA0872	Isa872	Hypothetical protein
LSA0873	rpsU	30S ribosomal protein S21
LSA0874	Isa874	Hypothetical protein
LSA0875	phoH	Phosphate starvation-inducible protein, PhoH
LSA0876	Isa876	Hypothetical protein
LSA0877	dgkA	Diacylglycerol kinase
LSA0878	Isa878	Putative GTP-binding protein
LSA0879	recO	DNA repair protein O
LSA0880	glyQ	Glycyl-tRNA synthetase, alpha subunit
LSA0881	glyS	Glycyl-tRNA synthetase, beta subunit
LSA0882	Isa882	Hypothetical protein
LSA0883	dnaG	DNA primase G
LSA0884	sigA	DNA-directed RNA polymerase sigma factor, sigma A (Primary sigma factor)
LSA0885	Isa885	Hypothetical protein
LSA0886	Isa886	Hypothetical protein
LSA0887	Isa887	Hypothetical protein
LSA0888	pepT	Tripeptide aminopeptidase T
LSA0889	aroD	3-dehydroquinate dehydratase (Type I DHQase)
LSA0890	Isa890	Hypothetical lipoprotein precursor
LSA0891	Isa891	Putative lipase/esterase
LSA0892	aroE	Shikimate 5-dehydrogenase
LSA0893	aroH	Phospho-2-dehydro-3-deoxyheptonate aldolase (chorismate mutase)

LSA0894	aroB	3-dehydroquinate synthase
LSA0895	aroK	Shikimate kinase
LSA0896	sodA	Iron/Manganese superoxide dismutase
LSA0897	pepD5	Dipeptidase D-type (U34 family)
LSA0898	Isa898	Putative keto-enol isomerase (oxidoreductase)
LSA0899	Isa899	Putative hydrolase, haloacid dehalogenase family
LSA0900	Isa900	Hypothetical protein
LSA0901	Isa901	Hypothetical protein
LSA0902	Isa902	Hypothetical protein
LSA0903_b	tnpA-ISLsa	Transposase (orfA) of ISLsa2 (C-terminal fragment), authentic frameshift
LSA0904	tnpA-ISLsa	Transposase (orfA) of ISLsa2 (N-terminal fragment), authentic frameshift
LSA0905	idi	Isopentenyl diphosphate delta-isomerase (IPP isomerase)
LSA0906	mvaK2	Phosphomevalonate kinase
LSA0907	mvaD	Diphosphomevalonate decarboxylase
LSA0908	mvaK1	Mevalonate kinase
LSA0909	rexB	ATP-dependent exonuclease, subunit B (ATP-dependent exonuclease, subunit B)
LSA0910	rexA	ATP-dependent exonuclease, subunit A (N terminal fragment), authentic frameshift
LSA0911	rexA	ATP-dependent exonuclease, subunit A (C terminal fragment), authentic frameshift
LSA0912	Isa912	Putative ATP-dependent helicase, DinG family
LSA0913	Isa913	Hypothetical extracellular protein precursor
LSA0914	asnS	Asparaginyl-tRNA synthetase
LSA0915	dnaD	DNA replication protein DnaD (Primosomal protein DnaD)
LSA0916	Isa 916	Putative DNA repair protein, endonuclease III
LSA0917	pbp1A	Bifunctional glycosyltransferase/transpeptidase penicillin-binding protein 1A
LSA0918	recU	Recombination protein U
LSA0919	Isa919	Hypothetical protein
LSA0920	Isa920	Hypothetical protein, DivIVA homolog
LSA0921	Isa921	Putative adenine-specific DNA methyltransferase
LSA0922	serA	D-3-phosphoglycerate dehydrogenase
LSA0923	Isa923	Putative phage envelope protein
LSA0924	Isa924	Putative site-specific recombinase, phage integrase family
LSA0925	adh	Putative zinc-containing alcohol dehydrogenase (oxidoreductase)
LSA0926	Isa926	Hypothetical protein
LSA0927	Isa927	Hypothetical integral membrane protein
LSA0928	Isa928	Hypothetical protein
LSA0929	Isa929	Hypothetical protein
LSA0930	Isa930	Putative ABC transporter, ATP-binding subunit
LSA0931	Isa931	Hypothetical integral membrane protein
LSA0933	Isa933	Hypothetical protein
LSA0934	lplA	Lipoate-protein ligase
LSA0935	Isa935	Putative DNA-binding protein, XRE family
LSA0936	Isa936	Putative drug ABC exporter, membrane-spanning/permease subunit
LSA0937	Isa937	Putative drug ABC exporter, membrane-spanning/permease subunit
LSA0938	Isa938	Putative drug ABC exporter, ATP-binding subunit
LSA0939	Isa939	Putative transcriptional regulator, MarR family
LSA0940	nrdF	Ribonucleoside-diphosphate reductase, beta chain
LSA0941	nrdE	Ribonucleoside-diphosphate reductase, alpha chain
LSA0942	nrdH	Ribonucleotide reductase, NrdH-redoxin
LSA0943	cls2	Cardiolipin synthetase (Phospholipase D family)
LSA0944	Isa944	Putative ribonuclease H
LSA0945	Isa945	Hypothetical protein
LSA0946	csp4	Similar to cold shock protein, CspA family
LSA0947	fhs	Formate-tetrahydrofolate ligase (Formyltetrahydrofolate synthetase)
LSA0948	lspA	Signal peptidase II (Lipoprotein signal peptidase) (Prolipoprotein signal peptidase)
LSA0949	rluA2	Pseudouridylylase synthase, 23S rRNA-specific

LSA0950	pyrR	Bifunctional protein: uracil phosphoribosyltransferase and pyrimidine operon transcriptional regulator
LSA0951	pyrP	Uracil:cation symporter
LSA0952	pyrB	Aspartate carbamoyltransferase (Asparate transcarbamylase)
LSA0953	pyrC	Dihydroorotase
LSA0954	pyrAA	Carbamoyl-phosphate synthase, glutaminase subunit
LSA0955	pyrAB	Carbamoyl-phosphate synthase, catalytic subunit
LSA0956	pyrDA	Dihydroorotate oxidase, electron transfer subunit
LSA0957	pyrDB1	Dihydroorotate oxidase, catalytic subunit
LSA0958	pyrF	Orotidine-5'-phosphate decarboxylase
LSA0959	pyrE	Orotate phosphoribosyltransferase
LSA0960	Isa960	Putative fibronectin/fibrinogene-binding protein
LSA0961	Isa961	Hypothetical protein, DegV family
LSA0962	Isa962	Hypothetical protein
LSA0963	Isa963	Integral membrane protein, hemolysin III related
LSA0964	Isa964	Hypothetical protein, DegV family
LSA0965	Isa965	Putative transcriptional regulator, TerR family
LSA0966	Isa966	Putative Zinc-containing alcohol dehydrogenase (oxidoreductase)
LSA0967	xerC1	Site-specific DNA-tyrosine recombinase, XerC
LSA0968	Isa968	Hypothetical integral membrane protein
LSA0969	Isa969	Putative Cadmium/zinc/Cobalt-transporting P-type ATPase
LSA0970	Isa970	Hypothetical protein
LSA0971	ppa	Inorganic pyrophosphatase (Pyrophosphate phosphohydrolase)
LSA0972	Isa972	Putative transcriptional regulator, LysR family
LSA0973	pflA	Formate C-acetyltransferase activating enzyme (Pyruvate formate-lyase activating enzyme)
LSA0974	pflB	Formate C-acetyltransferase (Pyruvate formate-lyase) (Formate acetyltransferase)
LSA0975	parC	Topoisomerase IV, subunit A
LSA0976	parE	Topoisomerase IV, subunit B
LSA0977	Isa977	Hypothetical integral membrane protein
LSA0978	Isa978	Putative ABC transporter, membrane-spanning/permease subunit
LSA0979	Isa979	Putative ABC transporter, ATP-binding subunit
LSA0980	Isa980	Putative hydroxymethylpyrimidine / phosphomethylpyrimidine kinase, PfkB family
LSA0981	aldB	Acetolactate decarboxylase (Alpha-acetolactate decarboxylase)
LSA0982	als	Acetolactate synthase (Alpha-acetolactate synthase)
LSA0983	Isa983	Putative aldose-1 epimerase
LSA0984	hslU	ATP-dependent Hsl protease, ATP-binding subunit HslU
LSA0985	hslV	ATP-dependent Hsl protease, proteolytic subunit HslV
LSA0986	xerC2	Site-specific DNA-tyrosine recombinase, XerC
LSA0987	Isa987	Hypotehtical protein, GidA family (C-terminal fragment)
LSA0988	Isa988	Hypotehtical protein, GidA family (N-terminal fragment)
LSA0989	topA	DNA topoisomerase I
LSA0990	Isa990	Hypothetical protein
LSA0991	Isa991	Hypothetical protein
LSA0992	Isa992	Putative DNA processing protein, DprA/SMF family
LSA0993	rnhB	Ribonuclease HII (RNase HII)
LSA0994	Isa994	Putative GTP-binding protein
LSA0995	sipA2	Signal peptidase I (Leader peptidase I)
LSA0996	Isa996	Hypothetical protein
LSA0997	Isa997	Hypothetical extracellular protein precursor
LSA0998	Isa998	Putative extracellular lysophospholipase precursor
LSA0999	Isa999	Hypothetical protein, DegV family
LSA1000	dfrA	Dihydrofolate reductase
LSA1001	thyA	Thymidylate synthase
LSA1002	Isa1002	Putative drug resistance ABC transporter, two ATP-binding subunits
LSA1003	Isa1003	Hypothetical protein
LSA1004	papS	Polynucleotide adenylyltransferase

LSA1005	Isa1005	Hypothetical membrane protein
LSA1006	Isa1006	Putative zinc-containing alcohol dehydrogenase (oxidoreductase)
LSA1007	Isa1007	Putative transcriptional regulator, DUF24 family (related to MarR/PadR families)
LSA1008	Isa1008	Putative extracellular chitin-binding protein precursor
LSA1009	Isa1009	Putative drug:H(+) antiporter (C-terminal fragment), authentic frameshift
LSA1010	Isa1010	Putative drug:H(+) antiporter (N-terminal fragment), authentic frameshift
LSA1011	Isa 1011	Hypothetical protein
LSA1012	Isa1012	Putative ABC exporter, membrane-spanning subunit
LSA1013	Isa1013	Putative ABC exporter, ATP-binding subunit
LSA1014	Isa1014	Hypothetical protein
LSA1015	hbsU	Histone-like DNA-binding protein HU
LSA1016	Isa1016	Putative GTP-binding protein
LSA1017	rpsA	30S Ribosomal protein S1
LSA1018	cmk	Cytidylate kinase
LSA1019	Isa1019	Hypothetical cell surface protein precursor
LSA1020	recQ	ATP-dependent DNA helicase (RecQ)
LSA1021	Isa1021	Hypothetical protein
LSA1022	Isa1022	Ferredoxin
LSA1023	Isa1023	Hypothetical integral membrane protein
LSA1024	rsuA1	Pseudouridylate synthase, 16SrRNA-specific
LSA1025	Isa1025	Segregation and condensation protein B
LSA1026	Isa 1026	Hypothetical protein
LSA1027	Isa1027	Hypothetical protein
LSA1028	XerD	Site-specific DNA tyrosine recombinase, XerD
LSA1029	Isa1029	Putative transcriptional regulator, Fur family
LSA1030	Isa1030	Hypothetical protein
LSA1031	Isa1031	Hypothetical integral membrane protein
LSA1032	pyk	Pyruvate kinase
LSA1033	pfk	6-phosphofructokinase
LSA1034	dnaE	DNA-directed DNA polymerase III, alpha subunit
LSA1035	Isa1035	Hypothetical small integral membrane protein
LSA1036	Isa1036	Hypothetical lipoprotein precursor
LSA1037	Isa1037	Putative amino acid/polyamine transport protein
LSA1038	Isa1038	Hypothetical protein
LSA1039	rpmF	50S ribosomal protein L32
LSA1040	clpB	Chaperone ClpB
LSA1041	Isa1041	Hypothetical protein
LSA1042	Isa1042	Putative oxidoreductase, short-chain dehydrogenase/reductase family
LSA1043	rnz	Ribonuclease Z (RNase Z)
LSA1044	Isa1044	Putative acyltransferase
LSA1045	Isa1045	Putative GTP-binding protein
LSA1047	Isa1047	Hypothetical protein
LSA1048	fruR	Fructose operon transcription regulator, DeoR family
LSA1049	fruK	1-phosphofructokinase (fructose-1-phosphate kinase)
LSA1050	fruA	Fructose-specific phosphotransferase system, enzyme IIABC
LSA1051	uvrA	Excinuclease ABC, ATP binding subunit
LSA1052	Isa1052	Hypothetical membrane protein
LSA1053	Isa1053	Putative cinnamoyl-CoA reductase (oxidoreductase)
LSA1054	Isa1054	Transcription regulator, tetR family
LSA1055	uvrC	Excinuclease ABC, subunit C
LSA1056	Isa1056	Putative amino acid ABC transporter, ATP-binding subunit
LSA1057	Isa1057	Putative amino acid ABC transporter, substrate binding/permease subunit
LSA1058	Isa1058	Hypothetical protein
LSA1059	Isa1059	Putative nucleoside pyrophosphatase
LSA1060	Isa1060	Putative GTP-binding protein

LSA1061	clpX	ATP-dependent Clp protease, ATP-binding subunit ClpX
LSA1062	tig	Trigger factor
LSA1063	tuf	Elongation factor Tu
LSA1064	Isa1064	Hypothetical protein
LSA1065	Isa1065	Putative hydrolase, metallo-beta-lactamase superfamily
LSA1066	rpsO	30S Ribosomal protein S15
LSA1067	rpsT	30S Ribosomal protein S20
LSA1068	holA	DNA-directed DNA polymerase III, delta subunit
LSA1069	Isa1069	Putative bacterial type II secretion/competence system, protein ComEC-like
LSA1070	Isa1070	Putative bacterial type II secretion/competence system, DCMP deaminase ComEB-like
LSA1071	Isa1071	Putative bacterial type II secretion/competence system, protein ComEA-like
LSA1072	Isa1072	Hypothetical lipoprotein precursor
LSA1073	kdtB	Phosphopantetheine adenylyltransferase (Pantetheine-phosphate adenylyltransferase)
LSA1074	Isa1074	Putative adenine-specific DNA methyltransferase
LSA1075	Isa1075	Hypothetical protein
LSA1076	Isa1076	Hypothetical extracellular protein precursor
LSA1077	ftsW	Integral membrane cell division protein, FtsW
LSA1078	Isa1078	Hypothetical protein
LSA1079	Isa1079	GTP-binding protein TypA (stress response GTPase)
LSA1080	Isa1080	Myo-inositol monophosphatase
LSA1081	Isa1081	Hypothetical protein
LSA1082	pdhD	Pyruvate dehydrogenase complex, E3 component, dihydrolipoamide dehydrogenase
LSA1083	pdhC	Pyruvate dehydrogenase complex, E2 component, dihydrolipoamide acetyltransferase
LSA1084	pdhB	Pyruvate dehydrogenase complex, E1 component, beta subunit
LSA1085	pdhA	Pyruvate dehydrogenase complex, E1 component, alpha subunit
LSA1086	Isa1086	hypothetical protein
LSA1087	def1	Formylmethionine deformylase (N-formylmethionylaminoacyl-tRNA deformylase)
LSA1088	Isa1088	Putative multidrug ABC exporter, ATP-binding and membrane-spanning/permease subunits
LSA1089	Isa1089	Putative multidrug ABC exporter, ATP-binding and membrane-spanning/permease subunits
LSA1090	Isa1090	Hypothetical protein
LSA1091	Isa1091	Hypothetical protein
LSA1092	Isa1092	Putative hydrolase, metallo-beta-lactamase superfamily
LSA1093	Isa1093	Hypothetical protein with a diacylglycerol kinase catalytic domain
LSA1094	Isa1094	Hypothetical integral membrane protein
LSA1095	Isa1095	Putative transcriptional activator, TENA/THI-4 family
LSA1096	Isa1096	Hypothetical protein
LSA1097	Isa1097	Putative ADP-ribose phosphorylase, NUDIX family
LSA1098	folP	Dihydropteroate synthase
LSA1099	folC2	Folypolyglutamate synthase
LSA1100	folE	GTP cyclohydrolase I
LSA1101	folK	2-amino-4-hydroxy-6-hydroxymethylidihydropteridine pyrophosphokinase
LSA1102	folB	Dihydroneopterin aldolase
LSA1103	Isa1103	Putative N-acetyltransferase, GNAT family
LSA1104	Isa1104	Hypothetical protein
LSA1105	Isa1105	Hypothetical integral membrane protein
LSA1107	Isa1107	Hypothetical protein
LSA1108	Isa1108	Putative chromosome segregation ATPase
LSA1109	Isa1109	Putative ABC-type system involved in Fe-S cluster assembly (sufB homolog)
LSA1110	Isa1110	Putative NifU-homolog involved in Fe-S cluster assembly
LSA1111	Isa1111	Putative cysteine desulfurase (Class-V aminotransferase, putative SufS protein homologue)
LSA1112	Isa1112	Putative ABC-type system involved in Fe-S cluster assembly (SufB homolog)
LSA1113	Isa1113	Putative ABC-type ATP-binding protein involved in Fe-S cluster assembly (SufC homolog)
LSA1114	Isa1114	Putative methionine ABC transporter, substrate binding lipoprotein precursor
LSA1115	Isa1115	Putative methionine ABC transporter, membrane-spanning subunit
LSA1116	Isa1116	Putative methionine ABC transporter, ATP-binding subunit

LSA1117	Isa1117	Putative aminomethyltransferase, family of glycine cleavage H protein
LSA1118	Isa1118	Rod-shape determining protein
LSA1119	Isa1119	Hypothetical protein
LSA1120	Isa1120	Hypothetical protein
LSA1121	Isa1121	Hypothetical extracellular peptide precursor
LSA1122	mbI	Cell shape determining protein, MerB family
LSA1123	murA1	UDP-N-acetylglucosamine 1-carboxyvinyltransferase I
LSA1124	Isa1124	Hypothetical protein
LSA1125	atpC	H(+)-transporting two-sector ATPase (ATP synthase), epsilon subunit
LSA1126	atpD	H(+)-transporting two-sector ATPase (ATP synthase), beta subunit
LSA1127	atpG	H(+)-transporting two-sector ATPase (ATP synthase), gamma subunit
LSA1128	atpA	H(+)-transporting two-sector ATPase (ATP synthase), alpha subunit
LSA1129	atpH	H(+)-transporting two-sector ATPase (ATP synthase), delta subunit
LSA1130	atpF	H(+)-transporting two-sector ATPase (ATP synthase), B subunit
LSA1131	atpE	H(+)-transporting two-sector ATPase (ATP synthase), C subunit
LSA1132	atpB	H(+)-transporting two-sector ATPase (ATP synthase), A subunit
LSA1133	upp	Uracil phosphoribosyltransferase (UMP pyrophosphorylase)
LSA1134	glyA	Glycine/Serine hydroxymethyltransferase
LSA1135	Isa1135	Putative translation factor, SUA5 family
LSA1136	Isa1136	Putative protoporphyrinogen oxidase, HemK
LSA1137	prfA	Peptide chain release factor 1
LSA1138	tdk	Thymidine kinase (deoxyuridine kinase)
LSA1139	Isa1139	Putative UDP-N-acetylmuramyl peptide synthetase
LSA1140	Isa1140	Putative glutamine amidotransferase
LSA1141	ppdK	Pyruvate phosphate dikinase
LSA1142	Isa1142	Hypothetical protein with CBS domain
LSA1143	Isa1143	Hypothetical protein
LSA1144	Isa1144	Hypothetical protein
LSA1145	Isa1145	Putative metal-dependent phosphohydrolase
LSA1146	manA	Mannose-6-phosphate isomerase
LSA1147	Isa1147	Hypothetical protein
LSA1148	Isa1148	Putative multidrug ABC exporter, ATP-binding and membrane-spanning/permease subunits
LSA1149	Isa1149	Putative multidrug ABC exporter, ATP-binding and membrane-spanning/permease subunit
LSA1150	Isa1150	Putative transcriptional regulator, TetR family
LSA1151	Isa1151	Potassium/ion channel protein
LSA1152_b	csp2	Similar to cold shock protein, CspA family
LSA1153	Isa1153	Hypothetical protein, CAAX protease family
LSA1154	Isa1154	Hypothetical protein
LSA1155	Isa1155	Hypothetical integral membrane protein
LSA1156	Isa1156	Hypothetical integral membrane protein
LSA1157	mgsA	Methylglyoxal synthase
LSA1158	Isa1158	Hypothetical protein
LSA1159	Isa1159	Hypothetical cell surface protein precursor
LSA1160	Isa1160	Hypothetical protein
LSA1161	Isa1161	Hypothetical protein
LSA1162	Isa1162	DNA-repair protein (SOS response UmuC-like protein)
LSA1163	Isa1163	Hypothetical protein
LSA1164	Isa1164	Hypothetical protein
LSA1165	Isa1165	Hypothetical cell surface protein precursor
LSA1166	Isa1166	Putative potassium transport protein
LSA1167	Isa1167	Hypothetical protein
LSA1168	Isa1168	Putative nucleoside deoxyribosyltransferase
LSA1169	Isa1169	Putative 6-phospho-beta-glucosidase, glycoside hydrolase family 1
LSA1170	Isa1170	Putative facilitator protein, MIP family
LSA1171	Isa1171	Hypothetical extracellular protein precursor

LSA1172	Isa1172	Hypothetical lipoprotein precursor
LSA1173	usp4	Similar to universal stress protein, UspA family
LSA1174	Isa1174	Hypothetical protein
LSA1175	Isa1175	Hypothetical protein
LSA1176	Isa1176	Hypothetical protein
LSA1177	Isa1177	Hypothetical lipoprotein precursor
LSA1178	Isa1178	Hypothetical protein
LSA1179	pgi	Glucose-6-phosphate isomerase
LSA1180	tnpA-ISLsa:Transposase (orfA) of ISLsa3 (IS4 family)	
LSA1181	tnpB-ISLsa:Transposase (orfB) of ISLsa3 (IS4 family)	
LSA1182	Isa1182	Cytochrome P450 (C-terminal fragment), truncated
LSA1183_c	Isa1183_c	Cytochrome P450 (N-terminal fragment), truncated
LSA1185	Isa1185	Putative ABC transporter, substrate-binding lipoprotein precursor
LSA1186	Isa1186	Putative ABC transporter, membrane-spanning subunit
LSA1187	Isa1187	Putative ABC transporter, ATP-binding subunit
LSA1188	pox1	Pyruvate oxidase
LSA1189	Isa1189	Hypothetical integral membrane protein
LSA1190	Isa1190	Putative 4-carboxymuconolactone decarboxylase
LSA1191	Isa1191	Hypothetical protein
LSA1192	Isa1192	Putative transcriptional regulator, MerR family
LSA1193	Isa1193	Putative oxidoreductase
LSA1194	Isa1194	Hypothetical membrane protein
LSA1195	Isa1195	Hypothetical protein
LSA1196	Isa1196	Putative lysophospholipase L
LSA1197	Isa1197	Hypothetical protein
LSA1198	Isa1198	Putative trehalose and glucose-specific phosphotransferase system, enzyme EIIA
LSA1199	treC	Trehalose-6-phosphate phosphoglucohydrolase (Phosphotrehalase)
LSA1200	Isa1200	Putative trehalose and glucose-specific phosphotransferase system, enzyme IIBC
LSA1201	Isa1201	Putative transcriptional regulator, GntR family
LSA1202	Isa1202	Hypothetical protein
LSA1203	Isa1203	Hypothetical membrane protein
LSA1204	Isa1204	Putative sugar transporter
LSA1205	Isa1205	Hypothetical integral membrane protein
LSA1206	Isa1206	Putative glycosyl transferase, group 1
LSA1207	Isa1207	Putative phosphoglycerol transferase
LSA1208	Isa1208	Hypothetical protein
LSA1209	Isa1209	Hypothetical membrane protein
LSA1210	Isa1210	Putative cytosine:cation symporter (C-terminal fragment), authentic frameshift
LSA1211	Isa1211	Putative cytosine:cation symporter (N-terminal fragment), authentic frameshit
LSA1212	Isa1212	Cytosine deaminase, (N-terminal fragment), authentic frameshift
LSA1213	Isa1213	Cytosine deaminase (C-terminal fragment), authentic frameshift
LSA1214	Isa1214	Two-component system, sensor histidine kinase
LSA1215	Isa1215	Two component system, response regulator
LSA1216	Isa1216	Hypothetical protein
LSA1218	Isa1218	Putative hydrolase, haloacid dehalogenase family
LSA1219	Isa1219	Putative cationic amino acid transport protein
LSA1220	citG	Triphosphoribosyl-dephospho-coenzymeA synthase
LSA1221	citR	Citrate catabolism transcriptional regulator, GntR family
LSA1222	oadA	Oxaloacetate decarboxylase, alpha subunit
LSA1223	citX	Apo-citrate lyase phosphoribosyl-dephospho- CoA transferase
LSA1224	citF	Citrate lyase, alpha subunit
LSA1225	citE	Citrate lyase, beta subunit
LSA1226	citD	Citrate lyase, gamma-subunit (Acyl carrier protein)
LSA1227	citC	[citrate (pro-3S)-lyase] ligase (citrate lyase synthetase)
LSA1228	Isa1228	Hypothetical small peptide

LSA1229	oadB	Oxaloacetate decarboxylase, beta subunit
LSA1230	oadG	Oxaloacetate decarboxylase, gamma subunit
LSA1231	Isa1231	Hypothetical protein
LSA1232	citM	Citrate:Mg(2+)(H+) symporter
LSA1233	birA2	Biotin-[acetyl-CoA-carboxylase] ligase
LSA1234	Isa1234	Hypothetical protein
LSA1235	dnaJ	Chaperone protein DnaJ (heat-shock protein Hsp40)
LSA1236	dnaK	Chaperone protein DnaK (heat-shock protein Hsp70)
LSA1237	grpE	Co-chaperone protein GrpE
LSA1238	hrcA	Transcriptional regulator of heat-shock/chaperone genes
LSA1239	Isa1239	Putative antibiotic acetyltransferase, isoleucine patch superfamily
LSA1240	Isa1240	Putative coproporphyrinogen oxidase, HemN
LSA1241	Isa1241	Bifunctional enzyme, riboflavin kinase and FMN adenylyltransferase
LSA1242	truB	tRNA-specific pseudouridylyl synthase (tRNA pseudouridine synthase B)
LSA1243	Isa1243	Hypothetical protein
LSA1244	Isa1244	Hypothetical protein
LSA1245	Isa1245	Hypothetical protein
LSA1246	Isa1246	Putative glycosyl transferase, family 2
LSA1247	rbfA	Ribosome-binding factor A
LSA1248	infB	Translation initiation factor IF-2
LSA1249	Isa1249	Putative 50S ribosomal protein, L7A family
LSA1250	Isa1250	Hypothetical protein
LSA1251	nusA	Transcription elongation protein NusA (Transcription termination-antitermination factor NusA)
LSA1252	Isa1252	Hypothetical protein
LSA1253	Isa1253	Hypothetical protein
LSA1254	Isa1254	Hypothetical protein
LSA1255	Isa1255	Hypothetical protein
LSA1256	polC	DNA-directed DNA polymerase III, polC-type
LSA1257	proS	Prolyl-tRNA synthetase
LSA1258	Isa1258	Putative membrane-associated zinc metalloendopeptidase
LSA1259	cdsA	Phosphatidate cytidylyltransferase
LSA1260	uppS	Di-trans-poly-cis-decaprenylcistransferase (undecaprenyl diphosphate synthetase)
LSA1261	Isa1261	Putative autotransport protein
LSA1262	frr	Ribosome recycling factor (ribosome releasing factor) (RRF)
LSA1263	pyrH	Uridylate kinase (Uridine monophosphate kinase) (UMP kinase)
LSA1264	tsf	Elongation factor Ts (EF-Ts)
LSA1265	rpsB	30S ribosomal protein S2
LSA1266	Isa1266	Putative endonuclease
LSA1267	Isa1267	Putative methyltransferase
LSA1268	plsC	1-acyl-sn-glycerol-3-phosphate acyltransferase
LSA1269	Isa1269	Putative extracellular hydrolase precursor (Lipase/esterase)
LSA1271	Isa1271	Putative multidrug ABC exporter, ATP-binding and membrane-spanning/permease subunits
LSA1272	Isa1272	Putative multidrug ABC exporter, ATP-binding and membranespanning/permease subunits
LSA1273	Isa1273	Hypothetical small extracellular protein precursor
LSA1274	Isa1274	Hypothetical protein
LSA1275	lexA	Transcriptional repressor LexA
LSA1276	apt	Adenine phosphoribosyltransferase (APRT)
LSA1277	recJ	Single-strand DNA-specific exonuclease RecJ
LSA1280	galE2	UDP-glucose 4-epimerase
LSA1281	Isa1281	Hypothetical membrane protein
LSA1282	Isa1282	Hypothetical protein
LSA1283	Isa1283	Hypothetical cell surface protein precursor
LSA1284	Isa1284	Hypothetical cell surface protein precursor (with LPQTG sorting signal)
LSA1285	Isa1285	Hypothetical cell surface protein precursor (C-terminal fragment), truncated
LSA1286	Isa1286	Hypothetical cell surface protein precursor (N-terminal fragment), truncated

LSA1287	Isa1287	Hypothetical cell surface protein precursor
LSA1288	Isa1288	Hypothetical protein
LSA1289	Isa1289	Hypothetical protein
LSA1290	lepA	GTPase LepA
LSA1291	Isa1291	Hypothetical protein
LSA1292	Isa1292	Putative prophage protein
LSA1293	Isa1293	Hypothetical protein
LSA1294	Isa1294	Putative prophage nuclease precursor
LSA1295	Isa1295	Hypothetical membrane protein
LSA1296	Isa1296	Hypothetical integral membrane protein
LSA1297	Isa1297	Hypothetical membrane protein
LSA1298	ack2	Acetate kinase (Acetokinase)
LSA1299	Isa1299	Putative adenine-specific DNA methyltransferase
LSA1300	Isa1300	Hypothetical protein
LSA1301	Isa1301	Hypothetical protein
LSA1302	Isa1302	Hypothetical protein
LSA1303	Isa1303	Hypothetical protein
LSA1304	Isa1304	Putative bacterial type II secretion/competence system, protein ComGC-like precursor
LSA1305	Isa1305	Putative Bacterial type II secretion/competence system, protein comGB-like
LSA1306	Isa1306	Putative bacterial type II secretion/competence system, protein ComGA-like
LSA1307	Isa1307	Hypothetical protein
LSA1308	Isa1308	Hypothetical membrane protein
LSA1309	Isa1309	Hypothetical protein
LSA1310	Isa1310	Hypothetical membrane protein
LSA1311	Isa1311	Hypothetical protein containing a possible heme/steroid binding domain
LSA1312	Isa1312	Hypothetical integral membrane protein
LSA1313	Isa1313	Putative transcriptional regulator, LysR family
LSA1314	Isa1314	Putative drug:Na(+) antiporter (drug efflux pump)
LSA1315	Isa1315	Putative lipase/esterase
LSA1316	rluA3	Pseudouridylate synthase, 23S rRNA-specific
LSA1317	Isa1317	Putative chromate reductase
LSA1318	Isa1318	Hypothetical integral membrane protein
LSA1319	Isa1319	Hypothetical small protein
LSA1320	Isa1320	Putative NADPH-quinone oxidoreductase
LSA1321	glnA	Glutamate--ammonia ligase (Glutamine synthetase)
LSA1322	glnR	Glutamine synthetase transcriptional regulator, MerR family
LSA1323	tag2	3-methyl-adenine DNA glycosylase I
LSA1324	Isa1324	Putative DNA-binding protein, XRE family
LSA1325	Isa1325	Hypothetical protein
LSA1326	miaA	tRNA isopentenyltransferase (tRNA delta(2)-isopentenylpyrophosphate transferase) (IPP transferase)
LSA1327	Isa1327	Hypothetical extracellular peptide precursor
LSA1328	Isa1328	Putative Rhodanese-sulfurtransferase
LSA1329	glk	Glucokinase
LSA1330	Isa1330	Hypothetical protein
LSA1331	Isa1331	Hypothetical integral membrane protein
LSA1332	fthC	5-formyltetrahydrofolate cyclo-ligase
LSA1333	rpmG1	50S ribosomal protein L33
LSA1334	pbp2B2	Bifunctional dimerisation/transpeptidase penicillin-binding protein 2B
LSA1335	Isa1335	Hypothetical membrane protein
LSA1336	Isa1336	Putative Na(+)/H(+) antiporter
LSA1337	murB	UDP-N-acetylpyruvoylglucosamine reductase
LSA1338	exoA	Exodeoxyribonuclease III
LSA1339	dnaQ	DNA-directed DNA polymerase III, epsilon subunit
LSA1340	Isa1340	Putative transport protein
LSA1341	Isa1341	Putative N-acetyltransferase, GNAT family

LSA1342	Isa1342	Hypothetical protein
LSA1343	pta	Phosphate acetyltransferase (Phosphotransacetylase)
LSA1344	ung	Uracil-DNA glycosylase
LSA1345	Isa1345	Putative hydrolase, haloacid dehalogenase family
LSA1346	Isa1346	Hypothetical protein
LSA1347	Isa1347	Hypothetical integral membrane protein
LSA1348	Isa1348	Hypothetical extracellular protein precursor
LSA1349	Isa1349	Putative N-Acetyltransferase, GNAT family
LSA1350	Isa1350	Hypothetical protein
LSA1351	Isa1351	Putative transcriptional regulator with aminotransferase domain, GntR family
LSA1352	Isa1352	Putative phosphomethylpyrimidine kinase
LSA1353	Isa1353	Hypothetical integral membrane protein
LSA1354	Isa1354	Hypothetical protein
LSA1355	glmS	L-glutamine--D-fructose-6-phosphate amidotransferase (Glucosamine-6-phosphate synthetase)
LSA1356	Isa1356	Hypothetical integral membrane protein
LSA1357	glmM	Phosphoglucosamine mutase (Glucosamine 6-P mutase)
LSA1358	Isa1358	Hypothetical protein
LSA1359	Isa1359	Hypothetical protein
LSA1360	potD	Spermidine/putrescine ABC transporter, substrate binding lipoprotein precursor
LSA1361	potC	Spermidine/putrescine ABC transporter, membrane-spanning protein
LSA1362	potB	Spermidine/putrescine ABC transporter, membrane-spanning subunit
LSA1363	potA	Spermidine/putrescine ABC transporter, ATP-binding subunit
LSA1364	Isa1364	Putative zinc-containing alcohol dehydrogenase (oxidoreductase)
LSA1365	Isa1365	Hypothetical protein
LSA1366	Isa1366	Putative ABC exporter, ATP-binding subunit
LSA1367	Isa1367	Putative ABC exporter, membrane-spanning/permease subunit
LSA1368	Isa1368	Hypothetical protein
LSA1369	Isa1369	Two-component system, response regulator
LSA1370	Isa1370	Two-component system, sensor histidine kinase
LSA1371	Isa1371	Hypothetical membrane protein
LSA1372	greA	Transcription elongation factor GreA (Transcriptcleavage factor GreA)
LSA1373	udk	Uridine monophosphokinase (Cytidine monophosphokinase)
LSA1374	Isa1374	Hypothetical protein
LSA1375	pheT	Phenylalanyl-tRNA synthetase, beta subunit
LSA1376	pheS	Phenylalanyl-tRNA synthetase, alpha subunit
LSA1378	Isa1378	Putative transcriptional regulator, DUF24 family (related to the MarR/PadR families)
LSA1379	Isa1379	Putative metal-dependent phosphohydrolase
LSA1380	Isa1380	Putative tRNA/rRNA methyltransferase
LSA1381	Isa1381	Putative acylphosphatase
LSA1382	oxaA1	Membrane protein chaperone oxaA
LSA1383	Isa1383	Two-component system, sensor histidine kinase
LSA1384	Isa1384	Two-component system, response regulator
LSA1385	gndA	6-phosphogluconate dehydrogenase
LSA1386	Isa1386	Hypothetical protein
LSA1387	Isa1387	Hypothetical protein
LSA1388	Isa1388	Putative methyltransferase
LSA1389	Isa1389	Hypothetical protein
LSA1390	Isa1390	Putative metal-dependent phosphohydrolase
LSA1391	nadD	Nicotinate-nucleotide adenylyltransferase (Deamido-NAD(+)) pyrophosphorylase)
LSA1392	Isa1392	Hypothetical protein
LSA1393	Isa1393	Putative GTP-binding protein
LSA1394	Isa1394	Putative hydrolase, haloacid dehalogenase family
LSA1395	Isa1395	Putative zinc-containing alcohol dehydrogenase (oxidoreductase)
LSA1396	rplT	50S ribosomal protein L20
LSA1397	rpml	50S ribosomal protein L35

LSA1398	infC	Translation initiation factor IF-3
LSA1399	loxL2	L-Lactate oxidase
LSA1400	thrS	Threonyl-tRNA synthetase
LSA1401	dnal	Primosomal protein Dnal (Helicase loader)
LSA1402	dnaB	Chromosome replication initiation/membrane attachment protein B
LSA1403	Isa1403	Hypothetical domain
LSA1404	coaE	Dephosphocoenzyme A kinase
LSA1405	fpg	Formamidopyrimidine-DNA glycosylase
LSA1406	polA	DNA-directed DNA polymerase I
LSA1407	Isa1407	Putative transcriptional regulator, MarR family
LSA1408	Isa1408	Hypothetical protein
LSA1409	Isa1409	Hypothetical cell surface protein precursor
LSA1410	smpB	t/mRNA binding protein (SsrA RNA binding protein)
LSA1411	rnr	Exoribonuclease R, RNase II family
LSA1412	Isa1412	Putative lipase/esterase
LSA1413	secG	Preprotein translocase, SecG subunit
LSA1414	Isa1414	Putative chloride channel protein
LSA1415	Isa1415	Putative amino acid/polyamine transport protein
LSA1416	Isa1416	Putative ABC transporter, membrane-spanning/permease subunit
LSA1417	Isa1417	Putative ABC transporter, ATP-binding psubunit (C-terminal fragment), authentic frameshift
LSA1418	Isa1418	Putative ABC transporter, ATP-binding subunit (N-terminal fragment), authentic frameshift
LSA1419	Isa1419	Putative transcriptional regulator, GntR family
LSA1420	Isa1420	Putative lipase/esterase
LSA1421	argS	Arginyl-tRNA synthetase
LSA1422	Isa1422	Putative drug ABC exporter, ATP-binding and membrane-spanning/permease subunits
LSA1423	Isa1423	Hypothetical protein
LSA1424	Isa1424	Putative L-aspartate transport protein
LSA1426	Isa1426	Putative aminopeptidase
LSA1427	Isa1427	Putative hydrolase, haloacid dehalogenase family
LSA1428	Isa1428	Putative Copper-transporting P-type ATPase
LSA1429	Isa1429	Putative copper-chaperone/transport protein
LSA1430	Isa1430	Hypothetical protein
LSA1431	rsuA2	Pseudouridylyl synthase, 16S-rRNA-specific
LSA1432	Isa1432	Putative drug:Na(+) antiporter (drug efflux pump)
LSA1433	Isa1433	Putative transport protein, major facilitator superfamily
LSA1434	Isa1434	Putative transcriptional regulator, DUF24 family (related to MarR/PadR families)
LSA1435	Isa1435	Putative amino acid:H(+) symporter
LSA1436	leuS	Leucyl-tRNA synthetase
LSA1437	Isa1437	N-acetylmuramoyl-L-alanine amidase precursor (cell wall hydrolase) (Autolysin)
LSA1438	Isa1438	Putative phosphoesterase
LSA1439	Isa1439	Putative methyltransferase
LSA1440	cutC	Copper homeostasis protein, CutC family
LSA1441	bacA	Putative undecaprenol kinase (Bacitracine resistance protein A)
LSA1442	rluA4	Pseudouridine synthase, 23S-rRNA-specific
LSA1443	Isa1443	Putative inorganic polyphosphate/ATP-NAD kinase
LSA1444	Isa1444	Hypothetical protein
LSA1445	Isa1445	Hypothetical protein
LSA1446	Isa1446	Hypothetical protein
LSA1447	Isa1447	Hypothetical protein
LSA1448	mecA	similar to MecA, putative adapter protein for Clp protease
LSA1449	spxA	Transcriptional regulator Spx
LSA1450	Isa1450	Putative metal-dependent hydrolase (Beta-lactamase family III)
LSA1451	Isa1451	Hypothetical integral membrane protein
LSA1452	Isa1452	Putative ABC exporter, membrane-spanning/permease subunit
LSA1453	Isa1453	Putative ABC exporter, ATP-binding subunit

LSA1454	Isa1454	Two-component system, response regulator
LSA1455	Isa1455	Two-component system, sensor histidine kinase
LSA1456	Isa1456	Hypothetical lipoprotein precursor
LSA1457	Isa1457	Putative cellobiose-specific phosphotransferase system, enzyme IIC
LSA1458	nrdG	Anaerobic ribonucleotide reductase activator protein
LSA1459	nrdD	Anaerobic ribonucleoside-triphosphate reductase
LSA1460	atkB	Copper-transporting P-type ATPase
LSA1461	atkY	Negative regulator of copper transport operon, AtkY
LSA1462	ptsI	Phosphoenolpyruvate-protein phosphotransferase(Phosphotransferase system, enzyme I)
LSA1463	ptsH	Phosphocarrier protein HPr (Histidine-containing protein)
LSA1464	Isa1464	Hypothetical protein
LSA1465	clpE	ATPase/chaperone ClpE, putative specificity factor for ClpP protease
LSA1466	Isa1466	Hypothetical protein
LSA1467	Isa1467	Hypothetical protein
LSA1468	Isa1468	Hypothetical protein
LSA1469	prfC	Peptide chain release factor 3 (RF-3)
LSA1470	Isa1470	Putative ion Mg(2+)/C(o2+) transport protein, hemolysinC related
LSA1471	Isa1471	Putative transport protein
LSA1472	Isa1472	Putative N-acetyl transferase, GNAT family
LSA1473	Isa1473	Hypothetical integral membrane protein
LSA1474	Isa1474	Putative bifunctional glycosyl transferase, family 8
LSA1475	Isa1475	Hypothetical protein
LSA1476	Isa1476	Putative A/G-specific adenine glycosylase
LSA1477	Isa1477	Putative regulatory protein, RecX family
LSA1478	Isa1478	Hypothetical protein
LSA1479	Isa1479	Putative RNA methyltransferase, TrmA family
LSA1480	Isa1480	Hypothetical membrane protein
LSA1481	Isa1481	Hypothetical protein
LSA1482	Isa1482	Hypothetical protein
LSA1484	mvaS	Hydroxymethylglutaryl-CoA synthase
LSA1485	mvaA	Hydroxymethylglutaryl-CoA reductase
LSA1486	Isa1486	Putative acetyl-CoA C-acetyltransferase (acetoacetyl-CoA thiolase)
LSA1487	Isa1487	Hypothetical protein
LSA1488	Isa1488	Hypothetical protein
LSA1489	Isa1489	Hypothetical integral membrane protein
LSA1490	Isa1490	Hypothetical protein
LSA1491	Isa1491	Hypothetical protein
LSA1492	Isa1492	Hypothetical protein
LSA1493	Isa1493	Putative diacylglycerol kinase
LSA1494	Isa1494	Hypothetical membrane protein
LSA1495	rfbB	Putative dTDP-glucose 4,6-dehydratase
LSA1496	Isa1496	Putative glutamine/glutamate ABC transporter, ATP-binding subunit
LSA1497	Isa1497	Putative glutamine/glutamate ABC transporter, membrane-spanning/substrate-binding subunit precursor
LSA1498	Isa1498	Hypothetical protein
LSA1499	def2	Formylmethionine deformylase (formyl-L-methionyl peptideamidohydrolase)
LSA1500	Isa1500	Two-component system, response regulator
LSA1501	Isa1501	Two-component system, sensor histidine kinase
LSA1503	Isa1503	Hypothetical protein
LSA1504	Isa1504	Hypothetical protein
LSA1506	Isa1506	Hypothetical protein
LSA1507	galU	UTP--glucose-1-phosphate uridylyltransferase
LSA1508	Isa1508	Hypothetical protein
LSA1509	Isa1509	Hypothetical protein
LSA1510_a	Isa1510_a	Putative teichoic acid/polysaccharide export protein
LSA1510_b	Isa1510_b	Hypothetical protein

LSA1510_c	Isa1510_c	Hypothetical protein with a signal peptidase II-like domain
LSA1510_d	Isa1510_d	Putative Glycosyl transferase, family 2
LSA1510_e	Isa1510_e	Putative glycosyl transferase, group 1
LSA1510_f	Isa1510_f	Putative glycosyl transferase, family 8
LSA1510_g	Isa1510_g	Putative priming glycosyl transferase
LSA1511	Isa1511	Putative polysaccharide biosynthesis protein, chain length determination
LSA1512	Isa1512	Putative polysaccharide biosynthesis protein, chain length determination
LSA1513	Isa1513	Putative transcriptional regulator (involved in exocellular polysaccharide biosynthesis)
LSA1514	Isa1514	Putative ribonuclease
LSA1515	pepM	Methionyl aminopeptidase M
LSA1516	Isa 1516	Flavodoxin
LSA1517	gtcA1	Teichoic acid glycosylation protein
LSA1518	gtcA2	Teichoic acid glycosylation protein
LSA1519	Isa1519	Putative teichoic acid/polysaccharide glycosyl transferase, family 2
LSA1520	mnaA	UDP-N-acetylglucosamine 2-epimerase
LSA1521	Isa1521	Putative transcriptional regulator, TetR family
LSA1522	pepS	Aminopeptidase S
LSA1523	Isa1523	Hypothetical protein
LSA1524	Isa1524	Hypothetical protein
LSA1525	Isa1525	Small multidrug resistance efflux protein, SMR family
LSA1526	Isa1526	Hypothetical protein
LSA1527	fba	Fructose-bisphosphate aldolase
LSA1528	Isa1528	Putative aromatic acid transport protein (C-terminal fragment), authentic frameshift
LSA1529	Isa1529	Putative aromatic acid transport protein (N-terminal fragment), authentic frameshift
LSA1530	Isa1530	Putative small molecules-binding protein, 3H domain
LSA1531	Isa1531	Putative beta-glucosidase
LSA1532	Isa1532	Hypothetical protein
LSA1533	Isa1533	Putative cellobiose-specific phosphotransferasesystem, enzyme IIA
LSA1534	Isa1534	Putative ATP-dependent RNA helicase
LSA1535	Isa1535	Putative oxidoreductase
LSA1536	Isa1536	Hypothetical protein
LSA1537	Isa1537	Hypothetical extracellular protein precursor
LSA1538	Isa1538	Putative extracellular glycosyl hydrolase precursor, family 25 (Lysosyme M1 family)
LSA1539	Isa1539	Hypothetical protein
LSA1540	Isa1540	Hypothetical extracellular protein precursor
LSA1541	Isa1541	Putative extracellular lipase/esterase precursor
LSA1542	Isa1542	Putative phosphotransferase system, enzyme IIC (C-terminal fragment), authentic frameshift
LSA1543	Isa1543	Putative phosphotransferase system, enzyme IIC (N-terminal fragment), authentic frameshift
LSA1544	Isa1544	Putative RNA methyltransferase
LSA1545	Isa1545	Putative diacylglycerol kinase
LSA1546	gatB	Glutamyl-tRNA amidotransferase, subunit B
LSA1547	gatA	Glutamyl-tRNA amidotransferase, subunit A
LSA1548	gatC	Glutamyl-tRNA amidotransferase, subunit C
LSA1549	Isa1549	Hypothetical extracellular protein precursor
LSA1550	Isa1550	Hypothetical lipoprotein precursor
LSA1551	ligA	NAD-dependent DNA ligase
LSA1552	pcrA	ATP-dependent DNA helicase
LSA1553	Isa1553	Putative hydrolase, haloacid dehalogenase family
LSA1554	Isa1554	Putative transcriptional regulator, LacI family
LSA1555	purB2	Adenylosuccinate lyase
LSA1556	purK2	Phospho ribosylaminoimidazole carboxylase (AIR carboxylase), ATPase subunit
LSA1557	xpt	Xanthine phosphoribosyltransferase
LSA1558	Isa1558	Putative extracellular N-acetylmuramoyl-L-alanine amidase precursor (cell wall hydrolase/Lysosyme subfamily 2)
LSA1559	Isa1559	Putative oxidoreductase
LSA1560	Isa1560	Putative N-acetyltransferase, GNAT family

LSA1561	csp3	Similar to cold shock protein, CspA family
LSA1562	Isa1562	Hypothetical lipoprotein precursor
LSA1563	Isa1563	Hypothetical integral membrane protein
LSA1564	Isa1564	Putative N-acetyltransferase, GNAT family
LSA1565	Isa1565	Hypothetical protein
LSA1566	Isa1566	Putative transcription accessory protein, RNA-binding
LSA1567	Isa1567	Hypothetical protein
LSA1568	Isa1568	Putative calcium-transporting P-type ATPase
LSA1569	nadE	NH(3)-dependent NAD(+) synthetase
LSA1570	nadC	Nicotinate phosphoribosyltransferase
LSA1571	tagA	N-acetylglucosamylidiphospho-undecaprenol-N-acetyl-beta-D-mannosaminyltransferase
LSA1572	Isa1572	Putative teichoic acid/polysaccharide glycosyl transferase, family 2
LSA1573	Isa1573	Putative teichoic acid/polysaccharide glycosyl transferase, group 1
LSA1574	tagD	Glycerol-3-phosphate cytidyltransferase (CDP-glycerol pyrophosphorylase) (Teichoic acid biosynthesis protein D)
LSA1575	Isa1575	Putative teichoic acid/polysaccharide export protein
LSA1576	tagB	CDP-glycerol:glycerophosphate glycerophosphotransferase (Teichoic acid biosynthesis protein B)
LSA1577	Isa1577	Hypothetical protein
LSA1578	Isa1578	Putative teichoic acid/polysaccharide biosynthesis protein
LSA1579	Isa1579	Putative teichoic acid/polysaccharide export protein
LSA1580	Isa1580	Hypothetical integral membrane protein
LSA1581	Isa1581	Putative teichoic acid-binding N-acetylmuramoyl L-alanine amidase (cell wall hydrolase)
LSA1582	Isa1582	Hypothetical small cell surface protein precursor
LSA1583	Isa1583	Hypothetical protein
LSA1584	Isa1584	Putative teichoic acid/polysaccharide glycosyl transferase
LSA1585	Isa1585	Putative teichoic acid/polysaccharide phosphoglycerol transferase
LSA1587	Isa1587	Putative transcriptional regulator, GntR family
LSA1588	nagA	N-acetylglucosamine-6-phosphate deacetylase
LSA1589	Isa1589	Putative oxidoreductase
LSA1590	proC	Pyrroline-5-carboxylate reductase
LSA1591	srtA2	Putative surface protein transpeptidase 2 (Sortase 2)
LSA1592	dtpT	Di-/tripeptide:H(+) symporter
LSA1593	Isa1593	Putative nucleotide diphosphate hydrolase, NUDIX family
LSA1594	lysS	Lysyl-tRNA synthetase
LSA1595	Isa1595	Putative dihydrouridine synthetase
LSA1596	hslO	Molecular chaperone, Hsp33 family
LSA1597	ftsH	ATP-dependent zinc metalloendopeptidase FtsH (cell division protein FtsH)
LSA1598	hpt	Hypoxanthine phosphoribosyltransferase
LSA1599	Isa1599	Putative ATPase of the PP-loop superfamily, cell cycle protein
LSA1600	Isa1600	Putative RNA-binding protein
LSA1601	Isa1601	Hypothetical protein
LSA1602	Isa1602	Hypothetical protein with RNA-binding domain S4
LSA1603	Isa1603	Putative drug:Na(+) antiporter (drug efflux pump)
LSA1604	mfd	Transcription-repair coupling factor (TRCF)
LSA1605	pth	Aminoacyl-tRNA hydrolase (Peptidyl-tRNA hydrolase)
LSA1606	ldh	L-lactate dehydrogenase
LSA1607	Isa1607	Putative transcriptional regulator, MarR family
LSA1608	Isa1608	Hypothetical extracellular protein precursor
LSA1609	Isa1609	Hypothetical protein
LSA1610	Isa1610	Hypothetical integral membrane protein
LSA1611	Isa1611	Putative DNA-binding protein, PemK family
LSA1612	Isa1612	Hypothetical protein
LSA1613	alr	Alanine racemase
LSA1614	acpS	Holo-[acyl-carrier protein] synthase (Holo-ACP synthase) (4'-phosphopantetheine transferase AcpS)
LSA1615	Isa1615	Putative ATP-dependent RNA helicase
LSA1616	murF	UDP-N-acetylmuramoyl-tripeptide--D-alanyl-D-alanine ligase

LSA1617	Isa1617	Hypothetical protein
LSA1618	htpX	Membrane metalloprotease, HtpX homolog
LSA1619	Isa1619	Hypothetical protein, LemA family
LSA1620	Isa1620	Hypothetical protein
LSA1621	Isa1621	Putative drug:H(+) antiporter
LSA1622	Isa1622	Hypothetical protein
LSA1623	Isa1623	Hypothetical integral membrane protein
LSA1624	Isa1624	Hypothetical integral membrane protein
LSA1625	Isa1625	Hypothetical protein
LSA1626	Isa1626	Hypothetical integral membrane protein
LSA1627	rpmE	50S ribosomal protein L31
LSA1628	murA2	UDP-N-acetylglucosamine 1-carboxyvinyltransferase II
LSA1629	pyrG	Cytidine triphosphate synthase
LSA1630	Isa1630	Putative sugar kinase, ROK family
LSA1631	rpoE	DNA-directed RNA polymerase, delta subunit
LSA1632	Isa1632	Hypothetical protein
LSA1633	Isa1633	Hypothetical protein
LSA1634	Isa1634	Putative metal-dependent phosphohydrolase
LSA1635	Isa1635	Hydrolase, haloacid dehalogenase family
LSA1636	Isa1636	Hypothetical protein
LSA1637	Isa1637	hypothetical integral membrane protein, TerC family
LSA1638	Isa1638	Putative large conductance mechanosensitive channel
LSA1639	Isa1639	Putative transcriptional regulator with a sugarisomerase domain, RpiR family
LSA1640	nanA	N-acetylneuraminate lyase
LSA1641	nanE	N-acylglucosamine-6-phosphate 2-epimerase (N-acetylmannosamine-6-phosphate 2-epimerase)
LSA1642	Isa1642	Putative Solute:Na(+) symporter
LSA1643	Isa1643	Putative sugar kinase, ROK family
LSA1644	Isa1644	Hypothetical protein
LSA1645	Isa1645	Putative Na(+)/(+) antiporter
LSA1646	prs	Ribose-phosphate diphosphokinase (Phosphoribosyl pyrophosphate synthetase)
LSA1647	Isa1647	Hypothetical membrane protein
LSA1648	glmU	UDP-N-acetylglucosamine pyrophosphorylase / N-acetylglucosamine-1-phosphate uridyltransferase
LSA1649	Isa1649	Hypothetical extracellular protein precursor
LSA1650	Isa1650	Hypothetical protein
LSA1651	Isa1651	Putative purine phosphoribosyltransferase, PRT family
LSA1652	ispE	Putative 4-(cytidine 5'-diphospho)-2-C-methyl-Derythritol kinase
LSA1653	Isa1653	Putative transcriptional regulator, MarR family
LSA1654	Isa1654	Hypothetical protein
LSA1655	ksgA	Dimethyladenosine transferase (S-adenosylmethionine-6-N, N -adenosyl(rRNA) dimethyltransferase)
LSA1656	Isa1656	Hypothetical primase-related protein
LSA1657	Isa1657	Putative deoxyribonuclease, TatD family
LSA1658	metS	Methionyl-tRNA synthetase
LSA1659	Isa1659	Hypothetical protein
LSA1660	Isa1660	Hypothetical small protein
LSA1661	Isa1661	Putative nucleotide hydrolase, NUDIX family
LSA1662	Isa1662	Hypothetical protein
LSA1663	Isa1663	Hypothetical protein
LSA1664	Isa1664	Putative dihydrofolate reductase
LSA1665	phnX	Phosphonoacetaldehyde hydrolase
LSA1666	rplL	50S ribosomal protein L7/L12
LSA1667	rplJ	50S ribosomal protein L10
LSA1668	ack3	Acetate kinase (Acetokinase)
LSA1669	Isa1669	Putative adenine transport protein
LSA1670	adeC2	Adenine deaminase
LSA1671	rplA	50S ribosomal protein L1

LSA1672	rplK	50S ribosomal protein L11
LSA1673	Isa1673	Putative lipase/esterase precursor
LSA1674	nusG	Transcription antitermination protein NusG
LSA1675	secE	Preprotein translocase, SecE subunit
LSA1676	rpmG2	50S ribosomal protein L33
LSA1677	Isa1677	Putative DNA-directed RNA polymerase sigma factor, sigma H family
LSA1678	Isa1678	Hypothetical protein
LSA1679	Isa1679	Putative tRNA/rRNA methyltransferase
LSA1680	Isa1680	Hypothetical protein
LSA1681	cysS	CysteinyI-tRNA synthetase
LSA1682	Isa1682	Hypothetical protein
LSA1683	Isa1683	Putative DNA repair protein RadA
LSA1684	dut	Deoxyuridine 5'-triphosphatase
LSA1685	rpiA	Ribose 5-phosphate epimerase (Ribose 5-phosphate isomerase)
LSA1686	pepC1	Cysteine aminopeptidase C1 (Bleomycin hydrolase) (N-terminal fragment), authentic frameshift
LSA1687	pepC1	Cysteine aminopeptidase C1 (Bleomycin hydrolase) (C-terminal fragment), authentic frameshift
LSA1688	pepC2	Cysteine aminopeptidase C2 (Bleomycin hydrolase)
LSA1689	Isa1689	Putative peptidase M20 family
LSA1690	Isa1690	Putative cellobiose-specific phosphotransferasesystem, enzyme IIC
LSA1691	Isa1691	Hypothetical protein
LSA1692	Isa1692	Putative transcriptional regulator, GntR family
LSA1693	asnB2	L-asparaginase
LSA1694	Isa1694	Putative glycine/betaine/carnitine ABC transporter, substrate binding lipoprotein precursor
LSA1695	Isa1695	Putative glycine/betaine/carnitine ABC transporter, membrane-spanning subunit
LSA1696	Isa1696	Putative glycine/betaine/carnitine ABC transporter, ATP-binding subunit
LSA1697	Isa1697	Putative amino-acid/polyamine transport protein
LSA1698	Isa1698	Hypothetical integral membrane protein
LSA1699	mntH2	Mn(2+)/Fe(2+) transport protein
LSA1700	Isa1700	Hypothetical protein
LSA1701	pdcA	p-coumaric acid decarboxylase
LSA1702	Isa1702	Putative zinc-containing alcohol dehydrogenase (oxidoreductase)
LSA1703	Isa1703	Putative Na(+)/H(+) antiporter
LSA1704	Isa1704	Putative calcium-transporting P-type ATPase
LSA1705	Isa1705	Hypothetical protein
LSA1706	Isa1706	Putative beta-lactamase (class A) precursor
LSA1707	Isa1707	Hypothetical protein
LSA1708	Isa1708	Hypothetical protein
LSA1709	Isa1709	Hypothetical protein
LSA1710	lacM	Beta-galactosidase, small subunit (Lactase, small subunit)
LSA1711	lacL	Beta-galactosidase, large subunit (Lactase, large subunit)
LSA1712	Isa1712	Putative nitroreductase (oxidoreductase)
LSA1713	Isa1713	Hypothetical small peptide
LSA1714	Isa1714	Hypothetical small protein
LSA1715	Isa1715	Hypothetical protein
LSA1716	Isa1716	Hypothetical protein
LSA1717	Isa1717	Putative DNA-binding protein, XRE family
LSA1718	Isa1718	Hypothetical lipoprotein precursor
LSA1719	Isa1719	Hypothetical protein
LSA1720_a	Isa1720_a	Hypothetical protein (C-terminal fragment), authentic frameshift
LSA1720_b	Isa1720_b	Hypothetical protein (N-terminal fragment), authentic frameshift
LSA1721	rpsI	30S ribosomal protein S9
LSA1722	rplM	50S ribosomal protein L13
LSA1723	truA	tRNA pseudouridylate synthase A (Pseudouridylate synthase I)
LSA1724	Isa1724	Putative transcriptional regulator, MarR family
LSA1725	Isa1725	Hypothetical cell surface protein precursor

LSA1726	lsa1726	Hypothetical protein
LSA1727	lsa1727	Hypothetical protein
LSA1728	lsa1728	Hypothetical cell surface protein precursor
LSA1729	lsa1729	Hypothetical cell surface protein precursor
LSA1730	lsa1730	Hypothetical cell surface protein
LSA1731	lsa1731	Hypothetical cell surface protein precursor
LSA1732	lsa1732	Hypothetical protein
LSA1734	lsa1734	Hypothetical extracellular protein precursor
LSA1735	lsa1735	Putative cobalt ABC transporter, membrane-spanning subunit
LSA1736	lsa1736	Putative cobalt ABC transporter, ATP-binding subunit
LSA1737	lsa1737	Putative cobalt ABC transporter, ATP-binding subunit
LSA1738	rplQ	50S ribosomal protein L17
LSA1739	rpoA	DNA-directed RNA polymerase, alpha subunit
LSA1740	rpsK	30S ribosomal protein S11
LSA1741	rpsM	30S Ribosomal protein S13
LSA1742	rpmJ	50S ribosomal protein L36
LSA1743	infA	Translation initiation factor IF-1
LSA1744	adk	Adenylate kinase (ATP-AMP transphosphorylase)
LSA1745	secY	Preprotein translocase, SecY subunit
LSA1746	rplO	50S ribosomal protein L15
LSA1747	rpmD	50S ribosomal protein L30
LSA1748	rpsE	30S ribosomal protein S5
LSA1749	rplR	50S ribosomal protein L18
LSA1750	rplF	50S ribosomal protein L6
LSA1751	rpsH	30S ribosomal protein S8
LSA1752	rplE	50S ribosomal protein L5
LSA1753	rplX	50S ribosomal protein L24
LSA1754	rplN	50S ribosomal protein L14
LSA1755	rpsQ	30S ribosomal protein S17
LSA1756	rpmC	50S ribosomal protein L29
LSA1757	rplP	50S ribosomal protein L16
LSA1758	rpsC	30S ribosomal protein S3
LSA1759	rplV	50S ribosomal protein L22
LSA1760	rpsS	30S ribosomal protein S19
LSA1761	rplB	50S ribosomal protein L2
LSA1762	rplW	50S ribosomal protein L23
LSA1763	rplD	50S ribosomal protein L4
LSA1764	rplC	50S ribosomal protein L3
LSA1765	rpsJ	30S ribosomal protein S10
LSA1766	lsa1766	Putative hydrolase isocharismatase/nicotinamidase family
LSA1768	fusA	Elongation factor G (EF-G)
LSA1769	rpsG	30S ribosomal protein S7
LSA1770	rpsL	30S ribosomal protein S12
LSA1771	lsa1771	Putative type IV leader peptidase (Bacterial type II secretion system)
LSA1772	lsa1772	Putative hydrolase, isocharismatase/nicotinamidase family (C-terminal fragment), authentic frameshift
LSA1773	lsa1773	Putative hydrolase, isocharismatase/nicotinamidase family (N-terminal fragment), authentic frameshift
LSA1774	rpoC	DNA-directed RNA polymerase, beta prime subunit
LSA1775	rpoB	DNA-directed RNA polymerase, beta subunit
LSA1776	lsa1776	Putative 4-carboxymuconolactone decarboxylase
LSA1777	lsa1777	Putative phosphate ABC transporter, substrate binding lipoprotein precursor
LSA1778	fbp	Fructose-1,6-bisphosphatase
LSA1779	clpC	ATPase/chaperone ClpC, putative specificity factor for ClpP protease
LSA1780	ctsR	Transcriptional regulator of stress response (CtsR)
LSA1781	lsa1781	Putative transcriptional regulator, Flp/Fnr family
LSA1782	lsa1782	Putative ferritin-like DNA-binding protein (oxidative damage protectant) (dps-type)

LSA1783	Isa1783	Putative heavy metal-chaperone/transport protein
LSA1784	Isa1784	Putative heavy metal-transporting P-type ATPase
LSA1785	Isa1785	Hypothetical protein
LSA1786	Isa1786	Putative melibiose:Na(+) transport protein
LSA1787	Isa1787	Hypothetical cell surface protein precursor
LSA1788	Isa1788	Putative phage-related 1,4-beta-N-acetyl muramidase (cell wall hydrolase)
LSA1789	Isa1789	Putative transcriptional regulator with a sugar-binding domain, LacI family
LSA1790	scrK	Fructokinase
LSA1791	dexB	Glucan 1,6-alpha-glucosidase (dextran glucosidase)
LSA1792	scrA	Sucrose-specific phosphotransferase system, enzyme IIBCA
LSA1793	scrB	Sucrase-6-phosphate hydrolase (Sucrase, Invertase)
LSA1794	scrR	Sucrose operon transcriptional regulator, LacI family
LSA1795	mela	Alpha-galactosidase (Melibiase)
LSA1796	Isa1796	Putative transcriptional regulator, AraC family
LSA1797	Isa1797	Putative transcriptional regulator, MerR family
LSA1798	Isa1798	Putative oxidoreductase, short chain dehydrogenase/reductase family
LSA1799	Isa1799	Putative transcriptional regulator, GntR family
LSA1800	Isa1800	Putative autotransport protein
LSA1801	Isa1801	Putative drug ABC exporter, membrane-spanning subunit
LSA1802	Isa1802	Putative drug ABC exporter, ATP-binding subunit
LSA1803	serS	Seryl-tRNA synthetase
LSA1804	Isa1804	Hypothetical protein
LSA1805	dgk	Deoxyguanosine kinase
LSA1806	Isa1806	Hypothetical protein
LSA1807	Isa1807	Hypothetical protein
LSA1808	Isa1808	Hypothetical protein
LSA1809	Isa1809	Hypothetical extracellular protein precursor
LSA1810	Isa1810	Hypothetical cell surface protein precursor
LSA1811	Isa1811	Hypothetical cell surface protein precursor
LSA1812	Isa1812	Putative surface polysaccharide deacetylase
LSA1813	Isa1813	Hypothetical protein
LSA1814	Isa1814	Hypothetical protein
LSA1815	Isa1815	Hypothetical cell surface protein precursor
LSA1816	Isa1816	Hypothetical cell surface protein precursor
LSA1817	lysP	Lysine:H(+) symporter
LSA1818	Isa1818	Hypothetical small peptide
LSA1819	Isa1819	Hypothetical cell surface protein precursor
LSA1820	Isa1820	Hypothetical cell surface protein precursor
LSA1821	Isa1821	Hypothetical cell surface protein precursor
LSA1822	Isa1822	Hypothetical protein
LSA1823	Isa1823	hypothetical protein
LSA1824	Isa1824	Putative N-acetyltransferase, GNAT family
LSA1825	Isa1825	Hypothetical protein
LSA1827	nhaC	Na(+)/H(+) antiporter
LSA1828	Isa1828	Hypothetical integral membrane protein
LSA1830	pox2	Pyruvate oxidase
LSA1831	Isa1831	Dyp-type peroxidase
LSA1832	Isa1832	Putative zinc-containing alcohol dehydrogenase (oxidoreductase)
LSA1833	Isa1833	Hypothetical integral membrane protein
LSA1834	Isa1834	Hypothetical integral membrane protein
LSA1835	Isa1835	Putative zinc-containing alcohol dehydrogenase (oxidoreductase)
LSA1836	Isa1836	Putative metal ion ABC transporter, membrane-spanning subunit
LSA1837	Isa1837	Putative metal ion ABC transporter, ATP-binding subunit
LSA1838	Isa1838	Putative metal ion ABC transporter, membrane-spanning subunit
LSA1839	Isa1839	Putative metal ion ABC transporter, substrate-binding lipoprotein precursor

LSA1840	Isa1840	Hypothetical cell surface protein precursor (with LPQTG sorting signal)
LSA1841	Isa1841	Putative ABC transporter, membrane-spanning/permease subunit
LSA1842	Isa1842	Putative ABC transporter, ATP-binding subunit
LSA1843	ogt	Methylated-DNA-protein-cysteine S-methyltransferase
LSA1844	aqpZ	Aquaporine Z
LSA1845	Isa1845	Hypothetical small protein
LSA1846	recQ	ATP-dependent DNA helicase (RecQ)
LSA1847	Isa1847	Hypothetical integral membrane protein
LSA1848	Isa1848	Hypothetical protein
LSA1849	Isa1849	Hypothetical small protein
LSA1850	Isa1850	Hypothetical protein
LSA1851	Isa1851	Hypothetical extracellular small protein precursor
LSA1852	Isa1852	Putative hydrolase, isochorismatase/nicotamidase family
LSA1853	Isa1853	Transcriptional regulator, AsnC/Lrp family
LSA1854	Isa1854	DNA alkylation repair enzyme
LSA1855	gpm5	Phosphoglycerate mutase
LSA1856	araA	L-arabinose isomerase
LSA1857	araD	L-ribulose 5-phosphate 4-epimerase
LSA1859	araB	L-ribulokinase
LSA1860	araT	D-Arabinose:H(+) symporter
LSA1861	araR	Arabinose operon transcriptional regulator, GntR family
LSA1862	Isa1862	Hypothetical small peptide
LSA1863	Isa1863	Hypothetical integral membrane protein
LSA1864	Isa1864	Hypothetical integral membrane protein
LSA1865	Isa1865	Hypothetical protein
LSA1866	Isa1866	Hypothetical membrane protein
LSA1867	Isa1867	Putative acetyltransferase, isoleucine patch superfamily
LSA1868	Isa1868	Putative transcriptional regulator, MerR family
LSA1869	Isa1869	Putative glycine/betaine/carnitine/choline ABC transporter, substrate binding and membrane-spanning subunits
LSA1870	Isa1870	Putative glycine betaine/carnitine/choline ABC transporter, ATP-binding subunit
LSA1871	gshR	Glutathione reductase
LSA1872	Isa1872	Putative drug:H(+) antiporter
LSA1873	Isa1873	Hypothetical protein
LSA1874	Isa1874	Putative transcriptional regulator, MarR family
LSA1875	Isa1875	Putative zinc-containing alcohol dehydrogenase (oxidoreductase)
LSA1876	Isa1876	Hypothetical integral membrane protein
LSA1877	Isa1877	Hypothetical protein
LSA1878	Isa1878	Putative drug resistance ABC transporter, two ATP-binding subunits
LSA1879	gidA	Cell division protein GidA
LSA1880	trmE	tRNA modification GTPase trmE
LSA1881	Isa1881	Putative single-stranded nucleic acid binding protein
LSA1882	pepF2	Oligoendopeptidase F2
LSA1883	Isa1883	Hypothetical small protein
LSA1884	oxaA2	Membrane protein chaperone oxaA
LSA1885	rnpA	Ribonuclease P protein component
LSA1886	rpmH	50S ribosomal protein L34
16S	rrs	16S ribosomal RNA
23S	rri	23S ribosomal RNA
5S	rrf	5S ribosomal RNA
Strain T332		
TNL0004	tnl0004	Putative pyridine nucleotide-disulfide oxidoreductase
TNL0006	tnl0006	Putative ferritin-like DNA-binding protein (oxidative damage protectant) (dps-type)
TNL0009	lacR	Lactose phosphotransferase system repressor, DeoR family
TNL0010	lacA	Galactose-6-phosphate isomerase, lacA subunit
TNL0011	lacB	Galactose-6-phosphate isomerase, lacB subunit

TNL0012	lacC	Tagatose-6-phosphate kinase
TNL0013	lacD	Tagatose 1,6-diphosphate aldolase
TNL0014	lacF	Lactose-specific phosphotransferase system, enzyme IIA
TNL0015	lacE	Lactose-specific phosphotransferase system, enzymes IIBC
TNL0016	lacG	6-phospho-beta-galactosidase
TNL0019	lacX	Putative aldose 1-epimerase, LacX protein
TNL0020	TnpA-ISLpl	Transposase of ISLpl1 (IS30 family)
PRV0001	repA	Initiation protein involved in replication
PRV0002	prv0002	Hypothetical protein
PRV0003	prv0003	Hypothetical protein (ORF-6)
PRV0004	HdsM	Type I restriction-modification DNA methylase
PRV0005	HdsS	Type I restriction-modification endonuclease, S subunit
PRV0006	prv0006	Putative site-specific tyrosine DNA recombinase (ORF-2)
PRV0007	HdsR	Type I restriction-modification endonuclease, R subunit
PRV0008	prv0008	Hypothetical protein (ORF-13)
PRV0009	prv0009	Putative DNA-binding protein, XRE family (ORF-12)
PRV0010	prv0010	Hypothetical phage-related protein (ORF-11)
PRV0011	prv0011	Site-specific tyrosine DNA recombinase (ORF-10)
PRV0012	prv0012	Hypothetical protein (ORF-8)

Strain LSA5

SKX0002	TnpA-ISLpl	Transposase of IS1380-like (C-terminal fragment), truncated
SKX0003	bcrD	Putative transport accessory protein
SKX0004	stxP	SakacinX inducing peptide
SKX0005	stxR	Two-component system, response regulator (Sakacin X production)
SKX0006	stxK	Two-component system, histidine sensor kinase (Sakacin X production)
SKX0007	stxT	Sakacin X ABC exporter, ATP-binding subunit
SKX0008	sakT1	Bacteriocin sakacin T precursor, alpha subunit
SKX0009	sakT2	Bacteriocin sakacin T precursor, beta subunit
SKX0010	sakTIM	Bacteriocin sakacin T immunity protein
SKX0011	sakX	Bacteriocin sakacin X precursor
SKX0012	sakXIM	Bacteriocin sakacin X immunity protein
SKX0013	skx0008	BcrD-like transport accessory protein
SKX0014	TnpA-ISLse	Transposase of ISLsa4 (IS110 family)
SKX0015	TnpA-ISLse	Transposase of ISLsa5 (IS30 family)
SKX0016	skx0016	Hypothetical protein
SKX0017	skx0017	Hypothetical protein
SKX0018	skx0018	Hypothetical protein
SKX0019	skx0019	Putative DNA-binding protein, XRE family

Strain Ib674

SKP0001	sppIP	Bacteriocin sakacin P inducing peptide
SKP0004	sppA	Bacteriocin sakacin P precursor
SKP0005	sppA	Bacteriocin sakacinP immunity protein, SpiA
SKP0006	sppT	Sakacin P ABC transporter
SKP0007	sppE	Sakacin P accessory transport protein
SKP0008	skp0008	Hypothetical small peptide

Strain Ib790

SKP0011	TnpA-IS116	Transposase (orfA) of IS1163 (IS3 family)
SKP0020	skp0020	Hypothetical small peptide (orf171)

Strain Ib706

SKA0001	ska0001	Hypothetical protein
SKA0002	saiA	Bacteriocin sakacin A immunity protein
SKA0003	sapA	Bacteriocin sakacin A precursor
SKA0004	ska0004	Hypothetical small peptide (ORF-4)
SKA0005	sapK	Two-component system, sensor histidine kinase SapK
SKA0006	sapR	Two-component system, response regulator SapR

SKA0007	sapT	Sakacin A ABC transporter
SKA0008	sapE	Sakacin A accessory transporter protein
Strain 2512		
SKG0001	skgI	Bacteriocin sakacin G immunity protein
SKG0002	skgA2	Bacteriocin sakacin G precursor, beta subunit
SKG0003	skgA1	Bacteriocin sakacin G precursor, alpha subunit
SKG0004	skgD	Sakacin G ABC transporter
Strain LTH673		
SKQ0001	sppQ	Bacteriocin sakacin Q preprotein
SKQ0002	spiQ	Bacteriocin sakacin Q immunity protein
SKQ0003	skq0003	Hypothetical protein (ORF-4) paralogous of LSA0567
SKQ0004	skq0004	Hypothetical protein (ORF-5) paralogous of LSA0568
SKQ0005	skq0005	Hypothetical protein (ORF-x) paralogous of LSA0570
Strain L45		
LCS0001	lcs0001	Plasmid replication associated protein
LCS0002	lcs0002	Hypothetical protein (orf116)
LCS0005	TnpA-IS121	Transposase of IS1516 (IS6 family)
LCS0009	lcs0009	ABC transporter, ATP-binding protein
LCS0010	lasX	Putative Rgg-type transcriptional regulator
LCS0011	lasA	Pre-lactocin S
LCS0012	lasM	Lantibiotic mersacidin modifying enzyme
LCS0013	lasN	Putative iron-sulfur flavoprotein
LCS0014	lasT	Lactocin S ABC transporter
LCS0015	lasU	Hypothetical protein
LCS0016	lasV	Hypothetical protein
LCS0017	lasP	Putative serine protease
LCS0018	lasJ	Hypothetical protein
LCS0019	lasW	Lactocin S ABC transporter permease component
Strain KG15		
GSU0001	dsrB	Cell-surface dextransucrase precursor (sucrose 6 -glycosyltransferase)
Strain Unk		
TET0001	tetM	Plasmidic tetracycline resistance protein
Possible Peptides		
LSA0075	Lsa75	Hypothetical small peptide
LSA0083	Lsa83	Hypothetical small peptide
LSA0121	Lsa121	Hypothetical small peptide
LSA0188	Lsa188	Hypothetical small peptide
LSA0267	Lsa267	Hypothetical small peptide
LSA0932	Lsa932	Hypothetical small peptide
LSA1184	Lsa1184	Hypothetical small peptide
LSA1270	Lsa1270	Hypothetical small peptide
LSA1483	Lsa1483	Hypothetical small peptide
LSA1733	Lsa1733	Hypothetical small peptide
LSA1826	Lsa1826	Hypothetical small peptide
Gray holes		
GHO0001		from bases 559050 to 559500 = 450 bp
GHO0002		from bases 579450 to 580150 = 600 bp
GHO0003		from bases 604100 to 604600 = 500 bp
GHO0004		from bases 723260 to 723600 = 340 bp
GHO0005		from bases 723650 to 724200 = 550 bp
GHO0006		from bases 1340250 to 1340720 = 480 bp
GHO0007		from bases 1478350 to 1478800 = 380 bp
GHO0008		from bases 1458315 to 1458800 = 500 bp
GHO0009		from bases 1542560 to 1543100 = 550 bp
GHO0010		from bases 1738550 to 1738980 = 450 bp

GHO0011 from bases 1839650 to 1840330 = 700 bp