

Table S1. List of the 2415 genes present in the five *eae*-positive, *stx*-negative O157 isolates that were subjected to whole genome sequencing. The locus tags of the reference sequence of *E. coli* O157:H7 strain Sakai (GenBank accession number NC_002695), the gene product, the absolute position in the genome, and the gene length in bp were given.

Locus tag	Product	Genome localization in strain Sakai (NC_002695)	Gene length in bp
ECs0002	bifunctional aspartokinase I/homoserine dehydrogenase I	354	2463
ECs0003	homoserine kinase	2818	933
ECs0004	threonine synthase	3751	1287
ECs0006	hypothetical protein	5700	777
ECs0007	inner membrane transport protein	6546	1431
ECs0008	transaldolase B	8255	954
ECs0009	molybdenum cofactor biosynthesis protein MogA	9323	588
ECs0010	hypothetical protein	9945	567
ECs0012	hypothetical protein	10660	714
ECs0013	hypothetical protein	11399	405
ECs0014	molecular chaperone DnaK	12180	1917
ECs0017	pH-dependent sodium/proton antiporter	16157	1167
ECs0026	30S ribosomal protein S20	25220	264
ECs0029	isoleucyl-tRNA synthetase	26802	2817
ECs0030	lipoprotein signal peptidase	29618	495
ECs0031	FKBP-type peptidyl-prolyl cis-trans isomerase	30200	450
ECs0032	4-hydroxy-3-methylbut-2-enyl diphosphate reductase	30651	951
ECs0034	dihydrodipicolinate reductase	32748	822
ECs0035	carbamoyl phosphate synthase small subunit	34025	1149
ECs0036	carbamoyl phosphate synthase large subunit	35191	3222
ECs0037	CaiF family transcriptional regulator	38673	396
ECs0039	carnitiny-CoA dehydratase	39783	786
ECs0041	crotonobetainyl-CoA:carnitine CoA-transferase	42304	1218
ECs0042	crotonobetainyl-CoA dehydrogenase	43650	1143
ECs0043	L-carnitine/gamma-butyrobetaine antiporter	44823	1515
ECs0044	electron transfer flavoprotein FixA	46816	771
ECs0045	electron transfer flavoprotein FixB	47601	942
ECs0046	oxidoreductase FixC	48593	1287
ECs0047	ferredoxin	49876	288
ECs0048	transporter	50221	1332
ECs0049	glutathione-regulated potassium-efflux system ancillary protein Keff	51660	531
ECs0050	glutathione-regulated potassium-efflux system protein KefC	52183	1863
ECs0051	dihydrofolate reductase	54237	480
ECs0055	ApaG protein	56204	378
ECs0056	dimethyladenosine transferase	56584	822
ECs0057	4-hydroxythreonine-4-phosphate dehydrogenase	57402	990
ECs0058	peptidyl-prolyl cis-trans isomerase SurA	58391	1287
ECs0059	organic solvent tolerance protein	59730	2355
ECs0060	Dna-J like membrane chaperone protein	62339	816
ECs0062	23S rRNA/tRNA pseudouridine synthase A	64619	660
ECs0065	L-ribulose-5-phosphate 4-epimerase	70786	696
ECs0066	L-arabinose isomerase	71681	1503
ECs0067	ribulokinase	73194	1701
ECs0069	hypothetical protein	76197	765
ECs0072	thiamine transporter substrate binding subunit	79316	984
ECs0075	isopropylmalate isomerase small subunit	83455	606
ECs0076	isopropylmalate isomerase large subunit	84071	1401
ECs0077	3-isopropylmalate dehydrogenase	85474	1092
ECs0078	2-isopropylmalate synthase	86565	1572
ECs0079	leu operon leader peptide	88229	87
ECs0082	acetolactate synthase 3 regulatory subunit	91962	492
ECs0084	DNA-binding transcriptional regulator FruR	92633	1005
ECs0085	cell division protein MraZ	94239	459
ECs0086	S-adenosyl-methyltransferase MraW	94699	942
ECs0087	cell division protein FtsL	95637	366
ECs0088	hypothetical protein	96018	1767
ECs0089	UDP-N-acetylmuramoylalanyl-D-glutamate--2, 6-diaminopimelate ligase	97771	1488
ECs0090	UDP-N-acetylmuramoyl-tripeptide--D-alanyl-D- alanine ligase	99255	1359
ECs0091	phospho-N-acetylmuramoyl-pentapeptide- transferase	100607	1083
ECs0092	UDP-N-acetylmuramoyl-L-alanyl-D-glutamate synthetase	101692	1317
ECs0093	cell division protein FtsW	103008	1245
ECs0094	undecaprenyldiphospho-muramoylpentapeptide beta-N- acetylglucosaminyltransferase	104249	1068
ECs0095	UDP-N-acetylmuramate--L-alanine ligase	105370	1476
ECs0096	D-alanine--D-alanine ligase	106838	921
ECs0097	cell division protein FtsQ	107760	831
ECs0098	cell division protein FtsA	108587	1263
ECs0099	cell division protein FtsZ	109910	1152
ECs0100	UDP-3-O-[3-hydroxymyristoyl] N-acetylglucosamine deacetylase	111162	918
ECs0101	SecA regulator SecM	112310	513
ECs0102	preprotein translocase subunit SecA	112884	2706

ECs0103	nucleoside triphosphate pyrophosphohydrolase	115649	399
ECs0105	zinc-binding protein	116138	198
ECs0106	hypothetical protein	116345	744
ECs0107	dephospho-CoA kinase	117088	621
ECs0108	guanosine 5'-monophosphate oxidoreductase	117933	1044
ECs0110	type IV pilin biogenesis protein	119011	1203
ECs0112	major pilin subunit	121598	441
ECs0114	N-acetyl-anhydromuranmyl-L-alanine amidase	123222	552
ECs0115	regulatory protein AmpE	123770	855
ECs0116	aromatic amino acid transporter	124667	1374
ECs0117	transcriptional regulator PdhR	126581	765
ECs0118	pyruvate dehydrogenase subunit E1	127506	2664
ECs0119	dihydrolipoamide acetyltransferase	130184	1893
ECs0120	dihydrolipoamide dehydrogenase	132284	1425
ECs0122	bifunctional aconitate hydratase 2/2-methylisocitrate dehydratase	135987	2598
ECs0123	hypothetical protein	138760	363
ECs0124	S-adenosylmethionine decarboxylase	139160	795
ECs0125	spermidine synthase	139970	867
ECs0126	hypothetical protein	140942	348
ECs0127	multicopper oxidase	141455	1551
ECs0128	glucose dehydrogenase	143207	2391
ECs0130	carbonic anhydrase	146380	663
ECs0132	hypothetical protein	148074	771
ECs0134	hypothetical protein	149453	1230
ECs0135	aspartate alpha-decarboxylase	150686	381
ECs0137	pantoate--beta-alanine ligase	152535	852
ECs0138	3-methyl-2-oxobutanoate hydroxymethyltransferase	153398	795
ECs0147	poly(A) polymerase	162051	1419
ECs0148	glutamyl-Q tRNA(Asp) synthetase	163508	897
ECs0149	RNA polymerase-binding transcription factor	164471	456
ECs0150	sugar fermentation stimulation protein A	165104	705
ECs0151	2'-5' RNA ligase	165823	531
ECs0152	ATP-dependent RNA helicase HrpB	166382	2475
ECs0153	penicillin-binding protein 1b	169052	2535
ECs0155	iron-hydroxamate transporter ATP-binding protein	174100	798
ECs0156	iron-hydroxamate transporter substrate-binding subunit	174897	891
ECs0160	iron-sulfur cluster insertion protein ErpA	180809	345
ECs0161	hypothetical protein	181200	624
ECs0162	vitamin B12-transporter protein BtuF	181861	801
ECs0163	5'-methylthioadenosine/S-adenosylhomocysteine nucleosidase	182654	699
ECs0165	serine endoprotease	185083	1425
ECs0166	carbohydrate diacid transcriptional activator CdaR	186662	1158
ECs0167	hypothetical protein	187908	387
ECs0168	2,3,4,5-tetrahydropyridine-2,6-carboxylate N-succinyltransferase	188609	825
ECs0169	P11 uridylyl-transferase	189464	2673
ECs0170	methionine aminopeptidase	192198	795
ECs0171	30S ribosomal protein S2	193360	726
ECs0172	elongation factor Ts	194343	852
ECs0173	uridylylase kinase	195341	726
ECs0174	ribosome recycling factor	196216	558
ECs0175	1-deoxy-D-xylulose 5-phosphate reductoisomerase	196865	1197
ECs0176	undecaprenyl pyrophosphate synthase	198247	762
ECs0177	CDP-diglyceride synthase	199021	858
ECs0178	zinc metallopeptidase RseP	199890	1353
ECs0179	outer membrane protein assembly factor YaeT	201272	2433
ECs0180	periplasmic chaperone	203825	486
ECs0181	UDP-3-O-[3-hydroxymyristoyl] glucosamine N-acyltransferase	204314	1026
ECs0182	(3R)-hydroxymyristoyl-ACP dehydratase	205444	456
ECs0183	UDP-N-acetylglucosamine acyltransferase	205903	789
ECs0184	lipid-A-disaccharide synthase	206691	1149
ECs0185	ribonuclease H11	207836	597
ECs0186	DNA polymerase III subunit alpha	208469	3483
ECs0187	acetyl-CoA carboxylase carboxyltransferase subunit alpha	211964	960
ECs0188	lysine decarboxylase 2	213022	2142
ECs0189	hypothetical protein	215220	390
ECs0191	Rho-binding antiterminator	217022	261
ECs0192	hypothetical protein	217635	459
ECs0194	lipoprotein involved with copper homeostasis and adhesion	218601	711
ECs0196	prolyl-tRNA synthetase	220388	1719
ECs0197	hypothetical protein	222217	708
ECs0198	outer membrane lipoprotein	222921	405
ECs0199	DL-methionine transporter substrate-binding subunit	223443	816
ECs0201	DL-methionine transporter ATP-binding protein	224944	1032
ECs0203	2,5-diketo-D-gluconate reductase B	232496	804
ECs0204	transcriptional regulator	233296	915
ECs0205	hypothetical protein	234451	801
ECs0208	hydroxyacylglutathione hydrolase	237577	756

ECs0209	hypothetical protein	238348	741
ECs0210	ribonuclease H	239085	468
ECs0247	C-lysozyme inhibitor	278411	474
ECs0248	acyl-CoA dehydrogenase	278927	2445
ECs0249	phosphoheptose isomerase	281611	579
ECs0250	amidotransferase	282294	768
ECs0251	hypothetical protein	283032	741
ECs0256	hypothetical protein	287928	786
ECs0258	DNA polymerase IV	288784	1056
ECs0263	peptide chain release factor-like protein	291589	501
ECs0265	xanthine-guanine phosphoribosyltransferase	293864	459
ECs0266	fermentation/respiration switch protein	294414	1245
ECs0267	DNA-binding transcriptional regulator Crl	295716	402
ECs0269	gamma-glutamyl kinase	297499	1104
ECs0270	gamma-glutamyl phosphate reductase	298614	1254
ECs0398	lac repressor	423204	1092
ECs0409	nucleoprotein/polynucleotide-associated enzyme	434970	540
ECs0410	esterase	435634	834
ECs0411	alcohol dehydrogenase	436560	1110
ECs0412	regulator protein FrmR	437704	297
ECs0419	taurine transporter substrate binding subunit	446234	963
ECs0421	taurine transporter subunit	447973	828
ECs0422	taurine dioxygenase	448797	852
ECs0423	delta-aminolevulinic acid dehydratase	449755	975
ECs0425	DNA-binding transcriptional regulator	454240	669
ECs0426	beta-lactam binding protein AmpH	454909	1158
ECs0429	hypothetical protein	458804	309
ECs0430	hypothetical protein	459240	345
ECs0431	D-alanyl-alanine synthetase A	459608	1095
ECs0432	hypothetical protein	461165	261
ECs0436	hypothetical protein	465543	459
ECs0437	pyrroline-5-carboxylate reductase	464614	810
ECs0438	shikimate kinase	466184	525
ECs0439	hypothetical protein	466758	192
ECs0440	hypothetical protein	467207	678
ECs0441	hypothetical protein	467956	285
ECs0445	recombination associated protein	471194	912
ECs0446	MFS transport protein AraJ	473281	1269
ECs0447	exonuclease SbcC	474591	3144
ECs0448	exonuclease SbcD	477731	1203
ECs0449	transcriptional regulator PhoB	479123	690
ECs0450	phosphate regulon sensor protein	479870	1296
ECs0451	branched-chain amino acid ABC transporter substrate-binding protein	481572	1320
ECs0452	permease	482967	1374
ECs0455	ACP phosphodiesterase	487967	582
ECs0456	S-adenosylmethionine--tRNA ribosyltransferase-isomerase	488641	1071
ECs0457	queuine tRNA-ribosyltransferase	489766	1128
ECs0458	preprotein translocase subunit YajC	490916	333
ECs0460	preprotein translocase subunit SecF	493134	972
ECs0463	hypothetical protein	494860	348
ECs0464	nucleoside-specific channel-forming protein Tsx	495384	885
ECs0465	hypothetical protein	496567	540
ECs0466	transcriptional regulator NrdR	497257	450
ECs0467	bifunctional diaminohydroxyphosphoribosylaminopyrimidine deaminase/5-amino-6-(5-phosphoribosylamino)u	497710	1104
ECs0468	6,7-dimethyl-8-ribityllumazine synthase	498902	471
ECs0469	transcription antitermination protein NusB	499392	420
ECs0470	thiamine monophosphate kinase	499889	978
ECs0471	phosphatidylglycerophosphatase A	500844	516
ECs0473	NAD(P)H-dependent xylose reductase	503339	975
ECs0474	1-deoxy-D-xylulose-5-phosphate synthase	504368	1863
ECs0475	geranyltransferase	506255	900
ECs0476	exodeoxyribonuclease VII small subunit	507154	243
ECs0477	thiamine biosynthesis protein Thil	507602	1449
ECs0478	DJ-1 family protein	509104	591
ECs0479	2-dehydropantoate 2-reductase	509657	912
ECs0480	nucleotide-binding protein	510736	492
ECs0481	transporter	511355	1365
ECs0482	protoheme IX farnesyltransferase	512868	891
ECs0483	cytochrome o ubiquinol oxidase subunit IV	513770	330
ECs0484	cytochrome o ubiquinol oxidase subunit III	514099	615
ECs0485	cytochrome o ubiquinol oxidase subunit I	514703	1992
ECs0486	cytochrome o ubiquinol oxidase subunit II	516716	948
ECs0487	muropeptide transporter	518123	1476
ECs0488	hypothetical protein	519642	579
ECs0489	transcriptional regulator BolA	520525	318
ECs0490	trigger factor	521186	1299
ECs0491	ATP-dependent Clp protease proteolytic subunit	522729	624

ECs0492	ATP-dependent protease ATP-binding protein ClpX	523478	1275
ECs0494	transcriptional regulator HU subunit beta	527503	273
ECs0495	peptidyl-prolyl cis-trans isomerase	527967	1872
ECs0496	hypothetical protein	529989	372
ECs0497	hypothetical protein	530466	399
ECs0498	queuosine biosynthesis protein QueC	530916	696
ECs0499	hypothetical protein	531676	1701
ECs0500	hypothetical protein	533464	831
ECs0501	LRP-like transcriptional regulator	534446	459
ECs0503	multidrug transporter membrane\ATP-binding components	536699	1782
ECs0504	nitrogen regulatory protein P-II 2	538661	339
ECs0505	ammonium transporter	539029	1287
ECs0506	acyl-CoA thioesterase	540364	861
ECs0507	glycoprotein/polysaccharide metabolism	541457	558
ECs0508	hypothetical protein	542047	390
ECs0509	hypothetical protein	542737	354
ECs0511	hypothetical protein	544846	471
ECs0513	hemolysin expression-modulating protein	546155	219
ECs0514	hypothetical protein	546399	375
ECs0515	acridine efflux pump	547319	3150
ECs0516	acridine efflux pump	550491	1194
ECs0517	AcrR family transcriptional regulator	551826	648
ECs0520	primosomal replication protein N"	556180	528
ECs0521	hypothetical protein	556777	378
ECs0522	adenine phosphoribosyltransferase	557307	552
ECs0524	hypothetical protein	559971	330
ECs0525	recombination protein RecR	560300	606
ECs0526	heat shock protein 90	561015	1875
ECs0527	adenylate kinase	563070	645
ECs0528	ferrochelatase	563846	963
ECs0529	acetyl esterase	564805	960
ECs0530	inosine-guanosine kinase	565916	1305
ECs0531	cation:proton antiport protein	567353	1677
ECs0532	fosmidomycin resistance protein	569266	1221
ECs0533	bifunctional UDP-sugar hydrolase/5'-nucleotidase periplasmic	570704	1653
ECs0534	hypothetical protein	572393	480
ECs0535	ligase	573076	795
ECs0538	glutaminase	577330	933
ECs0539	amino acid/amine transport protein	578265	1293
ECs0545	DNA-binding transcriptional regulator CueR	605156	408
ECs0552	protease	608653	918
ECs0553	ABC transporter ATP-binding protein	609716	678
ECs0554	metal resistance protein	610380	780
ECs0555	thioredoxin-like protein	611222	855
ECs0556	short chain dehydrogenase	612137	810
ECs0557	ABC transporter ATP-binding protein	613530	687
ECs0558	multifunctional acyl-CoA thioesterase I/protease I/lysophospholipase L1	612936	627
ECs0559	oxidoreductase	614213	2415
ECs0564	tRNA 2-selenouridine synthase	622725	1095
ECs0565	AIS family transcriptional regulator	623888	927
ECs0566	ureidoglycolate hydrolase	625044	483
ECs0567	DNA-binding transcriptional repressor AlIR	625604	816
ECs0568	glyoxylate carboligase	626509	1782
ECs0569	hydroxypyruvate isomerase	628303	777
ECs0570	tartronic semialdehyde reductase	629180	879
ECs0576	glycerate kinase	634396	1146
ECs0577	hypothetical protein	635769	786
ECs0579	ureidoglycolate dehydrogenase	637822	1050
ECs0580	membrane protein FdrA	639188	1668
ECs0581	hypothetical protein	641123	1002
ECs0582	carboxylase	642135	816
ECs0583	carbamate kinase	642947	894
ECs0584	phosphoribosylaminoimidazole carboxylase ATPase subunit	643979	1068
ECs0585	phosphoribosylaminoimidazole carboxylase catalytic subunit	645043	510
ECs0586	UDP-2,3-diacetylglucosamine hydrolase	645670	723
ECs0587	peptidyl-prolyl cis-trans isomerase B	646395	495
ECs0589	hypothetical protein	648484	522
ECs0590	hypothetical protein	649113	213
ECs0591	bifunctional 5,10-methylene-tetrahydrofolate dehydrogenase/ 5,10-methylene-tetrahydrofolate cyclohydrolase	649327	867
ECs0599	hypothetical protein	658248	891
ECs0600	bacteriophage N4 receptor, outer membrane subunit	659139	2973
ECs0609	CusR family transcriptional regulator	677420	684
ECs0610	copper/silver efflux system outer membrane protein CusC	678260	1383
ECs0611	copper-binding protein	679666	333
ECs0612	copper/silver efflux system membrane fusion protein CusB	680014	1224
ECs0613	inner membrane component for iron transport	681249	3138
ECs0616	dihydropteridine reductase	687287	654

ECs0617	hypothetical protein	688034	369
ECs0618	hypothetical protein	688467	249
ECs0623	outer membrane receptor FepA	691910	2241
ECs0625	enterobactin synthase subunit F	695813	3882
ECs0627	iron-enterobactin transporter ATP-binding protein	701040	816
ECs0628	iron-enterobactin transporter permease	701852	993
ECs0629	iron-enterobactin transporter membrane protein	702841	1005
ECs0630	enterobactin exporter EntS	703956	1251
ECs0631	iron-enterobactin transporter periplasmic binding protein	705210	957
ECs0632	isochorismate synthase	706355	1176
ECs0633	enterobactin synthase subunit E	707540	1611
ECs0634	2,3-dihydro-2,3-dihydroxybenzoate synthetase	709164	858
ECs0635	2,3-dihydroxybenzoate-2,3-dehydrogenase	710021	747
ECs0636	hypothetical protein	710770	414
ECs0637	carbon starvation protein	711364	2106
ECs0638	hypothetical protein	713858	1089
ECs0639	aminotransferase	715055	1161
ECs0641	hypothetical protein	716818	1221
ECs0643	disulfide isomerase/thiol-disulfide oxidase	719297	747
ECs0644	alkyl hydroperoxide reductase	720415	564
ECs0645	alkyl hydroperoxide reductase	721077	1596
ECs0646	hypothetical protein	722793	429
ECs0649	nucleoside diphosphate kinase regulator	724911	411
ECs0651	hypothetical protein	726471	1464
ECs0652	triphosphoribosyl-dephospho-CoA synthase	727985	879
ECs0653	2-(5"-triphosphoribosyl)-3'-dephosphocoenzyme-A synthase	728838	552
ECs0654	citrate lyase subunit alpha	729393	1533
ECs0655	citrate lyase subunit beta	730936	909
ECs0656	citrate lyase subunit gamma	731841	297
ECs0658	sensor-type protein	733590	1659
ECs0659	two-component response regulator DpiA	735217	681
ECs0660	C4-dicarboxylate transporter DcuC	735938	1386
ECs0662	cold shock protein CspE	738647	210
ECs0663	camphor resistance protein CrcB	738910	384
ECs0665	twin arginine translocase E	740303	204
ECs0666	lipoyl synthase	740607	966
ECs0668	lipoate-protein ligase B	742994	642
ECs0669	hypothetical protein	743736	264
ECs0670	D-alanyl-D-alanine carboxypeptidase	744109	1212
ECs0671	rare lipoprotein A	745460	1089
ECs0673	penicillin-binding protein 2	747674	1902
ECs0674	rRNA large subunit methyltransferase	749606	468
ECs0675	hypothetical protein	750077	318
ECs0676	PhpB	750654	612
ECs0677	nicotinic acid mononucleotide adenyltransferase	751289	642
ECs0678	DNA polymerase III subunit delta	751932	1032
ECs0679	LPS-assembly lipoprotein RlpB	752963	582
ECs0680	leucyl-tRNA synthetase	753559	2583
ECs0681	hypothetical protein	756377	483
ECs0690	ribonucleoside hydrolase 1	764837	936
ECs0691	glutamate/aspartate ABC transporter ATP-binding protein	765890	726
ECs0692	glutamate/aspartate transport system permease	766615	675
ECs0693	glutamate/aspartate transport system permease	767289	741
ECs0694	glutamate and aspartate transporter subunit	768199	909
ECs0696	transporter	771067	879
ECs0697	metalloprotease	772035	468
ECs0698	ATP-binding protein in pho regulon	772499	1080
ECs0699	(dimethylallyl)adenosine tRNA methylthiotransferase	773692	1425
ECs0700	2-octaprenyl-3-methyl-6-methoxy-1,4-benzoquinol hydroxylase	775262	1176
ECs0705	UMP phosphatase	779597	753
ECs0706	transcriptional repressor of N-acetylglucosamine operon	780397	1221
ECs0707	N-acetylglucosamine-6-phosphate deacetylase	781626	1149
ECs0708	glucosamine-6-phosphate deaminase	782834	801
ECs0710	glutaminyl-tRNA synthetase	786116	1665
ECs0713	hypothetical protein	789814	327
ECs0714	ferric uptake regulator	790224	447
ECs0715	flavodoxin FldA	790959	531
ECs0716	LexA regulated protein	791629	363
ECs0717	hypothetical protein	792062	765
ECs0718	replication initiation regulator SeqA	793011	546
ECs0719	phosphoglucomutase	793582	1641
ECs0723	sensor protein KdpD	800157	2685
ECs0724	potassium-transporting ATPase subunit C	802834	573
ECs0726	potassium-transporting ATPase subunit A	805486	1674
ECs0727	potassium-transporting ATPase subunit F	807159	90
ECs0728	hypothetical protein	807561	207
ECs0732	hypothetical protein	815647	510

ECs0733	deoxyribodipyrimidine photolyase	816153	1419
ECs0734	transporter	817721	1482
ECs0735	hydrolase-oxidase	819473	744
ECs0736	carboxylase	820239	657
ECs0737	carboxylase	820889	933
ECs0738	LamB/YcsF family protein	821811	735
ECs0745	type II citrate synthase	829830	1284
ECs0746	succinate dehydrogenase cytochrome b556 large membrane subunit	831822	390
ECs0747	succinate dehydrogenase cytochrome b556 small membrane subunit	832205	348
ECs0748	succinate dehydrogenase flavoprotein subunit	832552	1767
ECs0749	succinate dehydrogenase iron-sulfur subunit	834334	717
ECs0751	2-oxoglutarate dehydrogenase E1	835351	2802
ECs0752	dihydrolipoamide succinyltransferase	838167	1218
ECs0753	succinyl-CoA synthetase subunit beta	839478	1167
ECs0754	succinyl-CoA synthetase subunit alpha	840644	870
ECs0768	cytochrome d terminal oxidase polypeptide subunit I	855961	1572
ECs0769	cytochrome d terminal oxidase polypeptide subunit II	857548	1140
ECs0770	hypothetical protein	858815	294
ECs0771	acyl-CoA thioester hydrolase	859258	405
ECs0772	colicin uptake protein TolQ	859659	693
ECs0773	colicin uptake protein TolR	860355	429
ECs0775	translocation protein TolB	862165	1293
ECs0777	tol-pal system protein YbgF	864023	792
ECs0851	kinase inhibitor protein	929799	477
ECs0852	adenosylmethionine-8-amino-7-oxononanoate aminotransferase	930334	1290
ECs0853	biotin synthase	931710	1041
ECs0854	8-amino-7-oxononanoate synthase	932747	1155
ECs0855	biotin biosynthesis protein BioC	933888	756
ECs0856	dithiobiotin synthetase	934636	678
ECs0857	excinuclease ABC subunit B	935892	2022
ECs0858	structural protein	938104	909
ECs0859	molybdenum cofactor biosynthesis protein A	939409	990
ECs0860	molybdenum cofactor biosynthesis protein B	940420	513
ECs0861	molybdenum cofactor biosynthesis protein MoaC	940935	486
ECs0862	molybdopterin synthase small subunit	941413	246
ECs0863	molybdopterin guanine dinucleotide biosynthesis protein MoaE	941660	453
ECs0864	hypothetical protein	942248	705
ECs0866	hypothetical protein	943909	957
ECs0867	cardiolipin synthase 2	944865	1242
ECs0869	hypothetical protein	946997	411
ECs0870	hypothetical protein	947369	1107
ECs0871	hypothetical protein	948486	1134
ECs0872	ABC transporter ATP-binding protein	949612	1737
ECs0873	hypothetical protein	951341	999
ECs0874	DNA-binding transcriptional regulator	952339	684
ECs0875	ATP-dependent RNA helicase RhIE	953239	1368
ECs0878	glycosyl transferase family protein	959688	963
ECs0879	hypothetical protein	960791	1086
ECs0880	hypothetical protein	962105	261
ECs0881	hypothetical protein	962630	267
ECs0882	hydroxylase	962972	687
ECs0885	SAM-dependent methyltransferase	966702	1008
ECs0887	glutamine ABC transporter ATP-binding protein	970048	723
ECs0888	glutamine ABC transporter permease	970767	660
ECs0889	glutamine ABC transporter periplasmic protein	971564	747
ECs0890	DNA starvation/stationary phase protection protein Dps	972714	504
ECs0892	outer membrane protein X	974756	516
ECs0893	hypothetical protein	975320	1584
ECs0894	manganese transport regulator MntR	977489	468
ECs0896	hypothetical protein	979129	921
ECs0897	ABC transporter ATP-binding protein	980268	1593
ECs0899	hypothetical protein	983445	816
ECs0902	pyruvate formate-lyase 2 activating enzyme	986843	900
ECs0903	fructose-6-phosphate aldolase	987873	663
ECs0904	molybdopterin biosynthesis protein MoeB	988714	750
ECs0905	molybdopterin biosynthesis protein MoeA	989463	1236
ECs0909	transporter	993745	1539
ECs0910	transport system permease	995301	921
ECs0911	transport system permease	996224	912
ECs0912	hypothetical protein	997313	2349
ECs0915	ribosomal protein S12 methylthiotransferase	1001998	1326
ECs0916	biofilm formation regulatory protein BssR	1003536	384
ECs0917	dehydrogenase	1004030	1116
ECs0919	D-alanyl-D-alanine carboxypeptidase	1006014	1203
ECs0920	DeoR family transcriptional regulator	1007263	759
ECs0921	undecaprenyl pyrophosphate phosphatase	1008079	597
ECs0923	hypothetical protein	1010233	285

ECs0924	hypothetical protein	1010603	816
ECs0925	DeoR family transcriptional regulator	1011418	1209
ECs0926	DeoR family transcriptional regulator	1012710	537
ECs0927	hypothetical protein	1013421	1686
ECs0928	hypothetical protein	1015376	378
ECs0929	glutaredoxin	1015783	258
ECs0930	hypothetical protein	1016200	288
ECs0931	nitroreductase A	1016471	723
ECs0932	ribosomal protein S6 modification protein	1017254	903
ECs0933	sensory transduction regulator	1018244	477
ECs0934	putrescine ABC transporter periplasmic-binding protein	1019071	1113
ECs0935	putrescine transporter ATP-binding protein	1020278	1134
ECs0937	putrescine ABC transporter membrane protein	1022371	846
ECs0938	hypothetical protein	1023276	489
ECs0944	arginine transporter permease ArtM	1029463	669
ECs0945	arginine transporter permease ArtQ	1030131	717
ECs0946	arginine ABC transporter substrate-binding protein	1030854	732
ECs0947	arginine transporter ATP-binding protein	1031603	729
ECs0952	hypothetical protein	1035705	324
ECs0953	regulator	1036025	831
ECs0954	nucleotide di-P-sugar epimerase or dehydratase	1036852	1050
ECs0955	dTDP-glucose enzyme	1037964	1431
ECs0956	L-threonine aldolase	1039405	1002
ECs0957	pyruvate dehydrogenase	1040443	1719
ECs0959	hydroxylamine reductase	1043274	1653
ECs0960	surface protein	1045070	900
ECs0961	aquaporin Z	1046427	696
ECs0962	hypothetical protein	1047548	1659
ECs0963	hypothetical protein	1049203	993
ECs0966	stationary phase/starvation inducible regulatory protein CspD	1053441	225
ECs0967	ATP-dependent Clp protease adaptor protein ClpS	1053988	321
ECs0968	ATP-dependent Clp protease ATP-binding protein	1054339	2277
ECs0969	translation initiation factor IF-1	1057302	219
ECs0970	leucyl/phenylalanyl-tRNA--protein transferase	1057805	705
ECs0971	cysteine/glutathione ABC transporter membrane/ATP-binding protein	1058551	1722
ECs0972	cysteine/glutathione ABC transporter membrane/ATP-binding protein	1060273	1767
ECs0973	thioredoxin reductase	1062162	966
ECs0974	leucine-responsive transcriptional regulator	1063672	495
ECs0976	outer-membrane lipoprotein carrier protein	1068481	615
ECs0977	recombination factor protein RarA	1069106	1344
ECs0978	seryl-tRNA synthetase	1070540	1293
ECs0980	anaerobic dimethyl sulfoxide reductase subunit B	1074526	618
ECs0981	anaerobic dimethyl sulfoxide reductase subunit C	1075145	864
ECs0983	MFS family transporter protein	1076985	1149
ECs0985	pyruvate formate lyase-activating enzyme 1	1079983	741
ECs0986	formate acetyltransferase 1	1080915	2283
ECs0987	formate transporter	1083252	858
ECs0988	hypothetical protein	1084515	1761
ECs0989	hypothetical protein	1086405	693
ECs0990	phosphoserine aminotransferase	1087296	1089
ECs0991	3-phosphoshikimate 1-carboxyvinyltransferase	1088455	1284
ECs0992	heat shock protein	1089883	789
ECs0993	cytidylate kinase	1090844	684
ECs0994	30S ribosomal protein S1	1091638	1674
ECs0995	integration host factor subunit beta	1093471	285
ECs0996	hypothetical protein	1093962	2265
ECs0997	lipid transporter ATP-binding protein/permease	1096263	1749
ECs0998	tetraacyldisaccharide 4'-kinase	1098008	987
ECs0999	hypothetical protein	1099031	1233
ECs1000	hypothetical protein	1100315	183
ECs1001	3-deoxy-manno-octulosonate cytidyltransferase	1100494	747
ECs1002	hypothetical protein	1101394	894
ECs1003	hypothetical protein	1102264	780
ECs1006	condesin subunit E	1105264	705
ECs1008	hypothetical protein	1110689	1848
ECs1009	hypothetical protein	1112717	549
ECs1010	hypothetical protein	1113292	648
ECs1011	aromatic amino acid aminotransferase	1113990	1191
ECs1013	asparaginyl-tRNA synthetase	1117056	1401
ECs1014	nicotinate phosphoribosyltransferase	1118625	1203
ECs1015	aminopeptidase	1120093	2613
ECs1017	alkanesulfonate transporter permease	1123512	792
ECs1018	alkanesulfonate monooxygenase	1124315	1146
ECs1020	NAD(P)H-dependent FMN reductase	1126409	576
ECs1030	hypothetical protein	1135423	543
ECs1031	hypothetical protein	1135962	1110
ECs1032	23S rRNA m(2)G2445 methyltransferase	1137315	2109

ECs1034	paraquat-inducible protein A	1141472	1254
ECs1035	paraquat-inducible protein B	1142730	1641
ECs1036	hypothetical protein	1144382	549
ECs1037	ribosome modulation factor	1145186	168
ECs1038	3-hydroxydecanoyl-ACP dehydratase	1145423	519
ECs1040	hypothetical protein	1147956	453
ECs1041	outer membrane protein A	1148484	1041
ECs1042	SOS cell division inhibitor	1149881	510
ECs1043	hypothetical protein	1150609	630
ECs1044	hypothetical protein	1151201	2163
ECs1045	hypothetical protein	1153373	447
ECs1047	methylglyoxal synthase	1156028	459
ECs1048	hypothetical protein	1156582	663
ECs1049	hypothetical protein	1157417	414
ECs1050	heat shock protein HspQ	1157875	318
ECs1053	sulfur transfer protein TusE	1159810	330
ECs1054	hypothetical protein	1160230	660
ECs1128	hydrogenase-1 small subunit	1211259	1119
ECs1129	hydrogenase 1 large subunit	1212374	1794
ECs1130	hydrogenase 1 b-type cytochrome subunit	1214186	708
ECs1131	hydrogenase 1 maturation protease	1214890	588
ECs1132	hydrogenase-1 operon protein HyaE	1215474	399
ECs1133	hydrogenase-1 operon protein HyaF	1215869	858
ECs1135	third cytochrome oxidase subunit II	1218416	1137
ECs1136	phosphoanhydride phosphorylase	1219737	1305
ECs1144	cold shock-like protein	1229317	213
ECs1145	cold shock protein CspG	1229815	213
ECs1149	TMAO reductase system periplasmic protein TorT	1234614	1029
ECs1150	DNA-binding transcriptional regulator TorR	1235615	693
ECs1151	trimethylamine N-oxide reductase cytochrome c-type subunit	1236437	1173
ECs1152	trimethylamine N-oxide reductase subunit	1237609	2547
ECs1153	chaperone protein TorD	1240152	600
ECs1154	chaperone-modulator protein CbpM	1240905	306
ECs1155	curved DNA-binding protein CbpA	1241210	921
ECs1158	glucose-1-phosphatase/inositol phosphatase	1243938	1242
ECs1159	hypothetical protein	1245217	228
ECs1252	transporter	1309331	1329
ECs1253	hypothetical protein	1310680	495
ECs1254	hypothetical protein	1311185	591
ECs1257	synthetase	1312991	696
ECs1258	hypothetical protein	1313683	1095
ECs1261	major sodium/proline symporter	1320125	1509
ECs1264	hypothetical protein	1325195	1128
ECs1265	hypothetical protein	1326328	1272
ECs1412	oxidoreductase component	1458780	555
ECs1414	protein CsgG	1459991	834
ECs1415	curli assembly protein CsgF	1460851	417
ECs1416	curli assembly protein CsgE	1461292	390
ECs1417	DNA-binding transcriptional regulator CsgD	1461686	651
ECs1419	curlin minor subunit	1463090	456
ECs1420	cryptic curlin major subunit	1463586	459
ECs1421	autoagglutination protein	1464103	333
ECs1423	hypothetical protein	1464962	534
ECs1426	glucan biosynthesis protein G	1468476	1536
ECs1427	glucosyltransferase MdoH	1469974	2574
ECs1429	hypothetical protein	1472948	375
ECs1431	hypothetical protein	1473405	972
ECs1432	lipid A biosynthesis lauroyl acyltransferase	1474803	921
ECs1433	hypothetical protein	1475948	1053
ECs1434	hypothetical protein	1477042	576
ECs1435	cytochrome	1477621	567
ECs1437	N-methyltryptophan oxidase	1478609	1119
ECs1439	DNA damage-inducible protein I	1480386	246
ECs1440	dihydroorotase	1480705	1047
ECs1441	hypothetical protein	1481857	561
ECs1442	glutaredoxin	1482551	648
ECs1443	multidrug resistance protein MdtH	1483262	1209
ECs1444	ribosomal-protein-S5-alanine N-acetyltransferase	1484706	585
ECs1445	hypothetical protein	1485301	648
ECs1446	hypothetical protein	1485950	924
ECs1447	hypothetical protein	1486983	1536
ECs1449	anti-sigma-28 factor FlgM	1488979	294
ECs1450	flagellar basal body P-ring biosynthesis protein FlgA	1489348	660
ECs1451	flagellar basal-body rod protein FlgB	1490162	417
ECs1452	flagellar basal body rod protein FlgC	1490582	405
ECs1453	flagellar basal body rod modification protein	1490998	696
ECs1454	flagellar hook protein FlgE	1491718	1206

ECs1456	flagellar basal body rod protein FlgG	1493836	783
ECs1457	flagellar basal body L-ring protein	1494671	699
ECs1458	flagellar basal body P-ring protein	1495378	1101
ECs1459	flagellar rod assembly protein/muramidase FlgJ	1496478	942
ECs1460	flagellar hook-associated protein FlgK	1497485	1644
ECs1461	flagellar hook-associated protein FlgL	1499140	954
ECs1462	ribonuclease E	1500288	3186
ECs1463	hypothetical protein	1503554	375
ECs1465	Maf-like protein	1505106	585
ECs1467	50S ribosomal protein L32	1506462	174
ECs1468	glycerol-3-phosphate acyltransferase PlsX	1506716	1071
ECs1470	ACP S-malonyltransferase	1508823	930
ECs1471	3-ketoacyl-ACP reductase	1509765	735
ECs1472	acyl carrier protein	1510710	237
ECs1473	3-oxoacyl-ACP synthase	1511034	1242
ECs1476	thymidylate kinase	1514219	642
ECs1477	DNA polymerase III subunit delta'	1514857	1005
ECs1478	metallobased hydrolase	1515872	798
ECs1479	PTS system glucose-specific transporter subunit IIBC	1516964	1434
ECs1480	ferric-rhodotorulic acid outer membrane transporter	1518457	2190
ECs1481	purine nucleoside phosphoramidase	1520974	378
ECs1482	hypothetical protein	1521354	378
ECs1483	hypothetical protein	1521745	642
ECs1484	thiamine kinase	1522367	825
ECs1485	beta-hexosaminidase	1523202	1026
ECs1486	hypothetical protein	1524250	543
ECs1488	hypothetical protein	1526723	540
ECs1489	hypothetical protein	1527324	633
ECs1491	hypothetical protein	1528537	963
ECs1492	transcription-repair coupling factor	1529643	3447
ECs1494	outer membrane-specific lipoprotein transporter subunit LolC	1534552	1200
ECs1495	lipoprotein transporter ATP-binding protein	1535744	702
ECs1496	outer membrane-specific lipoprotein transporter subunit LolE	1536445	1245
ECs1497	N-acetyl-D-glucosamine kinase	1537718	912
ECs1498	NAD-dependent deacetylase	1538645	822
ECs1499	spermidine/putrescine ABC transporter substrate-binding protein	1539622	1047
ECs1500	spermidine/putrescine ABC transporter membrane protein	1540665	795
ECs1668	cell division topological specificity factor MinE	1665766	267
ECs1669	cell division inhibitor MinD	1666036	813
ECs1670	septum formation inhibitor	1666872	696
ECs1671	hypothetical protein	1668087	369
ECs1674	hypothetical protein	1669200	294
ECs1675	hypothetical protein	1669565	660
ECs1676	hypothetical protein	1670316	447
ECs1678	DNA polymerase V subunit UmuD	1672253	420
ECs1680	disulfide bond formation protein B	1673986	531
ECs1686	potassium/proton antiporter	1681862	1737
ECs1687	murein transglycosylase E	1684594	726
ECs1688	L,D-carboxypeptidase A	1683694	915
ECs1832	tryptophan synthase subunit alpha	1817436	807
ECs1834	bifunctional indole-3-glycerol phosphate synthase/phosphoribosylanthranilate isomerase	1819447	1362
ECs1835	bifunctional glutamine amidotransferase/anthranilate phosphoribosyltransferase	1820809	1596
ECs1836	anthranilate synthase component I	1822404	1563
ECs1841	23S rRNA pseudouridylylase synthase B	1827562	873
ECs1842	cob(II)yrinic acid a,c-diamide adenosyltransferase	1828474	591
ECs1843	short chain dehydrogenase	1829061	759
ECs1844	periplasmic protease	1830039	1050
ECs1845	hypothetical protein	1831124	252
ECs1849	aconitate hydratase	1836538	2676
ECs1850	GTP cyclohydrolase II	1839277	591
ECs1851	phosphatidylglycerophosphatase B	1840037	765
ECs1852	hypothetical protein	1840950	309
ECs1854	orotidine 5'-phosphate decarboxylase	1842627	738
ECs1855	translation initiation factor Sui1	1843361	330
ECs1856	lipoprotein	1843816	219
ECs1859	exoribonuclease II	1847683	1935
ECs1861	enoyl-ACP reductase	1850956	789
ECs1867	peptide ABC transporter ATP-binding protein	1859761	807
ECs1868	peptide ABC transporter ATP-binding protein	1860569	993
ECs1869	peptide transport permease	1861561	891
ECs1870	peptide transport permease	1862438	966
ECs1871	peptide transport-like protein	1863400	1644
ECs1880	phage shock protein operon transcriptional activator	1874754	978
ECs1882	phage shock protein B	1876620	225
ECs1883	PspC family transcriptional regulator	1876844	360
ECs1884	peripheral inner membrane phage-shock protein	1877212	222
ECs1885	thiosulfate:cyanide sulfurtransferase	1877508	315

ECs1900	hypothetical protein	1891931	1398
ECs1903	thiol peroxidase	1896119	507
ECs1904	muconate cycloisomerase I	1896744	966
ECs1905	murein peptide amidase A	1897684	789
ECs1911	transport periplasmic protein	1902585	1614
ECs1912	hypothetical protein	1904249	1032
ECs1914	universal stress protein UspE	1905831	951
ECs1915	fumarate/nitrate reduction transcriptional regulator	1906933	753
ECs1924	hypothetical protein	1915451	564
ECs1926	zinc transporter	1917522	984
ECs1927	ATP-dependent RNA helicase DbpA	1918983	1374
ECs1997	filament protein	1972708	435
ECs2000	oxidoreductase	1974762	3525
ECs2001	heat-inducible protein	1978823	423
ECs2002	D-lactate dehydrogenase	1979356	990
ECs2008	oxidoreductase	1990053	861
ECs2014	azoreductase	1998085	606
ECs2023	cytochrome b561	2008411	531
ECs2028	hypothetical protein	2012797	1344
ECs2029	glucan biosynthesis protein D	2014365	1656
ECs2030	hypothetical protein	2015941	204
ECs2031	hypothetical protein	2016160	225
ECs2032	ribosomal-protein-serine N-acetyltransferase	2016447	297
ECs2034	potassium-tellurite ethidium and proflavin transporter	2018082	993
ECs2035	tellurite resistance protein TehB	2019071	594
ECs2036	hypothetical protein	2019968	669
ECs2037	hypothetical protein	2021935	537
ECs2039	collagenase	2022502	2004
ECs2040	hypothetical protein	2024597	231
ECs2044	transporter	2027417	1146
ECs2045	ABC transporter ATP-binding protein	2028580	1014
ECs2048	gamma-aminobutyraldehyde dehydrogenase	2031341	1425
ECs2049	hypothetical protein	2033104	222
ECs2050	hypothetical protein	2033411	234
ECs2051	hypothetical protein	2033645	450
ECs2052	resistance protein	2034091	519
ECs2055	outer membrane receptor for iron transport	2036726	2103
ECs2056	receptor	2039070	1062
ECs2067	hypothetical protein	2054201	894
ECs2069	cryptic nitrate reductase 2 subunit delta	2055850	696
ECs2072	nitrite extrusion protein 2	2061908	1389
ECs2077	hypothetical protein	2067710	882
ECs2079	nitrate-inducible formate dehydrogenase-N iron-sulfur beta subunit	2071883	885
ECs2080	formate dehydrogenase-N subunit gamma	2072760	654
ECs2081	hypothetical protein	2073641	285
ECs2082	alcohol dehydrogenase	2074071	1011
ECs2084	30S ribosomal subunit S22	2077069	138
ECs2085	biofilm-dependent modulation protein	2077308	216
ECs2086	osmotically inducible protein	2077868	432
ECs2096	hypothetical protein	2088749	1320
ECs2097	acid sensitivity protein	2090199	1536
ECs2104	transcriptional regulator YdeO	2104172	762
ECs2105	hypothetical protein	2105007	198
ECs2129	hypothetical protein	2134820	948
ECs2130	hypothetical protein	2136377	360
ECs2131	glutaminase	2136736	927
ECs2132	succinate semialdehyde dehydrogenase	2137726	1413
ECs2133	LysR family transcriptional regulator	2139215	882
ECs2135	sugar efflux transporter	2141440	1191
ECs2136	multiple drug resistance protein MarC	2142655	666
ECs2137	MarR family transcriptional regulator	2143532	435
ECs2139	hypothetical protein	2144401	219
ECs2141	MFS-type transporter YdeE	2145744	1188
ECs2148	3-hydroxy acid dehydrogenase	2153413	747
ECs2150	hypothetical protein	2155111	204
ECs2151	oxidoreductase	2155350	1461
ECs2288	hypothetical protein	2255150	327
ECs2289	hypothetical protein	2255611	342
ECs2290	spermidine N1-acetyltransferase	2255987	561
ECs2291	hypothetical protein	2256550	711
ECs2292	hypothetical protein	2257365	309
ECs2296	DMSO reductase anchor subunit	2263412	855
ECs2297	twin-arginine leader-binding protein DmsD	2264309	615
ECs2300	NAGC-like transcriptional regulator	2267146	1221
ECs2301	LysR family transcriptional regulator	2268501	894
ECs2302	transporter	2269501	1254
ECs2305	multidrug efflux system protein MdtI	2272621	330

ECs2306	multidrug efflux system protein MdtJ	2272937	366
ECs2308	pyridine nucleotide transhydrogenase	2274773	1389
ECs2309	NAD(P) transhydrogenase subunit alpha	2276172	1533
ECs2310	hypothetical protein	2278228	945
ECs2311	arginine/ornithine antiporter	2279358	1383
ECs2312	short chain dehydrogenase	2280777	723
ECs2313	hypothetical protein	2281496	336
ECs2315	sensor protein RstB	2282683	1302
ECs2317	fumarate hydratase	2284986	1404
ECs2318	fumarase A	2286532	1647
ECs2319	mannose-6-phosphate isomerase	2288377	1176
ECs2320	hypothetical protein	2289653	1509
ECs2323	glucuronide transporter	2292509	1374
ECs2326	repressor for uid operon	2296083	591
ECs2329	bifunctional PTS system maltose and glucose-specific transporter subunits IICB	2298984	1593
ECs2330	aminotrasferase	2300586	1173
ECs2331	adenosine deaminase	2301862	1002
ECs2333	beta-lactam resistance protein	2304182	126
ECs2334	oriC-binding nucleoid-associated protein	2304580	216
ECs2335	hypothetical protein	2304857	465
ECs2336	Na(+)-translocating NADH-quinone reductase subunit E	2305398	582
ECs2339	electron transport complex protein RnfD	2308869	1059
ECs2340	electron transport complex protein RnfG	2309931	621
ECs2341	electron transport complex protein RxsE	2310555	696
ECs2342	endonuclease III	2311250	636
ECs2343	tripeptide transporter permease	2312496	1503
ECs2344	glutathionine S-transferase	2314104	606
ECs2345	pyridoxamine kinase	2314753	864
ECs2346	tyrosyl-tRNA synthetase	2315675	1275
ECs2347	pyridoxamine 5'-phosphate oxidase	2317078	657
ECs2349	anhydro-N-acetylmuramic acid kinase	2318220	1110
ECs2350	outer membrane protein	2319602	468
ECs2351	transcriptional regulator SlyA	2320116	435
ECs2352	hypothetical protein	2320751	237
ECs2353	hypothetical protein	2320990	858
ECs2356	hypothetical protein	2324570	789
ECs2357	hypothetical protein	2325749	600
ECs2358	hypothetical protein	2325407	378
ECs2360	glyoxalase I	2327563	408
ECs2361	ribonuclease T	2328073	648
ECs2363	hypothetical protein	2333480	348
ECs2365	superoxide dismutase	2335105	582
ECs2367	DNA-binding transcriptional repressor PurR	2337555	1026
ECs2368	DNA-binding transcriptional regulator	2338577	933
ECs2369	inner membrane transport protein YdhC	2339622	1212
ECs2370	cyclopropane-fatty-acyl-phospholipid synthase	2341124	1149
ECs2371	riboflavin synthase subunit alpha	2342312	642
ECs2372	multidrug efflux protein	2343168	1374
ECs2373	hypothetical protein	2344582	1257
ECs2375	hypothetical protein	2346842	1605
ECs2377	hypothetical protein	2349274	786
ECs2378	oxidoreductase Fe-S subunit	2350056	720
ECs2379	hypothetical protein	2350788	648
ECs2381	hypothetical protein	2353562	627
ECs2382	hypothetical protein	2354644	210
ECs2384	murein lipoprotein	2357133	237
ECs2385	hypothetical protein	2357432	1005
ECs2386	cysteine desulfuration protein SufE	2358585	417
ECs2387	bifunctional cysteine desulfurase/selenocysteine lyase	2359014	1221
ECs2388	cysteine desulfurase activator complex subunit SufD	2360231	1272
ECs2389	cysteine desulfurase	2361477	747
ECs2390	cysteine desulfurase activator complex subunit SufB	2362233	1488
ECs2391	iron-sulfur cluster assembly scaffold protein	2363729	369
ECs2392	hypothetical protein	2364646	270
ECs2393	hypothetical protein	2364934	411
ECs2394	oxidase	2365341	3057
ECs2398	amino acid/amine transport protein	2372218	1272
ECs2399	quininate/shikimate dehydrogenase	2373501	867
ECs2400	3-dehydroquininate dehydratase	2374398	759
ECs2402	acyl-CoA dehydrogenase	2376910	1152
ECs2403	AraC family transcriptional regulator	2378104	912
ECs2404	electron transfer flavoprotein YdiQ	2379331	765
ECs2405	electron transfer flavoprotein subunit YdiR	2380115	939
ECs2406	hypothetical protein	2381109	1290
ECs2407	hypothetical protein	2382395	294
ECs2409	phosphoenolpyruvate synthase	2384448	2379
ECs2410	hypothetical protein	2387159	834

ECs2411	phospho-2-dehydro-3-deoxyheptonate aldolase	2388149	1047
ECs2412	hypothetical protein	2389327	192
ECs2413	hypothetical protein	2389522	1437
ECs2414	hypothetical protein	2391021	714
ECs2415	lipoprotein	2391981	465
ECs2416	vitamin B12-transporter ATPase	2392523	750
ECs2418	vitamin B12-transporter permease	2393886	981
ECs2419	integration host factor subunit alpha	2394967	300
ECs2420	phenylalanyl-tRNA synthetase subunit beta	2395271	2388
ECs2421	phenylalanyl-tRNA synthetase subunit alpha	2397673	984
ECs2423	50S ribosomal protein L20	2399106	357
ECs2425	translation initiation factor IF-3	2399809	543
ECs2426	threonyl-tRNA synthetase	2400355	1929
ECs2429	6-phosphofructokinase	2406081	933
ECs2430	hypothetical protein	2407114	291
ECs2431	hypothetical protein	2407510	861
ECs2432	hypothetical protein	2408411	537
ECs2433	2-deoxyglucose-6-phosphatase	2409094	669
ECs2434	hypothetical protein	2409925	591
ECs2435	hypothetical protein	2410648	1392
ECs2438	hydroperoxidase II	2413580	2262
ECs2439	hypothetical protein	2415888	759
ECs2440	6-phospho-beta-glucosidase	2416659	1353
ECs2441	DNA-binding transcriptional regulator ChbR	2418117	843
ECs2442	PTS system N,N'-diacetylchitobiose-specific transporter subunit IIA	2418967	351
ECs2444	PTS system N,N'-diacetylchitobiose-specific transporter subunit IIB	2420811	321
ECs2445	OsmE family transcriptional regulator	2421431	339
ECs2446	NAD synthetase	2421971	828
ECs2447	nucleotide excision repair endonuclease	2423028	888
ECs2448	hypothetical protein	2423875	639
ECs2449	hypothetical protein	2424653	486
ECs2450	succinylglutamate desuccinylase	2425467	969
ECs2451	succinylarginine dihydrolase	2426428	1344
ECs2452	succinylglutamic semialdehyde dehydrogenase	2427768	1479
ECs2453	arginine succinyltransferase	2429243	1035
ECs2454	bifunctional succinylornithine transaminase/acetylornithine transaminase	2430274	1221
ECs2455	exonuclease III	2431940	807
ECs2456	hypothetical protein	2432913	711
ECs2457	hypothetical protein	2433628	678
ECs2458	hypothetical protein	2434320	708
ECs2459	hypothetical protein	2435027	549
ECs2460	ABC transporter substrate-binding protein	2435582	1170
ECs2461	transport system permease	2436724	1536
ECs2466	hypothetical protein	2441375	273
ECs2467	glutamate dehydrogenase	2441883	1344
ECs2470	selenophosphate synthetase	2446477	1044
ECs2472	protease 4	2448349	1857
ECs2475	nicotinamidase/pyrazinamidase	2452190	642
ECs2486	hypothetical protein	2463304	273
ECs2488	glyceraldehyde-3-phosphate dehydrogenase	2464373	996
ECs2489	hypothetical protein	2465452	885
ECs2490	aldehyde reductase	2466387	855
ECs2491	scaffolding protein in the formation of a murein-synthesizing holoenzyme	2467331	747
ECs2492	hypothetical protein	2468513	1935
ECs2493	hypothetical protein	2470560	1284
ECs2495	hypothetical protein	2473646	1491
ECs2496	hypothetical protein	2475179	504
ECs2497	hypothetical protein	2475683	153
ECs2498	hypothetical protein	2475957	447
ECs2499	AraC family transcriptional regulator	2476360	822
ECs2501	hypothetical protein	2478514	348
ECs2502	hypothetical protein	2478883	255
ECs2503	hypothetical protein	2479320	849
ECs2504	hypothetical protein	2480612	249
ECs2507	leucine export protein LeuE	2481725	639
ECs2513	ribonuclease D	2488693	1128
ECs2514	long-chain-fatty-acid--CoA ligase	2489890	1686
ECs2515	outer membrane protein	2491780	582
ECs2516	hypothetical protein	2492401	696
ECs2517	hypothetical protein	2493154	1911
ECs2518	hypothetical protein	2495148	393
ECs2520	hypothetical protein	2496381	180
ECs2521	para-aminobenzoate synthase component I	2496634	1362
ECs2522	hypothetical protein	2497999	579
ECs2523	L-serine dehydratase 1	2498761	1365
ECs2525	transporter	2501858	1557
ECs2526	hypothetical protein	2503402	210

ECs2527	PTS system mannose-specific transporter subunit IIAB	2503877	972
ECs2528	mannose-specific PTS enzyme IIC	2504911	801
ECs2529	PTS system mannose-specific transporter subunit IID	2505715	861
ECs2531	hypothetical protein	2507464	621
ECs2533	cold shock-like protein CspC	2509056	210
ECs2534	hypothetical protein	2509278	144
ECs2535	hypothetical protein	2510090	288
ECs2536	hypothetical protein	2510452	144
ECs2538	transporter	2512106	1374
ECs2539	heat shock protein HtpX	2513525	882
ECs2540	carboxy-terminal protease	2514598	2049
ECs2541	solute/DNA competence effector	2516666	699
ECs2542	hypothetical protein	2517461	498
ECs2543	hypothetical protein	2518088	1284
ECs2544	hypothetical protein	2519334	2640
ECs2545	rRNA (cytosine-C(5)-)-methyltransferase RsmF	2522048	1446
ECs2546	hypothetical protein	2523596	252
ECs2547	hypothetical protein	2523868	276
ECs2548	serine/threonine protein phosphatase 1	2524144	657
ECs2550	resistance protein	2525550	873
ECs2551	hypothetical protein	2526426	375
ECs2552	DNA polymerase III subunit theta	2526939	231
ECs2553	hypothetical protein	2527271	657
ECs2554	exodeoxyribonuclease X	2527951	663
ECs2556	hypothetical protein	2530879	660
ECs2558	DNA damage-inducible protein YebG	2532288	291
ECs2559	phosphoribosylglycinamide formyltransferase 2	2532712	1179
ECs2560	keto-hydroxyglutarate-aldolase/keto-deoxy- phosphogluconate aldolase	2533946	642
ECs2561	phosphogluconate dehydratase	2534624	1812
ECs2562	glucose-6-phosphate 1-dehydrogenase	2536670	1476
ECs2563	DNA-binding transcriptional regulator HexR	2538483	870
ECs2564	pyruvate kinase	2539480	1443
ECs2567	high-affinity zinc transporter periplasmic protein	2543482	933
ECs2568	high-affinity zinc transporter ATPase	2544493	756
ECs2569	high-affinity zinc transporter membrane protein	2545245	786
ECs2570	Holliday junction DNA helicase RuvB	2546276	1011
ECs2571	Holliday junction DNA helicase RuvA	2547295	612
ECs2572	hypothetical protein	2548181	603
ECs2573	Holliday junction resolvase	2548785	522
ECs2574	hypothetical protein	2549341	741
ECs2575	dATP pyrophosphohydrolase	2550110	453
ECs2576	aspartyl-tRNA synthetase	2550680	1773
ECs2579	hypothetical protein	2554196	396
ECs2580	hypothetical protein	2554632	744
ECs2581	hypothetical protein	2555372	972
ECs2582	biotin sulfoxide reductase	2556508	2430
ECs2583	cytochrome C-type protein	2558962	1101
ECs2585	hypothetical protein	2561210	567
ECs2586	arginyl-tRNA synthetase	2561992	1734
ECs2588	flagellar protein	2564510	393
ECs2590	flagellar biosynthesis protein FlhB	2566973	1149
ECs2591	chemotaxis protein CheZ	2568323	645
ECs2592	chemotaxis regulatory protein CheY	2568978	390
ECs2593	chemotaxis-specific methylesterase	2569382	1050
ECs2594	chemotaxis methyltransferase CheR	2570434	861
ECs2597	purine-binding chemotaxis protein	2574764	504
ECs2598	chemotaxis protein CheA	2575288	1965
ECs2599	flagellar motor protein MotB	2577257	927
ECs2600	flagellar motor protein MotA	2578180	888
ECs2601	transcriptional activator FlhC	2579194	579
ECs2602	transcriptional activator FlhD	2579775	351
ECs2603	universal stress protein UspC	2580905	429
ECs2604	trehalose-6-phosphate synthase	2581340	1425
ECs2605	trehalose-6-phosphate phosphatase	2582739	801
ECs2608	L-arabinose transporter ATP-binding protein	2584707	1515
ECs2609	L-arabinose-binding periplasmic protein	2586291	990
ECs2610	ferritin	2588077	504
ECs2612	hypothetical protein	2589374	324
ECs2613	ferritin	2589868	498
ECs2614	hypothetical protein	2590402	240
ECs2615	tyrosine-specific transporter	2590833	1212
ECs2616	hypothetical protein	2592106	666
ECs2650	phosphatidylglycerophosphate synthetase	2614540	549
ECs2653	hypothetical protein	2618089	225
ECs2655	amino-acid ABC transporter ATP-binding protein	2619333	753
ECs2656	transport system permease	2620082	669
ECs2660	flagella biosynthesis protein FlhZ	2622743	588

ECs2661	flagellar biosynthesis sigma factor	2623340	720
ECs2664	flagellar protein FliS	2627824	411
ECs2665	flagellar biosynthesis protein FliT	2628234	366
ECs2666	alpha-amylase	2628677	1488
ECs2676	flagellar hook-basal body protein FliE	2637184	315
ECs2678	flagellar motor switch protein G	2639364	996
ECs2679	flagellar assembly protein H	2640352	687
ECs2681	flagellar biosynthesis chaperone	2642492	444
ECs2682	flagellar hook-length control protein	2642932	1128
ECs2683	flagellar basal body-associated protein FliL	2644164	465
ECs2684	flagellar motor switch protein FliM	2644633	1005
ECs2686	flagellar biosynthesis protein FliO	2646050	366
ECs2687	flagellar biosynthesis protein FliP	2646415	738
ECs2688	flagellar biosynthesis protein FliQ	2647162	270
ECs2689	flagellar biosynthesis protein FliR	2647439	786
ECs2691	hypothetical protein	2649181	189
ECs2692	hypothetical protein	2649529	231
ECs2695	hypothetical protein	2652734	183
ECs2696	hypothetical protein	2652995	918
ECs2697	hypothetical protein	2654085	921
ECs2698	DNA mismatch endonuclease	2654994	471
ECs2699	DNA cytosine methylase	2655445	1419
ECs2706	2-component sensor protein	2661333	1359
ECs2707	transcriptional regulatory protein YedW	2662691	672
ECs2708	hypothetical protein	2663495	414
ECs2709	sulfite oxidase subunit YedY	2664016	1005
ECs2710	sulfite oxidase subunit YedZ	2665021	636
ECs2711	hypothetical protein	2665913	651
ECs2774	hypothetical protein	2712219	798
ECs2780	hypothetical protein	2726332	717
ECs2783	transcriptional regulator Cbl	2729435	951
ECs2784	nitrogen assimilation transcriptional regulator	2730487	918
ECs2786	nicotinate-nucleotide--dimethylbenzimidazole phosphoribosyltransferase	2732858	1080
ECs2787	cobalamin synthase	2733949	744
ECs2816	amino acid/amine transport protein	2758211	1365
ECs2817	LysR family transcriptional regulator	2759836	930
ECs2818	hypothetical protein	2760811	825
ECs2819	his operon leader peptide	2762061	51
ECs2820	ATP phosphoribosyltransferase	2762257	900
ECs2821	histidinol dehydrogenase	2763162	1305
ECs2866	tyrosine phosphatase	2811030	444
ECs2867	polysaccharide export protein	2811479	1140
ECs2868	transporter	2813277	1584
ECs2871	assembly protein	2815606	1854
ECs2872	deoxycytidine triphosphate deaminase	2817481	582
ECs2873	uridine kinase	2818154	642
ECs2878	chaperone	2823515	1353
ECs2880	hypothetical protein	2826817	762
ECs2881	hypothetical protein	2827575	660
ECs2882	multidrug efflux system subunit MdtA	2829450	1248
ECs2883	multidrug efflux system subunit MdtB	2830697	3123
ECs2884	multidrug efflux system subunit MdtC	2833820	3078
ECs2886	signal transduction histidine-protein kinase BaeS	2838310	1404
ECs2887	BaeR family transcriptional regulator	2839710	723
ECs2888	hypothetical protein	2840623	333
ECs2889	hypothetical protein	2841103	1362
ECs2892	lipid kinase	2843517	900
ECs2894	galactitol-1-phosphate dehydrogenase	2845377	1041
ECs2897	PTS system galactitol-specific transporter subunit IIA	2848139	453
ECs2900	fructose-bisphosphate aldolase	2851045	1053
ECs2902	hypothetical protein	2853628	1005
ECs2903	kinase	2854629	966
ECs2904	transcriptional regulator	2855568	747
ECs2905	hypothetical protein	2856366	828
ECs2906	phosphomethylpyrimidine kinase	2857249	801
ECs2907	hydroxyethylthiazole kinase	2858046	789
ECs2911	hypothetical protein	2861239	273
ECs2913	hypothetical protein	2862689	339
ECs2919	ATPase	2868789	1110
ECs2935	hypothetical protein	2892718	471
ECs2936	two-component response-regulatory protein YehT	2893235	720
ECs3014	transcriptional regulator	2943822	648
ECs3015	transport system permease	2944617	732
ECs3016	ABC transporter ATP-binding protein	2945353	927
ECs3017	transport system permease	2946272	1158
ECs3018	transport system permease	2947436	918
ECs3019	beta-D-glucoside glucohydrolase	2948605	2298

ECs3020	D-lactate dehydrogenase	2951098	1716
ECs3022	hypothetical protein	2953957	612
ECs3023	hypothetical protein	2954678	615
ECs3024	acetoin dehydrogenase	2955422	762
ECs3033	hypothetical protein	2965618	399
ECs3035	cytidine deaminase	2966838	885
ECs3036	hypothetical protein	2967872	720
ECs3037	hypothetical protein	2968594	240
ECs3038	oxidoreductase	2969027	1239
ECs3040	beta-methylgalactoside transporter inner membrane protein	2971737	1011
ECs3041	galactose/methyl galactoside transporter ATP-binding protein	2972763	1521
ECs3042	galactose-binding transport protein	2974344	999
ECs3043	DNA-binding transcriptional regulator GalS	2975621	1041
ECs3044	hypothetical protein	2976803	1158
ECs3045	GTP cyclohydrolase I	2977977	669
ECs3046	esterase	2978903	837
ECs3048	lysine transporter	2982042	1470
ECs3049	DNA-binding transcriptional regulator	2983716	882
ECs3050	hypothetical protein	2984696	1050
ECs3051	endonuclease IV	2985819	858
ECs3054	ribonucleoside hydrolase 2	2989173	942
ECs3055	YeiL family transcriptional regulator	2990244	699
ECs3059	PTS system fructose-specific transporter subunit IIBC	2994648	1692
ECs3060	1-phosphofructokinase	2996356	939
ECs3061	bifunctional PTS system fructose-specific transporter subunit IIA/HP _r protein	2997294	1131
ECs3062	sugar efflux transport protein	2998792	1182
ECs3065	hypothetical protein	3002758	987
ECs3066	hypothetical protein	3003783	714
ECs3067	outer membrane lipoprotein	3004909	567
ECs3070	transport system permease	3009109	1095
ECs3072	ABC transporter ATP-binding protein	3011230	1590
ECs3073	hypothetical protein	3012823	345
ECs3074	bicyclomycin/multidrug efflux system protein	3013500	1191
ECs3075	16S rRNA pseudouridylyl synthase A	3014718	696
ECs3077	50S ribosomal protein L25	3017447	285
ECs3078	nucleoid-associated protein NdpA	3017870	1008
ECs3079	hypothetical protein	3019059	228
ECs3082	transcriptional regulator NarP	3024229	648
ECs3083	CcmH precursor	3024911	1053
ECs3084	DsbE	3025960	558
ECs3085	cytochrome c-type biogenesis protein	3026514	1944
ECs3086	cytochrome c-type biogenesis protein CcmE	3028454	480
ECs3087	heme exporter protein C	3028930	210
ECs3088	heme exporter protein C	3029136	738
ECs3089	heme exporter protein B	3029915	663
ECs3090	cytochrome c biogenesis protein CcmA	3030574	618
ECs3091	cytochrome c-type protein NapC	3031210	603
ECs3092	citrate reductase cytochrome c-type subunit	3031822	450
ECs3093	quinol dehydrogenase membrane component	3032268	864
ECs3094	quinol dehydrogenase periplasmic component	3033118	696
ECs3095	nitrate reductase catalytic subunit	3033820	2487
ECs3096	assembly protein for periplasmic nitrate reductase	3036303	264
ECs3097	ferredoxin-type protein	3036556	495
ECs3098	ecotin	3037457	489
ECs3099	malate:quinone oxidoreductase	3038095	1647
ECs3102	O6-methylguanine-DNA methyltransferase	3042328	1065
ECs3103	thiamine biosynthesis lipoprotein ApbE	3043466	1056
ECs3105	phosphotransfer intermediate protein in two-component regulatory system with RcsBC	3046475	2673
ECs3106	transcriptional regulator RcsB	3049164	651
ECs3107	hybrid sensory kinase in two-component regulatory system with RcsB and YojN	3050014	2850
ECs3113	hypothetical protein	3060727	1599
ECs3114	DNA gyrase subunit A	3062563	2628
ECs3115	3-demethylubiquinone-9 3-methyltransferase	3065337	723
ECs3117	ribonucleotide-diphosphate reductase subunit alpha	3070648	2286
ECs3118	ribonucleotide-diphosphate reductase subunit beta	3073160	1131
ECs3119	2Fe-2S ferredoxin	3074290	255
ECs3120	hypothetical protein	3074598	651
ECs3124	glycerophosphodiester phosphodiesterase	3079307	1077
ECs3125	sn-glycerol-3-phosphate transporter	3080388	1359
ECs3126	sn-glycerol-3-phosphate dehydrogenase subunit A	3082019	1629
ECs3127	anaerobic glycerol-3-phosphate dehydrogenase subunit B	3083637	1260
ECs3128	sn-glycerol-3-phosphate dehydrogenase subunit C	3084893	1191
ECs3138	hypothetical protein	3094246	543
ECs3139	hypothetical protein	3095067	426
ECs3142	undecaprenyl phosphate 4-deoxy-4-formamido-L-arabinose transferase	3097584	969
ECs3145	4-amino-4-deoxy-L-arabinose transferase	3101421	1653
ECs3146	hypothetical protein	3103405	387

ECs3148	O-succinylbenzoic acid--CoA ligase	3104161	1356
ECs3150	naphthoate synthase	3106475	858
ECs3151	acyl-CoA thioester hydrolase	3107347	759
ECs3152	2-succinyl-5-enolpyruvyl-6-hydroxy-3- cyclohexene-1-carboxylate synthase	3108102	1671
ECs3153	menaquinone-specific isochorismate synthase	3109861	1296
ECs3154	hypothetical protein	3111235	306
ECs3160	NADH dehydrogenase subunit N	3116151	1458
ECs3161	NADH dehydrogenase subunit M	3117615	1530
ECs3162	NADH dehydrogenase subunit L	3119375	1842
ECs3163	NADH dehydrogenase subunit K	3121213	303
ECs3164	NADH dehydrogenase subunit J	3121512	555
ECs3165	NADH dehydrogenase subunit I	3122078	543
ECs3166	NADH dehydrogenase subunit H	3122635	978
ECs3167	NADH dehydrogenase subunit G	3123609	2727
ECs3168	NADH dehydrogenase I subunit F	3126388	1338
ECs3169	NADH dehydrogenase subunit E	3127722	501
ECs3170	bifunctional NADH:ubiquinone oxidoreductase subunit C/D	3128225	1803
ECs3171	NADH dehydrogenase subunit B	3130121	663
ECs3172	NADH dehydrogenase subunit A	3130799	438
ECs3173	LysR family transcriptional regulator	3131873	939
ECs3174	aminotransferase	3133731	1218
ECs3175	hypothetical protein	3135032	600
ECs3176	transporter	3135690	1833
ECs3177	phosphatase	3137609	651
ECs3178	hypothetical protein	3138270	495
ECs3180	acetate kinase	3139641	1203
ECs3181	phosphate acetyltransferase	3140918	2145
ECs3182	hypothetical protein	3143252	1521
ECs3183	regulator	3144805	543
ECs3184	phosphodiesterase	3145405	552
ECs3185	hypothetical protein	3146012	645
ECs3186	glutathione S-transferase	3146792	648
ECs3187	D-erythro-7,8-dihydroneopterin triphosphate 2'-epimerase	3147496	363
ECs3188	sugar nucleotide epimerase	3147879	894
ECs3189	hypothetical protein	3148820	891
ECs3190	histidine/lysine/arginine/ornithine transporter subunit	3149907	774
ECs3191	histidine transport system membrane protein M	3150688	717
ECs3192	histidine transport system permease	3151401	687
ECs3193	histidine transport system histidine-binding periplasmic protein	3152177	783
ECs3195	3-octaprenyl-4-hydroxybenzoate carboxy-lyase	3154228	570
ECs3196	amidophosphoribosyltransferase	3154892	1518
ECs3197	colicin V production protein	3156446	489
ECs3198	hypothetical protein	3157375	663
ECs3199	bifunctional folylpolyglutamate synthase/ dihydrofolate synthase	3158027	1269
ECs3200	acetyl-CoA carboxylase subunit beta	3159365	915
ECs3202	tRNA pseudouridine synthase A	3161177	813
ECs3203	semialdehyde dehydrogenase	3161989	1014
ECs3204	erythronate-4-phosphate dehydrogenase	3163068	1137
ECs3207	3-oxoacyl-ACP synthase	3166748	1221
ECs3208	5-methylaminomethyl-2-thiouridine methyltransferase	3168127	2007
ECs3209	hypothetical protein	3170254	279
ECs3210	transporting ATPase	3170566	549
ECs3211	hypothetical protein	3171114	810
ECs3212	penicillin-insensitive murein endopeptidase	3171923	825
ECs3213	chorismate synthase	3172751	1086
ECs3215	N5-glutamine S-adenosyl-L-methionine-dependent methyltransferase	3173871	933
ECs3223	phosphohistidine phosphatase	3182742	486
ECs3224	multifunctional fatty acid oxidation complex subunit alpha	3183430	2145
ECs3225	3-ketoacyl-CoA thiolase	3185574	1311
ECs3226	hypothetical protein	3187064	285
ECs3229	lipoprotein precursor	3190851	756
ECs3230	transport	3191900	933
ECs3254	formyl-coenzyme A transferase	3220137	1251
ECs3255	hypothetical protein	3221900	636
ECs3256	hypothetical protein	3222831	276
ECs3257	hypothetical protein	3223183	243
ECs3258	lipid A biosynthesis palmitoleoyl acyltransferase	3223778	921
ECs3259	aminotransferase	3225190	1239
ECs3261	2-component transcriptional regulator	3228517	735
ECs3262	AraC family transcriptional regulator	3229264	858
ECs3264	exoaminopeptidase	3232644	1038
ECs3265	aminopeptidase	3233681	1086
ECs3266	transporter	3234781	1248
ECs3267	PTS system enzyme IIB component	3236050	327
ECs3268	glucokinase	3236595	966
ECs3269	hypothetical protein	3237764	1257
ECs3270	hypothetical protein	3239135	327

ECs3271	manganese transport protein MntH	3239601	1239
ECs3272	permease of transport system for 3 nucleosides	3241175	1203
ECs3273	hypothetical protein	3242427	2190
ECs3274	hypothetical protein	3245235	360
ECs3278	glutamyl-tRNA synthetase	3247787	1416
ECs3282	cytochrome oxidase	3251325	999
ECs3283	NAD-dependent DNA ligase LigA	3252540	2016
ECs3284	cell division protein ZipA	3254626	999
ECs3285	sulfate transport protein CysZ	3255854	762
ECs3286	cysteine synthase A	3256800	972
ECs3287	PTS system phosphohistidinoprotein-hexose phosphotransferase Hpr	3258155	258
ECs3290	pyridoxal kinase	3260777	852
ECs3292	cysteine synthase B	3262103	912
ECs3293	sulfate/thiosulfate transporter subunit	3263148	1098
ECs3294	sulfate/thiosulfate transporter permease	3264235	876
ECs3295	sulfate/thiosulfate transporter subunit	3265110	834
ECs3296	thiosulfate transporter subunit	3265943	1017
ECs3297	short chain dehydrogenase	3267117	792
ECs3299	N-acetylmuramic acid 6-phosphate etherase	3269058	897
ECs3302	hypothetical protein	3272749	900
ECs3304	hypothetical protein	3274380	450
ECs3305	acetyltransferase	3274816	426
ECs3306	N-acetylmuramoyl-l-alanine amidase I	3275455	870
ECs3307	coproporphyrinogen III oxidase	3276328	900
ECs3308	transcriptional regulator EutR	3277233	1053
ECs3309	hypothetical protein	3278331	501
ECs3310	hypothetical protein	3278844	660
ECs3312	ethanolamine ammonia-lyase heavy chain	3280421	1362
ECs3315	hypothetical protein	3284520	1188
ECs3317	EutE	3286544	1404
ECs3319	detox protein	3288353	294
ECs3320	phosphotransacetylase	3288685	1017
ECs3322	ethanolamine utilization protein EutQ	3290426	702
ECs3323	hypothetical protein	3291102	480
ECs3324	hypothetical protein	3291594	336
ECs3325	malic enzyme	3292222	2280
ECs3329	hypothetical protein	3299027	576
ECs3330	oxidoreductase Fe-S binding subunit	3299670	1980
ECs3331	nitrate/nitrite sensor protein NarQ	3301855	1701
ECs3332	aminoglycoside/multidrug efflux system	3303719	3114
ECs3333	hypothetical protein	3307371	357
ECs3334	succinyl-diaminopimelate desuccinylase	3307731	1128
ECs3335	esterase	3309167	699
ECs3336	hypothetical protein	3309939	2016
ECs3337	hypothetical protein	3311969	864
ECs3338	phosphoribosylaminoimidazole-succinocarboxamide synthase	3313000	714
ECs3339	lipoprotein	3313926	1035
ECs3340	dihydrodipicolinate synthase	3314977	879
ECs3341	glycine cleavage system transcriptional repressor	3316001	573
ECs3342	thioredoxin-dependent thiol peroxidase	3316573	471
ECs3355	permease	3330963	1062
ECs3358	DNA replication initiation factor	3334218	747
ECs3359	uracil transporter	3335014	1290
ECs3360	uracil phosphoribosyltransferase	3336389	627
ECs3361	phosphoribosylaminoimidazole synthetase	3337340	1038
ECs3362	phosphoribosylglycinamide formyltransferase	3338377	639
ECs3363	polyphosphate kinase	3339186	2067
ECs3364	exopolyphosphatase	3341257	1542
ECs3366	hypothetical protein	3345432	192
ECs3367	outer membrane lipoprotein	3345934	519
ECs3368	hypothetical protein	3346468	540
ECs3369	GMP synthase	3347100	1578
ECs3370	inosine 5'-monophosphate dehydrogenase	3348746	1467
ECs3373	GTP-binding protein EngA	3352025	1473
ECs3374	outer membrane protein assembly complex subunit YfgL	3353615	1179
ECs3375	hypothetical protein	3354804	621
ECs3376	histidyl-tRNA synthetase	3355442	1275
ECs3377	4-hydroxy-3-methylbut-2-en-1-yl diphosphate synthase	3356827	1119
ECs3380	nucleoside diphosphate kinase	3360574	432
ECs3386	hypothetical protein	3368298	4962
ECs3387	3-mercaptopyruvate sulfurtransferase	3373466	846
ECs3390	hypothetical protein	3377191	201
ECs3391	[2FE-2S] ferredoxin	3377403	336
ECs3392	chaperone protein HscA	3377740	1851
ECs3393	co-chaperone HscB	3379607	516
ECs3394	iron-sulfur cluster assembly protein	3380218	324
ECs3395	scaffold protein	3380558	387

ECs3396	cysteine desulfurase	3380972	1215
ECs3397	DNA-binding transcriptional regulator IscR	3382298	489
ECs3399	inositol monophosphatase	3383943	804
ECs3400	hypothetical protein	3384891	855
ECs3401	stationary phase inducible protein CsiE	3385936	1281
ECs3402	3-phenylpropionic acid transporter	3387208	1140
ECs3409	hypothetical protein	3393847	423
ECs3411	hypothetical protein	3395201	789
ECs3412	transport system permease	3396328	999
ECs3415	hypothetical protein	3399965	3375
ECs3417	serine hydroxymethyltransferase	3404620	1254
ECs3418	nitric oxide dioxygenase	3406201	1191
ECs3419	nitrogen regulatory protein P-II 1	3407436	339
ECs3420	2-component transcriptional regulator	3407835	1335
ECs3423	phosphoribosylformylglycinamide synthase	3412040	3888
ECs3424	transglycosylase	3416322	1419
ECs3425	tRNA-specific adenosine deaminase	3417737	537
ECs3426	hypothetical protein	3418298	636
ECs3427	DNA-binding transcriptional regulator	3419142	849
ECs3429	4'-phosphopantetheinyl transferase	3421002	381
ECs3430	pyridoxine 5'-phosphate synthase	3421382	732
ECs3431	DNA repair protein RecO	3422125	729
ECs3432	GTP-binding protein Era	3422865	906
ECs3433	ribonuclease III	3423767	681
ECs3434	signal peptidase I	3424720	975
ECs3435	GTP-binding protein LepA	3425710	1800
ECs3436	SoxR reducing system protein RseC	3427707	480
ECs3437	periplasmic negative regulator of sigmaE	3428183	957
ECs3439	RNA polymerase sigma factor RpoE	3429810	576
ECs3440	L-aspartate oxidase	3430793	1623
ECs3441	hypothetical protein	3432400	858
ECs3443	LysR family transcriptional regulator	3434636	882
ECs3445	autonomous glycyl radical cofactor GrcA	3436263	384
ECs3447	methyltransferase	3437689	1038
ECs3448	thioredoxin 2	3438933	420
ECs3449	hypothetical protein	3439421	699
ECs3452	phosphatidylserine synthase	3442926	1356
ECs3453	hypothetical protein	3444378	273
ECs3454	alpha-ketoglutarate transporter	3444647	1299
ECs3455	protein disaggregation chaperone	3451719	2574
ECs3456	hypothetical protein	3454422	732
ECs3457	23S rRNA pseudouridine synthase D	3455150	981
ECs3458	outer membrane protein assembly complex subunit YfiO	3456265	738
ECs3460	translation inhibitor protein RaiA	3457273	342
ECs3462	bifunctional chorismate mutase/prephenate dehydratase	3457864	1161
ECs3463	bifunctional chorismate mutase/prephenate dehydrogenase	3459067	1122
ECs3464	phospho-2-dehydro-3-deoxyheptonate aldolase	3460199	1071
ECs3465	hypothetical protein	3461440	405
ECs3466	hypothetical protein	3461994	519
ECs3467	hypothetical protein	3462502	1227
ECs3469	50S ribosomal protein L19	3464303	348
ECs3470	tRNA (guanine-N(1)-)-methyltransferase	3464692	768
ECs3471	16S rRNA-processing protein RimM	3465490	549
ECs3472	30S ribosomal protein S16	3466057	249
ECs3473	signal recognition particle protein	3466442	1362
ECs3474	hypothetical protein	3467970	792
ECs3476	heat shock protein GrpE	3470124	594
ECs3478	recombination and repair protein	3471804	1662
ECs3479	small membrane protein A	3473803	153
ECs3480	hypothetical protein	3474017	291
ECs3481	hypothetical protein	3474297	477
ECs3482	SsrA-binding protein	3474905	483
ECs3520	hypothetical protein	3511172	978
ECs3522	succinate-semialdehyde dehydrogenase I	3513460	1449
ECs3523	4-aminobutyrate aminotransferase	3514922	1281
ECs3524	gamma-aminobutyrate transporter	3516440	1401
ECs3525	DNA-binding transcriptional regulator CsiR	3517861	663
ECs3526	LysM domain/BON superfamily protein	3518524	450
ECs3527	hypothetical protein	3519057	159
ECs3528	hypothetical protein	3519398	300
ECs3529	hypothetical protein	3519707	519
ECs3530	DNA binding protein	3520278	405
ECs3531	hypothetical protein	3521350	450
ECs3532	hypothetical protein	3521836	345
ECs3533	hypothetical protein	3522332	330
ECs3536	glutaredoxin-like protein	3524873	246
ECs3537	ribonucleotide reductase stimulatory protein	3525115	411

ECs3538	ribonucleotide-diphosphate reductase subunit alpha	3525498	2145
ECs3539	ribonucleotide-diphosphate reductase subunit beta	3527652	960
ECs3540	glycine betaine transporter ATP-binding protein	3528967	1203
ECs3541	glycine betaine transporter membrane protein	3530162	1065
ECs3542	glycine betaine transporter periplasmic subunit	3531283	993
ECs3544	hypothetical protein	3533775	738
ECs3545	hypothetical protein	3534502	336
ECs3546	transcriptional repressor MprA	3534928	531
ECs3547	multidrug resistance secretion protein	3535585	1173
ECs3548	multidrug resistance protein B	3536774	1539
ECs3549	S-ribosylhomocysteinase	3538376	516
ECs3550	glutamate--cysteine ligase	3539041	1557
ECs3552	fructose-1-phosphatase	3541095	567
ECs3553	carbon storage regulator	3542889	186
ECs3554	alanyl-tRNA synthetase	3543309	2631
ECs3555	recombination regulator RecX	3546067	501
ECs3556	recombinase A	3546635	1062
ECs3557	competence damage-inducible protein A	3547776	498
ECs3564	D-arabinose 5-phosphate isomerase	3553736	966
ECs3565	anaerobic nitric oxide reductase transcriptional regulator	3554698	1515
ECs3567	nitric oxide reductase	3557631	1134
ECs3568	transcriptional regulatory protein	3558892	2253
ECs3569	electron transport protein HydN	3561297	528
ECs3573	hydrogenase 3 maturation protease	3566257	471
ECs3574	formate hydrogenlyase maturation protein	3566720	411
ECs3576	formate hydrogenlyase complex iron-sulfur subunit	3567894	543
ECs3577	hydrogenase 3 large subunit	3568446	1710
ECs3578	membrane-spanning protein of hydrogenase 3	3570173	924
ECs3579	formate hydrogenlyase subunit 3	3571099	1827
ECs3580	formate hydrogenlyase subunit-7 component B	3572922	612
ECs3581	formate hydrogenlyase regulatory protein HycA	3573658	462
ECs3582	hydrogenase nickel incorporation protein	3574331	351
ECs3583	hydrogenase nickel incorporation protein HypB	3574685	873
ECs3584	hydrogenase assembly chaperone	3575548	273
ECs3585	hypothetical protein	3575820	1122
ECs3586	hypothetical protein	3576980	969
ECs3587	formate hydrogenlyase transcriptional activator	3578022	2079
ECs3598	stationary phase survival protein SurE	3590036	762
ECs3599	tRNA pseudouridine synthase D	3590778	1050
ECs3600	2-C-methyl-D-erythritol 2,4-cyclodiphosphate synthase	3591824	480
ECs3601	2-C-methyl-D-erythritol 4-phosphate cytidyltransferase	3592303	711
ECs3602	cell division protein FtsB	3593032	312
ECs3604	adenylsulfate kinase	3593910	606
ECs3605	sulfate adenyltransferase subunit 1	3594515	1428
ECs3606	sulfate adenyltransferase subunit 2	3595944	909
ECs3617	phosphoadenosine phosphosulfate reductase	3607697	735
ECs3618	sulfite reductase subunit beta	3608505	1713
ECs3619	sulfite reductase subunit alpha	3610217	1800
ECs3620	6-pyruvoyl tetrahydrobiopterin synthase	3612332	366
ECs3623	anti-terminator regulatory protein	3614314	576
ECs3629	hypothetical protein	3618081	1455
ECs3631	transporter	3620709	1278
ECs3639	phosphopyruvate hydratase	3629042	1299
ECs3640	CTP synthetase	3630428	1638
ECs3641	nucleoside triphosphate pyrophosphohydrolase	3632293	792
ECs3644	GDP/GTP pyrophosphokinase	3633816	2235
ECs3647	glucarate dehydratase	3640445	1341
ECs3648	glucarate dehydratase	3641806	1023
ECs3649	transporter	3643148	1353
ECs3650	flavodoxin	3644935	450
ECs3651	tRNA pseudouridine synthase C	3645402	783
ECs3652	hypothetical protein	3646184	330
ECs3653	SecY interacting protein Syd	3647135	546
ECs3654	7-cyano-7-deazaguanine reductase	3647748	849
ECs3655	hypothetical protein	3648708	1365
ECs3656	serine transporter	3650629	1290
ECs3657	L-serine dehydratase	3651976	1368
ECs3658	exonuclease IX	3653455	756
ECs3659	L-1,2-propanediol oxidoreductase	3654265	1152
ECs3660	L-fucose phosphate aldolase	3655441	648
ECs3662	L-fucose isomerase	3657984	1776
ECs3663	L-fuculokinase	3659838	1449
ECs3667	hypothetical protein	3663636	396
ECs3668	GcvA family transcriptional regulator	3664050	918
ECs3669	hypothetical protein	3665318	231
ECs3670	cysteine sulfinate desulfinase	3665737	1206
ECs3671	hypothetical protein	3666942	444

ECs3672	hypothetical protein	3667436	807
ECs3673	murein transglycosylase A	3668481	1098
ECs3674	amidase	3670157	1254
ECs3675	N-acetylglutamate synthase	3671642	1332
ECs3676	exonuclease V subunit alpha	3673035	1827
ECs3678	protease III	3678396	2889
ECs3679	exonuclease V subunit gamma	3681460	3369
ECs3680	hypothetical protein	3684841	324
ECs3681	hypothetical protein	3685149	408
ECs3682	hypothetical protein	3685553	564
ECs3684	thymidylate synthase	3686761	795
ECs3685	prolipoprotein diacylglycerol transferase	3687562	876
ECs3686	fused phosphoenolpyruvate-protein phosphotransferase PtsP/GAF domain	3688588	2247
ECs3687	dinucleoside polyphosphate hydrolase	3690847	531
ECs3688	DNA mismatch repair protein	3692062	690
ECs3689	transporter	3692820	714
ECs3690	hypothetical protein	3693671	219
ECs3691	aldo/keto reductase	3693997	1041
ECs3692	lysophospholipid transporter LpIT	3695069	1194
ECs3693	bifunctional acyl-ACP synthetase/2-acylglycerophosphoethanolamine acyltransferase	3696255	2160
ECs3694	DNA-binding transcriptional regulator GalR	3699000	1032
ECs3695	diaminopimelate decarboxylase	3700038	1263
ECs3696	LysR family transcriptional regulator	3701422	936
ECs3697	racemase	3702344	693
ECs3698	low-affinity L-arabinose transport system proton symport protein	3703165	1419
ECs3699	2-deoxy-D-gluconate 3-dehydrogenase	3704898	762
ECs3700	5-keto-4-deoxyuronate isomerase	3705689	837
ECs3701	acetyl-CoA acetyltransferase	3706812	1182
ECs3738	lipoprotein	3737466	756
ECs3739	xanthine dehydrogenase subunit XdhA	3738676	2259
ECs3741	xanthine dehydrogenase subunit XdhC	3741820	480
ECs3742	transcriptional regulator	3742339	1779
ECs3744	diaminopropionate ammonia-lyase	3745841	1197
ECs3745	peptidase	3747095	1212
ECs3746	phenylhydantoinase	3748359	1386
ECs3747	carbamate kinase	3749792	933
ECs3749	hypothetical protein	3752438	708
ECs3750	hypothetical protein	3753311	579
ECs3753	selenate reductase subunit YgfM	3758690	780
ECs3755	transporter	3762444	1458
ECs3756	guanine deaminase	3763916	1320
ECs3758	oxidoreductase Fe-S subunit	3766674	396
ECs3760	permease	3769448	1518
ECs3761	isopentenyl-diphosphate delta-isomerase	3771215	549
ECs3762	lysyl-tRNA synthetase	3771806	1518
ECs3764	ssDNA exonuclease RecJ	3774522	1734
ECs3765	thiol:disulfide interchange protein DsbC	3776261	711
ECs3766	site-specific tyrosine recombinase XerD	3776996	897
ECs3767	flavodoxin FldB	3778004	522
ECs3768	hypothetical protein	3778565	408
ECs3769	hypothetical protein	3778953	267
ECs3770	global regulator	3779462	981
ECs3771	oxidoreductase	3780519	660
ECs3772	hypothetical protein	3781342	312
ECs3773	6-phospho-beta-glucosidase	3781692	1440
ECs3774	glycine dehydrogenase	3783297	2874
ECs3775	glycine cleavage system protein H	3786288	390
ECs3776	glycine cleavage system aminomethyltransferase T	3786701	1095
ECs3777	hypothetical protein	3788243	1203
ECs3778	2-octaprenyl-6-methoxyphenyl hydroxylase	3789469	1179
ECs3779	proline aminopeptidase P II	3790644	1326
ECs3780	hypothetical protein	3791995	579
ECs3781	Z-ring-associated protein	3792741	330
ECs3782	ligase	3793370	549
ECs3784	D-3-phosphoglycerate dehydrogenase	3794700	1233
ECs3785	ribose-5-phosphate isomerase A	3796187	660
ECs3786	chromosome replication initiation inhibitor protein	3797229	894
ECs3793	hypothetical protein	3804816	741
ECs3794	arginine exporter protein	3805649	636
ECs3795	mechanosensitive channel MscS	3806423	861
ECs3796	fructose-bisphosphate aldolase	3807641	1080
ECs3797	phosphoglycerate kinase	3808935	1164
ECs3798	erythrose 4-phosphate dehydrogenase	3810148	1020
ECs3805	DNA-binding transcriptional regulator	3815297	510
ECs3807	oxidoreductase	3816790	1278
ECs3809	mannitol phosphotransferase subunit EIIA	3819498	444
ECs3810	transketolase	3820255	1992

ECs3811	hypothetical protein	3822524	759
ECs3814	arginine decarboxylase	3825421	1977
ECs3815	hypothetical protein	3827406	147
ECs3816	hypothetical protein	3827673	216
ECs3818	S-adenosylmethionine synthetase	3828192	1155
ECs3820	hypothetical protein	3831254	498
ECs3821	DNA-specific endonuclease I	3831846	708
ECs3823	glutathione synthetase	3833377	948
ECs3824	hypothetical protein	3834436	564
ECs3825	Holliday junction resolvase-like protein	3834999	417
ECs3826	hypothetical protein	3836604	705
ECs3829	hypothetical protein	3837889	291
ECs3830	deoxyribonucleotide triphosphate pyrophosphatase	3838187	594
ECs3831	coproporphyrinogen III oxidase	3838773	1137
ECs3832	hypothetical protein	3840152	1008
ECs3834	hypothetical protein	3842498	720
ECs3835	hypothetical protein	3843401	327
ECs3836	tRNA (guanine-N(7)-)-methyltransferase	3843727	720
ECs3839	murein transglycosylase C	3846024	1083
ECs3840	protein NupG	3847308	1257
ECs3841	ornithine decarboxylase	3848614	2136
ECs3842	transporter	3851147	708
ECs3874	glutathione S-transferase	3879081	867
ECs3875	hydrogenase 2 accessory protein HypG	3880070	249
ECs3876	hydrogenase nickel incorporation protein HybF	3880331	342
ECs3877	hydrogenase 2-specific chaperone	3880665	489
ECs3878	hydrogenase 2 maturation endopeptidase	3881146	495
ECs3879	hydrogenase 2 large subunit	3881640	1704
ECs3880	hydrogenase 2 b cytochrome subunit	3883340	1179
ECs3881	hydrogenase 2 protein HybA	3884508	987
ECs3882	hydrogenase 2 small subunit	3885497	1119
ECs3883	hypothetical protein	3886804	288
ECs3884	hypothetical protein	3887210	888
ECs3886	hypothetical protein	3889334	495
ECs3887	oxidoreductase	3890019	885
ECs3889	biopolymer transport protein ExbD	3891175	426
ECs3890	biopolymer transport protein ExbB	3891607	735
ECs3891	hypothetical protein	3892334	156
ECs3892	cystathionine beta-lyase	3892593	1188
ECs3895	AraC family transcriptional regulator	3894619	957
ECs3896	2,5-diketo-D-gluconate reductase A	3896980	828
ECs3898	hypothetical protein	3898276	654
ECs3899	outer membrane lipoprotein	3898978	258
ECs3900	hypothetical protein	3899278	2220
ECs3903	DNA topoisomerase IV subunit A	3904066	2259
ECs3905	hypothetical protein	3908178	483
ECs3906	hypothetical protein	3908713	393
ECs3907	DNA-binding transcriptional regulator QseB	3909257	660
ECs3910	modulator of drug activity B	3911371	582
ECs3911	hypothetical protein	3911983	315
ECs3918	DNA topoisomerase IV subunit B	3919598	1893
ECs3919	esterase	3921519	582
ECs3920	cyclic 3',5'-adenosine monophosphate phosphodiesterase	3922100	828
ECs3921	hypothetical protein	3922952	423
ECs3922	ADP-ribose pyrophosphatase	3923375	630
ECs3923	outer membrane channel protein	3924209	1482
ECs3924	hypothetical protein	3925690	261
ECs3925	hypothetical protein	3925838	672
ECs3926	synthetase/amidase	3926515	1161
ECs3927	hypothetical protein	3927713	816
ECs3929	3,4-dihydroxy-2-butanone 4-phosphate synthase	3929907	654
ECs3931	glycogen synthesis protein GlgS	3931268	201
ECs3935	bifunctional heptose 7-phosphate kinase/heptose 1-phosphate adenyltransferase	3934848	1434
ECs3936	bifunctional glutamine-synthetase adenyltransferase/deadenyltransferase	3936329	2841
ECs3937	hypothetical protein	3939192	1302
ECs3938	signal transduction protein	3940735	621
ECs3939	multifunctional tRNA nucleotidyl transferase/2'3'-cyclic phosphodiesterase/2'nucleotidase/phosphatase	3941419	1239
ECs3940	UDP pyrophosphate phosphatase	3942838	822
ECs3941	bifunctional dihydroneopterin aldolase/dihydroneopterin triphosphate 2'-epimerase	3943750	372
ECs3942	glycerol-3-phosphate acyltransferase PlsY	3944224	618
ECs3943	transcriptional activator TtdR	3944854	933
ECs3944	tartrate dehydratase subunit alpha	3945993	912
ECs3945	L(+)-tartrate dehydratase subunit beta	3946901	606
ECs3946	hypothetical protein	3947555	1464
ECs3947	DNA-binding/iron metalloprotein/AP endonuclease	3949061	1014
ECs3948	30S ribosomal protein S21	3950312	216
ECs3949	DNA primase	3950638	1746

ECs3950	RNA polymerase sigma factor RpoD	3952578	1842
ECs3951	G/U mismatch-specific DNA glycosylase	3954498	507
ECs3954	aerotaxis sensor receptor	3957087	1521
ECs3955	putrescine--2-oxoglutarate aminotransferase	3958998	1407
ECs3956	hypothetical protein	3960446	333
ECs3957	DNA-binding transcriptional repressor EbgR	3960997	984
ECs3958	cryptic beta-D-galactosidase subunit alpha	3962164	3093
ECs3959	cryptic beta-D-galactosidase subunit beta	3965253	450
ECs3961	hypothetical protein	3967332	1071
ECs3964	hypothetical protein	3973359	417
ECs3966	hypothetical protein	3974370	1137
ECs3969	hypothetical protein	3976924	1005
ECs3970	transporter	3978212	966
ECs3971	serine/threonine transporter SstT	3979576	1245
ECs3974	glucuronate isomerase	3982961	1413
ECs3976	DNA-binding transcriptional repressor ExuR	3986284	777
ECs3977	hypothetical protein	3987405	663
ECs3978	hypothetical protein	3988071	384
ECs3979	hypothetical protein	3988601	369
ECs3980	hypothetical protein	3989007	306
ECs3981	hypothetical protein	3989315	405
ECs3982	hypothetical protein	3989709	300
ECs3984	transferase	3990656	987
ECs3985	cytochrome	3991934	366
ECs3987	LysR family transcriptional regulator	3992947	897
ECs3988	hypothetical protein	3993948	702
ECs3989	hypothetical protein	3994666	171
ECs3990	hypothetical protein	3994970	1311
ECs3991	transport system permease	3996308	1332
ECs3992	L-serine deaminase	3997914	1365
ECs3993	hypothetical protein	3999350	390
ECs3994	formate acetyltransferase 3	3999753	2295
ECs3995	propionate/acetate kinase	4002081	1221
ECs3996	threonine/serine transporter TdcC	4003315	1332
ECs3997	threonine dehydratase	4004668	990
ECs3998	TdcA family transcriptional regulator	4005756	939
ECs4002	glycerate kinase	4009860	1146
ECs4003	tartronate semialdehyde reductase	4011102	891
ECs4011	PTS system N-acetylgalactosamine-specific transporter subunit IIB	4019452	474
ECs4016	tagatose-6-phosphate aldose/ketose isomerase	4023516	1155
ECs4017	tagatose-bisphosphate aldolase	4024683	861
ECs4019	PTS system N-acetylgalactosamine-specific transporter subunit IID	4027018	792
ECs4027	hypothetical protein	4034973	861
ECs4029	hypothetical protein	4037892	396
ECs4030	DnaA initiator-associating protein DiaA	4038307	591
ECs4031	hypothetical protein	4038907	576
ECs4036	GIY-YIG nuclease superfamily protein	4042464	303
ECs4037	hypothetical protein	4042753	504
ECs4038	hypothetical protein	4043250	525
ECs4039	collagenase	4043983	996
ECs4040	hypothetical protein	4044969	897
ECs4041	hypothetical protein	4045946	1008
ECs4042	tryptophan permease	4047070	1245
ECs4043	ATP-dependent RNA helicase DeaD	4048468	1890
ECs4044	Nlp family transcriptional regulator	4050537	885
ECs4045	polynucleotide phosphorylase	4051530	2205
ECs4046	30S ribosomal protein S15	4053912	270
ECs4047	tRNA pseudouridine synthase B	4054330	945
ECs4048	ribosome-binding factor A	4055274	402
ECs4049	translation initiation factor IF-2	4055840	2673
ECs4050	transcription elongation factor NusA	4058537	1488
ECs4051	hypothetical protein	4060052	453
ECs4052	argininosuccinate synthase	4061135	1344
ECs4054	preprotein translocase subunit SecG	4064671	333
ECs4055	phosphoglucosamine mutase	4065231	1338
ECs4056	dihydropteroate synthase	4066561	849
ECs4057	ATP-dependent metalloprotease	4067499	1935
ECs4058	23S rRNA methyltransferase	4069533	630
ECs4059	RNA-binding protein YhbY	4070288	294
ECs4060	transcription elongation factor GreA	4070737	477
ECs4061	D-alanyl-D-alanine carboxypeptidase	4071461	1434
ECs4062	GTPase ObgE	4072934	1173
ECs4063	hypothetical protein	4074122	966
ECs4064	50S ribosomal protein L27	4075214	258
ECs4065	50S ribosomal protein L21	4075492	312
ECs4066	octaprenyl diphosphate synthase	4076062	972
ECs4068	UDP-N-acetylglucosamine 1-carboxyvinyltransferase	4077588	1260

ECs4069	hypothetical protein	4078902	270
ECs4070	hypothetical protein	4079316	294
ECs4071	hypothetical protein	4079609	636
ECs4073	hypothetical protein	4080819	783
ECs4074	ABC transporter ATP-binding protein	4081609	810
ECs4075	calcium/sodium:proton antiporter	4082628	978
ECs4076	D-arabinose 5-phosphate isomerase	4083619	987
ECs4077	3-deoxy-D-manno-octulosonate 8-phosphate phosphatase	4084626	567
ECs4078	hypothetical protein	4085189	576
ECs4079	lipopolysaccharide transport periplasmic protein LptA	4085733	558
ECs4080	ABC transporter ATP-binding protein	4086297	726
ECs4081	RNA polymerase factor sigma-54	4087070	1434
ECs4082	sigma(54) modulation protein	4088526	288
ECs4083	PTS system transporter subunit IIA-like nitrogen-regulatory protein PtsN	4088931	492
ECs4084	hypothetical protein	4089468	855
ECs4085	phosphohistidinoprotein-hexose phosphotransferase component of N-regulated PTS system (Npr)	4090319	273
ECs4086	hypothetical protein	4090805	633
ECs4087	monofunctional biosynthetic peptidoglycan transglycosylase	4091434	729
ECs4089	aerobic respiration control sensor protein ArcB	4093042	2337
ECs4090	hypothetical protein	4095474	930
ECs4091	glutamate synthase subunit alpha	4096984	4554
ECs4092	glutamate synthase subunit beta	4101550	1419
ECs4094	hypothetical protein	4104261	465
ECs4095	N-acetylmannosamine kinase	4104722	876
ECs4096	N-acetylmannosamine-6-phosphate 2-epimerase	4105594	690
ECs4097	sialic acid transporter	4106331	1491
ECs4098	N-acetylneuraminase lyase	4107930	894
ECs4099	transcriptional regulator NanR	4108945	783
ECs4101	ClpXP protease specificity-enhancing factor	4111515	498
ECs4102	stringent starvation protein A	4112018	639
ECs4103	30S ribosomal protein S9	4113051	393
ECs4104	50S ribosomal protein L13	4113459	429
ECs4105	hypothetical protein	4114106	1128
ECs4106	cytochrome d ubiquinol oxidase subunit III	4115421	405
ECs4107	serine endoprotease	4115979	1368
ECs4108	serine endoprotease	4117436	1068
ECs4109	malate dehydrogenase	4118567	939
ECs4110	arginine repressor ArgR	4119940	471
ECs4111	hypothetical protein	4120724	315
ECs4112	hypothetical protein	4121094	273
ECs4113	p-hydroxybenzoic acid efflux subunit AaeB	4121458	1968
ECs4114	p-hydroxybenzoic acid efflux subunit AaeA	4123431	930
ECs4115	hypothetical protein	4124368	204
ECs4116	DNA-binding transcriptional regulator	4124754	930
ECs4117	protease TldD	4125817	1446
ECs4118	hypothetical protein	4127418	3801
ECs4119	ribonuclease G	4131286	1470
ECs4120	Maf-like protein	4132745	594
ECs4121	rod shape-determining protein MreD	4133347	489
ECs4123	rod shape-determining protein MreB	4135004	1044
ECs4125	dehydrogenase	4138444	975
ECs4127	acetyl-CoA carboxylase biotin carboxyl carrier protein subunit	4140396	471
ECs4128	acetyl-CoA carboxylase biotin carboxylase subunit	4140877	1350
ECs4129	hypothetical protein	4142335	243
ECs4130	sodium/pantothenate symporter	4142567	1452
ECs4131	50S ribosomal protein L11 methyltransferase	4144030	882
ECs4132	tRNA-dihydrouridine synthase B	4145240	966
ECs4133	DNA-binding protein Fis	4146231	297
ECs4140	hypothetical protein	4153394	222
ECs4144	ABC transporter ATP-binding protein	4157441	759
ECs4146	hypothetical protein	4164778	258
ECs4147	shikimate 5-dehydrogenase	4165032	819
ECs4148	ribosome maturation factor	4165855	573
ECs4149	hypothetical protein	4166432	306
ECs4150	hypothetical protein	4167003	474
ECs4152	peptide deformylase	4168702	510
ECs4153	methionyl-tRNA formyltransferase	4169226	948
ECs4155	potassium transporter peripheral membrane protein	4171530	1377
ECs4156	large-conductance mechanosensitive channel	4173036	411
ECs4159	50S ribosomal protein L17	4174628	384
ECs4160	DNA-directed RNA polymerase subunit alpha	4175052	990
ECs4161	30S ribosomal protein S4	4176067	621
ECs4162	30S ribosomal protein S11	4176721	390
ECs4163	30S ribosomal protein S13	4177127	357
ECs4164	50S ribosomal protein L36	4177630	117
ECs4165	preprotein translocase subunit SecY	4177778	1332
ECs4166	50S ribosomal protein L15	4179117	435

ECs4167	50S ribosomal protein L30	4179555	180
ECs4168	30S ribosomal protein S5	4179738	504
ECs4169	50S ribosomal protein L18	4180256	354
ECs4170	50S ribosomal protein L6	4180619	534
ECs4171	30S ribosomal protein S8	4181165	393
ECs4172	30S ribosomal protein S14	4181591	306
ECs4173	50S ribosomal protein L5	4181911	540
ECs4174	50S ribosomal protein L24	4182465	315
ECs4175	50S ribosomal protein L14	4182790	372
ECs4176	30S ribosomal protein S17	4183326	255
ECs4177	50S ribosomal protein L29	4183580	192
ECs4178	50S ribosomal protein L16	4183771	411
ECs4179	30S ribosomal protein S3	4184194	702
ECs4180	50S ribosomal protein L22	4184913	333
ECs4181	30S ribosomal protein S19	4185260	279
ECs4182	50S ribosomal protein L2	4185555	822
ECs4183	50S ribosomal protein L23	4186394	303
ECs4184	50S ribosomal protein L4	4186693	606
ECs4185	50S ribosomal protein L3	4187309	630
ECs4186	30S ribosomal protein S10	4187971	312
ECs4191	elongation factor G	4191306	2115
ECs4192	30S ribosomal protein S7	4193517	471
ECs4193	30S ribosomal protein S12	4194084	375
ECs4194	sulfur transfer complex subunit TusB	4194584	288
ECs4196	sulfur transfer complex subunit TusD	4195238	387
ECs4197	hypothetical protein	4195624	723
ECs4198	FKBP-type peptidylprolyl isomerase	4196513	813
ECs4199	hypothetical protein	4197546	219
ECs4200	FKBP-type peptidylprolyl isomerase	4197813	591
ECs4203	ABC transporter ATP-binding protein	4201195	1914
ECs4204	hydrolase	4203108	1023
ECs4205	hypothetical protein	4204124	219
ECs4206	phosphoribulokinase	4204396	870
ECs4207	hypothetical protein	4205320	405
ECs4208	cAMP-regulatory protein	4206026	633
ECs4209	hypothetical protein	4206709	2091
ECs4211	para-aminobenzoate synthase component II	4210172	564
ECs4212	cell filamentation protein Fic	4210767	603
ECs4213	hypothetical protein	4211359	168
ECs4215	hypothetical protein	4212474	1182
ECs4216	nitrite reductase (NAD(P)H) subunit	4213917	2544
ECs4217	nitrite reductase small subunit	4216457	327
ECs4218	nitrite transporter NirC	4216909	807
ECs4219	siroheme synthase	4217734	1374
ECs4220	hypothetical protein	4219362	168
ECs4226	tryptophanyl-tRNA synthetase	4224830	1005
ECs4228	ribulose-phosphate 3-epimerase	4226578	678
ECs4229	DNA adenine methylase	4227273	837
ECs4230	hypothetical protein	4228216	1287
ECs4231	3-dehydroquinate synthase	4229594	1089
ECs4232	shikimate kinase I	4230739	522
ECs4233	outer membrane porin HofQ	4231661	1239
ECs4236	hypothetical protein	4233629	540
ECs4238	peptidoglycan synthetase	4235066	2553
ECs4239	ADP-ribose diphosphatase NudE	4237783	561
ECs4241	phosphatase	4240863	669
ECs4242	ribosome-associated heat shock protein Hsp15	4241542	402
ECs4243	Hsp33-like chaperonin	4241968	879
ECs4244	transport	4242909	1725
ECs4246	osmolarity sensor protein	4246710	1353
ECs4247	osmolarity response regulator	4248059	720
ECs4248	transcription elongation factor GreB	4249006	477
ECs4249	hypothetical protein	4249678	2223
ECs4252	hypothetical protein	4254903	237
ECs4255	carboxylesterase BioH	4256247	771
ECs4256	DNA uptake protein	4257797	576
ECs4257	gluconate permease	4258733	1317
ECs4259	maltodextrin phosphorylase	4262188	2394
ECs4260	transcriptional regulator MalT	4265193	2706
ECs4266	DNA-binding transcriptional repressor GlpR	4272795	759
ECs4267	intramembrane serine protease GlpG	4273570	831
ECs4268	thiosulfate sulfurtransferase	4274445	327
ECs4269	glycerol-3-phosphate dehydrogenase	4274961	1506
ECs4274	glycogen synthase	4282400	1434
ECs4275	glucose-1-phosphate adenylyltransferase	4283833	1296
ECs4276	glycogen debranching protein	4285146	1974
ECs4277	glycogen branching protein	4287116	2187

ECs4278	aspartate-semialdehyde dehydrogenase	4289575	1104
ECs4279	dITP- and XTP- hydrolase	4290870	594
ECs4285	low affinity gluconate transporter	4294975	1341
ECs4286	gluconate kinase	4296319	528
ECs4287	regulator of gluconate operon	4296985	996
ECs4288	hypothetical protein	4298204	696
ECs4289	dehydrogenase	4299022	1038
ECs4295	glycerophosphodiester phosphodiesterase	4305029	744
ECs4296	glycerol-3-phosphate transporter ATP-binding protein	4305769	1071
ECs4297	glycerol-3-phosphate transporter membrane protein	4306841	846
ECs4299	glycerol-3-phosphate transporter periplasmic binding protein	4308668	1317
ECs4301	leucine/isoleucine/valine transporter ATP-binding protein	4311209	714
ECs4302	leucine/isoleucine/valine transporter ATP-binding protein	4311924	768
ECs4303	leucine/isoleucine/valine transporter permease	4312688	1278
ECs4304	branched-chain amino acid transporter permease LivH	4313962	927
ECs4305	periplasmic binding protein of high-affinity leucine-specific transport system	4314936	1110
ECs4306	hypothetical protein	4316469	384
ECs4309	periplasmic binding protein of high-affinity amino acid transport system	4317799	1161
ECs4310	RNA polymerase factor sigma-32	4319173	855
ECs4311	cell division protein FtsX	4320272	1059
ECs4312	cell division protein FtsE	4321323	669
ECs4316	receptor	4324498	360
ECs4317	hypothetical protein	4324998	627
ECs4318	zinc/cadmium/mercury/lead-transporting ATPase	4325698	2199
ECs4319	sulfur transfer protein SirA	4327998	246
ECs4320	hypothetical protein	4328464	666
ECs4321	hypothetical protein	4329202	558
ECs4323	hypothetical protein	4331112	1050
ECs4342	holo-ACP synthase	4347574	588
ECs4343	periplasmic binding protein for nickel	4348272	1575
ECs4344	nickel transporter permease NikB	4349846	945
ECs4345	nickel transporter permease NikC	4350787	834
ECs4346	nickel transporter ATP-binding protein NikD	4351620	765
ECs4347	nickel transporter ATP-binding protein NikE	4352381	807
ECs4348	nickel responsive regulator	4353193	402
ECs4358	transporter	4360156	1125
ECs4359	ABC transporter ATP-binding protein	4361280	2685
ECs4365	low-affinity phosphate transport protein	4372127	1500
ECs4366	universal stress protein UspB	4373697	336
ECs4367	hypothetical protein	4374423	435
ECs4368	inner membrane transporter YhiP	4375174	1470
ECs4369	methyltransferase	4376692	753
ECs4371	hypothetical protein	4379697	843
ECs4372	glutathione reductase	4380611	1353
ECs4375	arsenate reductase	4384553	426
ECs4377	hypothetical protein	4387074	567
ECs4378	hypothetical protein	4387796	531
ECs4389	acid-resistance protein	4398101	339
ECs4390	acid-resistance protein	4398543	333
ECs4391	acid-resistance membrane protein	4399130	573
ECs4393	multidrug efflux system protein MdtE	4401367	1158
ECs4394	transport system permease	4402549	3114
ECs4395	AraC family transcriptional regulator	4406025	729
ECs4399	trehalase	4411729	1650
ECs4400	regulator	4413429	603
ECs4401	LysR family transcriptional regulator	4414479	972
ECs4402	hypothetical protein	4415499	1014
ECs4403	transporter	4416924	1323
ECs4404	hypothetical protein	4418428	2076
ECs4405	EAL domain-containing protein	4420558	771
ECs4408	C4-dicarboxylate transporter DctA	4424299	1287
ECs4410	oxidoreductase subunit	4427838	3009
ECs4411	endo-1,4-D-glucanase	4431283	1107
ECs4414	hypothetical protein	4437379	537
ECs4415	hypothetical protein	4438143	189
ECs4416	protease	4438604	1572
ECs4417	hypothetical protein	4440175	189
ECs4418	hypothetical protein	4440360	1680
ECs4419	transporter protein	4442709	1272
ECs4421	peptide ABC transporter ATP-binding protein	4445011	984
ECs4422	peptide ABC transporter	4446005	903
ECs4423	peptide ABC transporter permease	4446917	1020
ECs4424	peptide ABC transporter	4448087	1608
ECs4425	phosphoethanolamine transferase	4450607	1692
ECs4434	3-methyladenine DNA glycosylase	4460666	564
ECs4437	outer membrane lipoprotein	4464121	660
ECs4438	2-hydroxyacid dehydrogenase	4464884	975

ECs4440	transcriptional regulator	4467052	291
ECs4441	major cold shock protein	4467623	213
ECs4442	glycyl-tRNA synthetase subunit beta	4468498	2070
ECs4443	glycyl-tRNA synthetase subunit alpha	4470577	912
ECs4444	hypothetical protein	4472057	996
ECs4445	hypothetical protein	4473094	438
ECs4446	hypothetical protein	4473577	354
ECs4448	xylose isomerase	4475613	1323
ECs4449	D-xylose transporter subunit XylF	4477301	993
ECs4450	xylose transporter ATP-binding protein	4478371	1542
ECs4451	membrane component of xylose transport system	4479890	1182
ECs4453	hypothetical protein	4482435	825
ECs4454	periplasmic alpha-amylase	4483579	2031
ECs4455	valine--pyruvate transaminase	4485787	1254
ECs4456	hypothetical protein	4487192	474
ECs4464	aldehyde dehydrogenase	4496306	1539
ECs4466	alcohol dehydrogenase	4499377	1152
ECs4468	selenocysteine synthase	4502558	1392
ECs4469	glutathione S-transferase	4504047	609
ECs4474	hypothetical protein	4512329	363
ECs4475	mannitol-specific PTS system enzyme IIABC components	4513228	1914
ECs4476	mannitol-1-phosphate 5-dehydrogenase	4515236	1149
ECs4477	mannitol repressor protein	4516384	588
ECs4481	L-lactate permease	4524243	1656
ECs4482	DNA-binding transcriptional repressor LldR	4525898	777
ECs4483	L-lactate dehydrogenase	4526671	1191
ECs4484	tRNA/rRNA methyltransferase YibK	4528047	474
ECs4485	serine acetyltransferase	4528573	822
ECs4486	NAD(P)H-dependent glycerol-3-phosphate dehydrogenase	4529474	1020
ECs4487	preprotein translocase subunit SecB	4530493	468
ECs4488	glutaredoxin 3	4531023	252
ECs4489	hypothetical protein	4531416	432
ECs4490	phosphoglyceromutase	4532092	1545
ECs4491	hypothetical protein	4533646	1284
ECs4492	hypothetical protein	4534933	960
ECs4495	2-amino-3-ketobutyrate CoA ligase	4538188	1197
ECs4497	ADP-L-glycero-D-manno-heptose-6-epimerase	4540820	933
ECs4508	3-deoxy-D-manno-octulosonic-acid transferase	4552399	1278
ECs4509	phosphopantetheine adenylyltransferase	4553684	480
ECs4510	formamidopyrimidine-DNA glycosylase	4554202	810
ECs4511	50S ribosomal protein L33	4555109	168
ECs4512	50S ribosomal protein L28	4555297	237
ECs4513	DNA repair protein RadC	4555750	675
ECs4514	bifunctional phosphopantothienoylcysteine decarboxylase/phosphopantothenate synthase	4556590	1221
ECs4515	deoxyuridine 5'-triphosphate nucleotidohydrolase	4557791	456
ECs4516	nucleoid occlusion protein	4558353	597
ECs4517	orotate phosphoribosyltransferase	4558986	642
ECs4519	hypothetical protein	4560536	864
ECs4521	hypothetical protein	4562736	618
ECs4523	guanylate kinase	4565290	624
ECs4524	DNA-directed RNA polymerase subunit omega	4565968	276
ECs4525	bifunctional (p)ppGpp synthetase II/ guanosine-3',5'-bis pyrophosphate 3'-pyrophosphohydrolase	4566262	2109
ECs4526	tRNA guanosine-2'-O-methyltransferase	4568377	690
ECs4527	ATP-dependent DNA helicase RecG	4569072	2082
ECs4529	glutamate transport protein	4572007	1206
ECs4530	transporter	4573492	1392
ECs4531	hypothetical protein	4575004	1710
ECs4533	transporter	4579094	1383
ECs4599	hypothetical protein	4629083	480
ECs4600	hypothetical protein	4629588	426
ECs4603	sugar phosphate antiporter	4632908	1392
ECs4605	sensory histidine kinase UhpB	4635766	1503
ECs4606	UhpA family transcriptional regulator	4637268	591
ECs4611	acetolactate synthase 1 regulatory subunit	4641277	291
ECs4612	acetolactate synthase catalytic subunit	4641571	1689
ECs4613	ilvB operon leader peptide	4643365	99
ECs4614	multidrug resistance protein D	4644391	1191
ECs4615	transcriptional regulator	4645589	498
ECs4616	hypothetical protein	4646083	363
ECs4617	hypothetical protein	4646435	348
ECs4625	hypothetical protein	4655596	1662
ECs4626	heat shock chaperone IbpB	4657453	429
ECs4627	heat shock protein IbpA	4657993	414
ECs4628	hypothetical protein	4658712	333
ECs4629	hypothetical protein	4659046	1251
ECs4630	oxidoreductase	4660361	1065
ECs4632	sugar phosphatase	4662373	813

ECs4634	DNA gyrase subunit B	4663938	2415
ECs4635	recombination protein F	4666381	1074
ECs4636	DNA polymerase III subunit beta	4667454	1101
ECs4637	chromosomal replication initiation protein	4668559	1404
ECs4638	50S ribosomal protein L34	4670569	141
ECs4639	ribonuclease P	4670726	360
ECs4640	inner membrane protein translocase component YidC	4671309	1647
ECs4641	tRNA modification GTPase TrmE	4673061	1365
ECs4644	tryptophanase leader peptide	4677144	75
ECs4645	tryptophanase	4677439	1416
ECs4647	multidrug efflux system protein MdtL	4680324	1176
ECs4648	DNA-binding transcriptional regulator YidZ	4681474	960
ECs4649	hypothetical protein	4682578	762
ECs4650	hypothetical protein	4683361	567
ECs4651	membrane/transport protein	4683981	1338
ECs4660	transcriptional regulator PhoU	4693561	726
ECs4661	phosphate transporter ATP-binding protein	4694301	774
ECs4662	phosphate transporter permease PtsA	4695257	891
ECs4663	phosphate transporter permease PstC	4696147	960
ECs4664	phosphate ABC transporter substrate-binding protein	4697193	1041
ECs4671	glucosamine--fructose-6-phosphate aminotransferase	4705284	1830
ECs4672	bifunctional N-acetylglucosamine-1-phosphate uridylyltransferase/glucosamine-1-phosphate acetyltransferase	4707275	1371
ECs4673	ATP synthase F0F1 subunit epsilon	4708997	420
ECs4674	ATP synthase F0F1 subunit beta	4709437	1383
ECs4676	ATP synthase F0F1 subunit alpha	4711760	1542
ECs4677	ATP synthase F0F1 subunit delta	4713314	534
ECs4678	ATP synthase F0F1 subunit B	4713862	471
ECs4679	ATP synthase F0F1 subunit C	4714394	240
ECs4680	ATP synthase F0F1 subunit A	4714680	816
ECs4681	F0F1 ATP synthase subunit I	4715504	381
ECs4683	tRNA uridine 5-carboxymethylaminomethyl modification protein GidA	4717188	1890
ECs4684	flavodoxin	4719456	444
ECs4685	AsnC family transcriptional regulator	4719989	459
ECs4686	asparagine synthetase AsnA	4720599	993
ECs4687	hypothetical protein	4721596	1452
ECs4688	regulatory ATPase RavA	4723041	1497
ECs4689	potassium transport protein Kup	4724760	1869
ECs4690	D-ribose pyranase	4726795	420
ECs4691	sugar ABC transporter ATP-binding protein	4727222	1506
ECs4692	ribose ABC transporter permease	4728732	966
ECs4693	D-ribose transporter subunit RbsB	4729722	891
ECs4694	ribokinase	4730738	930
ECs4696	transporter	4732629	1428
ECs4697	hypothetical protein	4734079	693
ECs4698	transcriptional regulator HdfR	4740572	840
ECs4699	hypothetical protein	4741530	339
ECs4700	ATP-dependent protease	4741893	1551
ECs4701	ilvG operon leader peptide	4743766	99
ECs4703	acetolactate synthase 2 regulatory subunit	4745647	264
ECs4704	branched-chain amino acid aminotransferase	4745930	930
ECs4705	dihydroxy-acid dehydratase	4746924	1851
ECs4706	threonine dehydratase	4748777	1545
ECs4707	DNA-binding transcriptional regulator IlvY	4750373	894
ECs4708	ketol-acid reductoisomerase	4751416	1476
ECs4709	peptidyl-prolyl cis-trans isomerase C	4752937	282
ECs4711	ATP-dependent DNA helicase Rep	4754083	2022
ECs4712	guanosine pentaphosphate phosphohydrolase	4756151	1485
ECs4713	ATP-dependent RNA helicase RhlB	4757771	1266
ECs4714	thioredoxin	4759113	384
ECs4715	rho operon leader peptide	4759637	102
ECs4716	transcription termination factor Rho	4759823	1260
ECs4717	UDP-GlcNAc:undecaprenylphosphate GlcNAc-1-phosphate transferase	4761322	1104
ECs4718	lipopolysaccharide biosynthesis protein WzzE	4762434	1050
ECs4720	UDP-N-acetyl-D-mannosamine dehydrogenase	4764666	1263
ECs4721	dTDP-glucose 4,6-dehydratase	4765928	1068
ECs4722	glucose-1-phosphate thymidyltransferase	4767014	882
ECs4723	TDP-fucosamine acetyltransferase	4768002	546
ECs4724	TDP-4-oxo-6-deoxy-D-glucose transaminase	4768552	1131
ECs4727	common antigen polymerase	4772007	1353
ECs4728	UDP-N-acetyl-D-mannosaminuronic acid transferase	4773362	741
ECs4729	transporter	4774293	1386
ECs4730	arylsulfatase	4776589	1236
ECs4732	protoheme IX biogenesis protein	4780326	1197
ECs4734	uroporphyrinogen-III synthase	4782746	741
ECs4735	porphobilinogen deaminase	4783483	963
ECs4740	hypothetical protein	4789241	708
ECs4741	site-specific tyrosine recombinase XerC	4789945	897

ECs4742	flavin mononucleotide phosphatase	4790841	717
ECs4743	DNA-dependent helicase II	4791641	2163
ECs4750	hypothetical protein	4800540	468
ECs4751	phospholipase A	4801172	870
ECs4752	ATP-dependent DNA helicase RecQ	4802168	1836
ECs4754	homoserine/homoserine lactone efflux protein	4804749	621
ECs4755	lysophospholipase L2	4805480	1023
ECs4756	sugar phosphatase	4806510	801
ECs4757	hypothetical protein	4807386	900
ECs4758	regulator for metE and metH	4808173	954
ECs4759	5- methyltetrahydropteroyltrimethylglutamate/homocysteine S-methyltransferase	4809362	2262
ECs4761	uridine phosphorylase	4812740	762
ECs4762	DNA recombination protein RmuC	4813642	1428
ECs4763	ubiquinone/menaquinone biosynthesis methyltransferase	4815164	756
ECs4764	hypothetical protein	4815933	606
ECs4765	ubiquinone biosynthesis protein UbiB	4816535	1641
ECs4766	twin arginine translocase A	4818254	270
ECs4767	sec-independent translocase	4818527	516
ECs4768	twin-arginine protein translocation system subunit TatC	4819045	777
ECs4769	DNase TatD	4819863	783
ECs4770	transcriptional activator RfaH	4820642	489
ECs4771	3-octaprenyl-4-hydroxybenzoate carboxy-lyase	4821297	1494
ECs4772	FMN reductase	4822836	702
ECs4773	3-ketoacyl-CoA thiolase	4823729	1164
ECs4774	multifunctional fatty acid oxidation complex subunit alpha	4824902	2190
ECs4775	proline dipeptidase	4827281	1332
ECs4776	hypothetical protein	4828612	615
ECs4777	potassium transporter	4829265	1452
ECs4778	protoporphyrinogen oxidase	4830728	546
ECs4779	molybdopterin-guanine dinucleotide biosynthesis protein B	4836858	513
ECs4780	molybdopterin-guanine dinucleotide biosynthesis protein MobA	4837367	585
ECs4781	hypothetical protein	4838021	270
ECs4782	serine/threonine protein kinase	4838367	987
ECs4783	protein disulfide isomerase I	4839370	627
ECs4787	ribosome biogenesis GTP-binding protein YsxC	4846086	633
ECs4788	hypothetical protein	4847300	507
ECs4789	coproporphyrinogen III oxidase	4847995	1374
ECs4790	nitrogen regulation protein NR(I)	4849780	1410
ECs4791	nitrogen regulation protein NR(II)	4851201	1050
ECs4792	glutamine synthetase	4852424	1410
ECs4793	GTP-binding protein	4854206	1824
ECs4808	phosphatase	4872124	600
ECs4809	ribonuclease BN	4872717	873
ECs4810	D-tyrosyl-tRNA(Tyr) deacylase	4873586	438
ECs4811	acetyltransferase	4874020	990
ECs4817	formate dehydrogenase accessory protein FdhE	4878935	930
ECs4818	formate dehydrogenase-O subunit gamma	4879861	636
ECs4819	formate dehydrogenase-O iron-sulfur subunit	4880493	903
ECs4821	formate dehydrogenase accessory protein	4884652	834
ECs4828	hypothetical protein	4893360	315
ECs4830	L-rhamnose isomerase	4894683	1260
ECs4831	rhamnulokinase	4895939	1470
ECs4834	superoxide dismutase	4900764	627
ECs4836	hypothetical protein	4902782	675
ECs4837	two-component sensor protein	4903562	1374
ECs4838	CpxR family transcriptional regulator	4904932	699
ECs4839	repressor CpxP	4905780	501
ECs4840	ferrous iron efflux protein F	4906429	903
ECs4842	sulfate transporter subunit	4908793	990
ECs4844	triosephosphate isomerase	4910699	768
ECs4845	hypothetical protein	4911574	600
ECs4846	hypothetical protein	4912274	441
ECs4848	universal stress protein UspD	4913252	429
ECs4849	ferredoxin-NADP reductase	4913685	747
ECs4850	fructose 1,6-bisphosphatase II	4914528	1011
ECs4856	ribonuclease activity regulator protein RraA	4920337	486
ECs4857	1,4-dihydroxy-2-naphthoate octaprenyltransferase	4920915	927
ECs4858	ATP-dependent protease ATP-binding protein HslU	4921908	1332
ECs4859	ATP-dependent protease peptidase subunit	4923249	531
ECs4863	50S ribosomal protein L31	4928505	213
ECs4867	transcriptional repressor protein MetJ	4934960	318
ECs4868	cystathionine gamma-synthase	4935554	1161
ECs4869	bifunctional aspartate kinase II/homoserine dehydrogenase II	4936717	2433
ECs4870	5,10-methylenetetrahydrofolate reductase	4939498	891
ECs4871	hydroperoxidase HPI(I)	4940717	2181
ECs4873	hypothetical protein	4943923	618
ECs4874	glycerol dehydrogenase	4944814	1104

ECs4875	fructose-6-phosphate aldolase	4945928	663
ECs4876	hypothetical protein	4948712	492
ECs4879	PTS system fructose-like transporter subunit EIIB	4950506	321
ECs4880	formate acetyltransferase 2	4950877	2298
ECs4881	pyruvate formate lyase II activase	4953179	840
ECs4882	fructose-like phosphotransferase EIIB subunit 3	4954020	342
ECs4883	AraC family transcriptional regulator	4954348	852
ECs4884	hypothetical protein	4955414	1734
ECs4885	phosphoenolpyruvate carboxylase	4957330	2652
ECs4886	acetylornithine deacetylase	4960333	1152
ECs4887	N-acetyl-gamma-glutamyl-phosphate reductase	4961638	1005
ECs4888	acetylglutamate kinase	4962653	774
ECs4889	argininosuccinate lyase	4963487	1374
ECs4890	DNA-binding transcriptional regulator OxyR	4965127	918
ECs4895	hypothetical protein	4971036	360
ECs4896	tRNA (uracil-5-)-methyltransferase	4971435	1101
ECs4898	glutamate racemase	4974693	858
ECs4899	UDP-N-acetylenolpyruvoylglucosamine reductase	4981074	1029
ECs4900	biotin--protein ligase	4982099	966
ECs4901	pantothenate kinase	4983093	951
ECs4904	preprotein translocase subunit SecE	4986375	384
ECs4905	transcription antitermination protein NusG	4986760	546
ECs4906	50S ribosomal protein L11	4987464	429
ECs4907	50S ribosomal protein L1	4987896	705
ECs4909	50S ribosomal protein L7/L12	4989456	366
ECs4910	DNA-directed RNA polymerase subunit beta	4990141	4029
ECs4911	DNA-directed RNA polymerase subunit beta'	4994246	4224
ECs4913	thiamine biosynthesis protein ThiH	4999560	1134
ECs4914	thiazole synthase	5000690	771
ECs4915	thiamine biosynthesis protein ThiF	5001646	756
ECs4916	thiamine-phosphate pyrophosphorylase	5002394	636
ECs4917	thiamine biosynthesis protein ThiC	5003029	1896
ECs4918	anti-RNA polymerase sigma 70 factor	5005157	477
ECs4919	NADH pyrophosphatase	5005728	774
ECs4920	uroporphyrinogen decarboxylase	5006541	1065
ECs4921	endonuclease V	5007615	672
ECs4922	hypothetical protein	5008329	591
ECs4923	transcriptional regulator HU subunit alpha	5009106	273
ECs4924	hypothetical protein	5009391	696
ECs4925	zinc resistance protein	5010088	426
ECs4927	transcriptional regulatory protein ZraR	5012124	1326
ECs4928	phosphoribosylamine--glycine ligase	5013446	1290
ECs4929	bifunctional phosphoribosylaminoimidazolecarboxamide formyltransferase/IMP cyclohydrolase	5014747	1590
ECs4931	homoserine O-succinyltransferase	5022680	930
ECs4932	malate synthase	5023878	1602
ECs4933	isocitrate lyase	5025509	1305
ECs4936	lclR family transcriptional regulator	5031205	825
ECs4937	B12-dependent methionine synthase	5032229	3684
ECs4939	peptidase E	5037854	690
ECs5005	23S rRNA pseudouridine synthase F	5083746	873
ECs5007	aspartate kinase	5085144	1350
ECs5008	glucose-6-phosphate isomerase	5087018	1650
ECs5010	hypothetical protein	5089536	639
ECs5011	hypothetical protein	5090171	738
ECs5012	hypothetical protein	5090908	2097
ECs5013	phosphate-starvation-inducible protein PsiE	5093599	411
ECs5015	maltose transporter permease	5095900	891
ECs5017	maltose ABC transporter periplasmic protein	5098503	1191
ECs5018	maltose/maltodextrin transporter ATP-binding protein	5100058	1116
ECs5019	maltoporin	5101245	1341
ECs5022	chorismate pyruvate lyase	5105688	498
ECs5023	4-hydroxybenzoate octaprenyltransferase	5106198	873
ECs5024	glycerol-3-phosphate acyltransferase	5107225	2424
ECs5025	diacylglycerol kinase	5109819	369
ECs5026	LexA repressor	5110297	609
ECs5028	stress-response protein	5112419	210
ECs5029	zinc uptake transcriptional repressor	5112670	516
ECs5032	phage shock protein G	5115994	243
ECs5036	aromatic amino acid aminotransferase	5120268	1194
ECs5038	hypothetical protein	5123384	417
ECs5039	hypothetical protein	5123804	357
ECs5040	excinuclease ABC subunit A	5124195	2823
ECs5041	single-stranded DNA-binding protein	5127272	537
ECs5043	hypothetical protein	5128617	1587
ECs5044	DNA-binding transcriptional regulator SoxS	5130206	324
ECs5045	redox-sensitive transcriptional activator SoxR	5130615	465
ECs5046	hypothetical protein	5131625	1350

ECs5047	hypothetical protein	5133125	1650
ECs5049	acetate permease	5136401	1650
ECs5050	hypothetical protein	5138047	315
ECs5051	acetyl-CoA synthetase	5138562	1959
ECs5053	cytochrome c nitrite reductase pentaheme subunit	5142388	573
ECs5054	NrfC	5142957	672
ECs5055	hypothetical protein	5143625	957
ECs5057	formate-dependent nitrite reductase complex subunit NrfF	5146312	384
ECs5058	formate-dependent nitrite reductase complex subunit NrfG	5146692	597
ECs5059	glutamate/aspartate:proton symporter	5147630	1314
ECs5064	multidrug resistance protein MdtN	5155763	1032
ECs5065	hypothetical protein	5156813	276
ECs5077	ribose 1,5-bisphosphokinase	5170380	558
ECs5078	protein PhnM	5170937	1137
ECs5079	phosphonate ABC transporter ATP-binding protein	5172070	681
ECs5080	phosphonate C-P lyase system protein PhnK	5172861	759
ECs5081	protein PhnJ	5173616	846
ECs5082	protein PhnI	5174454	1065
ECs5083	carbon-phosphorus lyase complex subunit	5175518	585
ECs5084	protein PhnG	5176099	453
ECs5085	phosphonate metabolism transcriptional regulator PhnF	5176552	726
ECs5087	periplasmic binding protein component of Pn transporter	5178183	1017
ECs5089	hypothetical protein	5180145	444
ECs5090	hypothetical protein	5180847	336
ECs5091	hypothetical protein	5181584	2229
ECs5092	hypothetical protein	5183809	879
ECs5094	sensor protein BasS/PmrB	5186630	1092
ECs5095	DNA-binding transcriptional regulator BasR	5187731	669
ECs5097	arginine:agmatin antiporter	5190143	1338
ECs5098	AraC family transcriptional regulator	5191617	762
ECs5099	biodegradative arginine decarboxylase	5192703	2271
ECs5100	DNA-binding transcriptional regulator MeiR	5195169	909
ECs5101	alpha-galactosidase	5196360	1356
ECs5103	hypothetical protein	5199378	630
ECs5104	fumarase B	5200130	1647
ECs5105	anaerobic C4-dicarboxylate transporter	5201854	1341
ECs5106	DcuR family transcriptional regulator	5203765	720
ECs5107	sensory histidine kinase DcuS	5204481	1632
ECs5108	hypothetical protein	5206293	231
ECs5109	hypothetical protein	5206535	273
ECs5110	hypothetical protein	5207034	297
ECs5116	transcriptional regulator	5217184	600
ECs5117	thiol:disulfide interchange protein	5217796	1698
ECs5118	divalent-cation tolerance protein CutA	5219469	339
ECs5120	aspartate ammonia-lyase	5221342	1437
ECs5121	FxsA protein	5223115	477
ECs5122	hypothetical protein	5223607	1257
ECs5123	co-chaperonin GroES	5225139	294
ECs5124	molecular chaperone GroEL	5225476	1647
ECs5125	hypothetical protein	5227227	387
ECs5127	hypothetical protein	5228910	1029
ECs5128	elongation factor P	5229980	567
ECs5130	outer membrane lipoprotein Blc	5231470	534
ECs5132	fumarate reductase subunit D	5233287	360
ECs5133	fumarate reductase subunit C	5233657	396
ECs5134	fumarate reductase iron-sulfur subunit	5234063	735
ECs5136	lysyl-tRNA synthetase	5236923	978
ECs5138	hypothetical protein	5239772	3324
ECs5139	phosphatidylserine decarboxylase	5243117	969
ECs5140	ribosome-associated GTPase	5244182	1053
ECs5141	oligoribonuclease	5245329	546
ECs5143	hypothetical protein	5246653	1140
ECs5144	ATPase	5249310	462
ECs5145	N-acetylmuramoyl-L-alanine amidase II	5249790	1338
ECs5146	DNA mismatch repair protein	5251137	1848
ECs5148	RNA-binding protein Hfq	5254013	309
ECs5149	GTPase HflX	5254398	1281
ECs5150	FtsH protease regulator HflK	5255764	1260
ECs5152	hypothetical protein	5258112	198
ECs5154	transcriptional repressor NsrR	5259916	426
ECs5162	synthetase/amidase	5266755	1164
ECs5163	isovaleryl CoA dehydrogenase	5267987	1641
ECs5164	hypothetical protein	5269744	288
ECs5165	biofilm stress and motility protein A	5270168	330
ECs5167	transcriptional repressor UlaR	5271425	756
ECs5168	L-ascorbate 6-phosphate lactonase	5272288	1071
ECs5169	PTS system ascorbate-specific transporter subunit IIC	5273707	1398

ECs5170	PTS system L-ascorbate-specific transporter subunit IIB	5275120	306
ECs5171	PTS system L-ascorbate-specific transporter subunit IIA	5275435	465
ECs5172	3-keto-L-gulonate-6-phosphate decarboxylase	5275913	651
ECs5173	L-xylulose 5-phosphate 3-epimerase	5276573	855
ECs5174	L-ribulose-5-phosphate 4-epimerase	5277427	687
ECs5175	hypothetical protein	5278242	276
ECs5176	30S ribosomal protein S6	5278844	396
ECs5177	primosomal replication protein N	5279246	315
ECs5178	30S ribosomal protein S18	5279565	228
ECs5179	50S ribosomal protein L9	5279834	450
ECs5185	peptidyl-prolyl cis-trans isomerase	5284409	621
ECs5187	iron-sulfur cluster repair di-iron protein	5286795	663
ECs5188	transmembrane subunit	5287565	975
ECs5189	hypothetical protein	5289587	381
ECs5190	oxidoreductase	5288638	861
ECs5192	adenosine-3'(2'),5'-bisphosphate nucleotidase	5292218	741
ECs5195	hypothetical protein	5295011	246
ECs5196	transporter	5295352	1344
ECs5197	methionine sulfoxide reductase A	5297018	639
ECs5198	hypothetical protein	5297862	1734
ECs5199	hypothetical protein	5299592	3780
ECs5200	hypothetical protein	5303374	342
ECs5204	inorganic pyrophosphatase	5304602	531
ECs5205	LACI-type transcriptional regulator	5305442	957
ECs5207	transport system permease	5308051	1026
ECs5208	ABC transporter permease	5309087	972
ECs5209	fructose-1,6-bisphosphatase	5310091	999
ECs5210	UDP-N-acetylmuramate:L-alanyl-gamma-D-glutamyl- meso-diaminopimelate ligase	5311265	1374
ECs5211	hypothetical protein	5312794	552
ECs5212	peptidase PmbA	5313439	1353
ECs5214	anaerobic ribonucleotide reductase-activating protein	5315406	465
ECs5215	anaerobic ribonucleoside triphosphate reductase	5316060	2139
ECs5216	trehalose-6-phosphate hydrolase	5318592	1656
ECs5218	trehalose repressor	5321837	948
ECs5219	magnesium-transporting ATPase MgtA	5323163	2697
ECs5220	hypothetical protein	5326065	426
ECs5221	aspartate carbamoyltransferase	5326524	462
ECs5222	aspartate carbamoyltransferase	5326998	936
ECs5224	pyrBI operon leader peptide	5327937	135
ECs5232	hypothetical protein	5333970	417
ECs5235	valyl-tRNA synthetase	5336379	2856
ECs5236	DNA polymerase III subunit chi	5339234	444
ECs5237	leucyl aminopeptidase	5340031	1512
ECs5238	hypothetical protein	5341809	1101
ECs5239	hypothetical protein	5342909	1083
ECs5241	oxidoreductase	5345784	1020
ECs5281	mannonate dehydratase	5406458	1185
ECs5282	D-mannonate oxidoreductase	5407723	1461
ECs5283	DNA-binding transcriptional repressor UxuR	5409398	774
ECs5286	isoaspartyl dipeptidase	5413176	1173
ECs5287	hypothetical protein	5414361	462
ECs5297	hypothetical protein	5427047	768
ECs5298	hypothetical protein	5427824	1152
ECs5299	hypothetical protein	5429091	1272
ECs5311	GTP-binding protein YjiA	5445573	957
ECs5312	hypothetical protein	5446540	204
ECs5313	carbon starvation protein	5446793	2166
ECs5315	methyl-accepting chemotaxis protein I	5450007	1665
ECs5318	oxidoreductase	5454334	1038
ECs5319	phosphoglycerol transferase I	5455508	2292
ECs5320	hypothetical protein	5458053	498
ECs5321	DNA replication protein DnaC	5458596	738
ECs5322	primosomal protein Dnal	5459336	540
ECs5323	hypothetical protein	5459982	474
ECs5324	structural protein	5460446	825
ECs5327	ferric hydroximate transport ferric iron reductase	5463235	789
ECs5329	16S ribosomal RNA m2G1207 methyltransferase	5464715	1032
ECs5330	DNA polymerase III subunit psi	5465849	414
ECs5331	ribosomal-protein-alanine N-acetyltransferase	5466231	447
ECs5332	nucleotidase	5466692	678
ECs5334	hypothetical protein	5469442	606
ECs5335	hypothetical protein	5470457	1074
ECs5337	activating enzyme	5472523	864
ECs5340	deoxyribose-phosphate aldolase	5475165	780
ECs5341	thymidine phosphorylase	5476199	1194
ECs5342	phosphopentomutase	5477444	1224
ECs5343	purine nucleoside phosphorylase	5478724	720

ECs5345	unknown domain/lipoate-protein ligase A fusion protein	5479899	1689
ECs5346	phosphoserine phosphatase	5481693	969
ECs5347	DNA repair protein RadA	5482710	1383
ECs5348	nicotinamide-nucleotide adenylyltransferase	5484113	1233
ECs5349	ABC transporter ATP-binding protein	5485653	1668
ECs5350	lytic murein transglycosylase	5487531	1938
ECs5351	Trp operon repressor	5489558	327
ECs5352	NTPase	5490031	513
ECs5353	phosphoglycerate mutase	5490595	648
ECs5354	right origin-binding protein	5491239	870
ECs5355	hypothetical protein	5492319	474
ECs5356	DNA-binding response regulator CreB	5492805	690
ECs5359	two-component response regulator	5496388	717
ECs5365	hypothetical protein	217269	219
ECs5381	hypothetical protein	695598	219
ECs5382	hypothetical protein	713651	198
ECs5391	hypothetical protein	858702	114
ECs5432	hypothetical protein	1845142	174
ECs5439	hypothetical protein	1978560	267
ECs5463	hypothetical protein	2510779	216
ECs5464	hypothetical protein	2588660	252
ECs5486	hypothetical protein	3103070	336
ECs5495	hypothetical protein	3252320	219
ECs5496	hypothetical protein	3308886	201
ECs5497	hypothetical protein	3345262	153
ECs5498	hypothetical protein	3396071	225
ECs5530	hypothetical protein	4173443	219
ECs5532	hypothetical protein	4198498	201
ECs5536	hypothetical protein	4471583	300
ECs5537	hypothetical protein	4564893	258
ECs5549	hypothetical protein	4761092	219
ECs5556	hypothetical protein	4788180	204
ECs5575	sulfur carrier protein ThiS	5001462	201
ECs5586	entericidin B membrane lipoprotein	5230834	147
ECs5596	TrpR binding protein WrbA	1245465	546
