Table S1. ***Arcobacter butzleri*** **predicted open reading frames and their functional annotation**

ORF	Start	End	Len (AA)	Strand	Gene	Functional annotation
AB0001	1	1314	438	+	*dnaA*	Chromosomal replication initiator protein DnaA
AB0002	1475	2542	356	+	*dnaN*	DNA polymerase III, beta subunit
AB0003	2567	4885	773	+	*gyrB*	DNA gyrase, subunit B
AB0004	4900	5868	323	-		Probable thioredoxin reductase
AB0005	5984	6364	127	+	*queF*	7-cyano-7-deazaguanine reductase
AB0006	6377	6961	195	+		Hypothetical protein
AB0007	7173	7577	135	+		Conserved hypothetical protein, putative integral membrane protein
AB0008	7576	8379	268	-		Conserved hypothetical protein, possible methyltransferase
AB0009	8384	9235	284	-	*modD*	Molybdenum ABC transporter, ATP-binding protein
AB0010	9225	9929	235	-	*modB*	Molybdenum ABC transporter, permease protein
AB0011	9925	10323	133	-		Conserved hypothetical protein
AB0012	10323	11066	248	-	*modA*	Molybdenum ABC transporter, periplasmic molybdate-binding protein
AB0013	11079	11858	260	-	*modE*	Molybdenum-binding protein, N-terminal:molybdenum-pterin binding domain
AB0014	11985	13226	414	+		Conserved hypothetical membrane protein
AB0015	13402	14226	275	-		Transcriptional regulator, LysR family
AB0016	14324	15499	392	+		Conserved hypothetical protein, putative MFS permease
AB0017	15585	24278	2898	+		Hypothetical membrane protein
AB0018	24343	25242	300	-		Ribosomal large subunit pseudouridine synthase
AB0019	25356	26681	442	+	*purB*	Adenylosuccinate lyase
AB0020	26695	29076	794	+	*nrdA*	Ribonucleoside-diphosphate reductase, alpha chain
AB0021	29209	30225	339	+	*nrdB*	Ribonucleoside-diphosphate reductase, beta chain
AB0022	30386	31246	287	+		Hypothetical protein
AB0023	31307	31717	137	+		Conserved hypothetical protein
AB0024	31737	31985	83	+		Hypothetical protein
AB0025	32050	32997	316	+		Hypothetical protein, OmpA domain
AB0026	33004	33474	157	+		Conserved hypothetical protein
AB0027	33486	34469	328	-		Zinc-containing alcohol dehydrogenase superfamily protein
AB0028	34511	34915	135	+		Conserved hypothetical protein (DUF24 domain protein)
AB0029	34923	35816	298	-	*gpsA*	Glycerol 3-phosphate dehydrogenase
AB0030	35821	37251	477	-	*gatB*	Glutamyl-tRNA(Gln) amidotransferase, subunit B
AB0031	37264	38085	274	-		Conserved hypothetical protein
AB0032	38165	40999	945	-		Oxidoreductase, FAD-binding/iron-sulfur cluster-binding protein
AB0033	41121	42758	546	-	*lctP*	L-lactate permease
AB0034	42852	43493	214	-		Two-component response regulator

AB0035	43498	45687	730	-		Two-component sensor histidine kinase
AB0036	45715	46299	195	-		Conserved hypothetical protein (DUF162 domain protein)
AB0037	46295	47671	459	-		Iron-sulfur cluster binding protein, putative
AB0038	47671	48417	249	-		Fe-S oxidoreductase
AB0039	48513	48953	147	-		dCMP deaminase, putative
AB0040	49110	49580	157	+	*accB*	Acetyl-CoA carboxylase, biotin carboxyl carrier protein
AB0041	49593	50942	450	+	*accC1*	Acetyl CoA carboxylase, biotin carboxylase subunit
AB0042	51167	52714	516	+		ATP-dependent RNA helicase, DEAD box family
AB0044	52925	54517	531	+		Phosphate permease, putative
AB0045	54761	55492	244	+		Conserved hypothetical protein, putative permease
AB0046	55500	57284	595	+	*asnB1*	Asparagine synthetase (glutamine-hydrolyzing)
AB0047	57414	57848	145	-		Hypothetical protein
AB0048	58148	59545	466	-		PhoH family protein
AB0049	59541	60089	183	-		Conserved hypothetical integral membrane protein
AB0050	60062	61243	394	-		ATPase, AAA family protein
AB0051	61230	62054	275	-	*rluB*	Ribosomal large subunit pseudouridine synthase B
AB0052	62054	63013	320	-		Carbohydrate isomerase, KpsF/GutQ family
AB0053	63029	64948	640	-		Conserved hypothetical protein, predicted hydrolase of the metallo-beta-lactamase superfamily
AB0054	64935	65729	265	-	*ksgA*	Dimethyladenosine transferase
AB0055	65806	66564	253	+	*hisF1*	Imidazoleglycerol phosphate synthase, cyclase subunit
AB0056	66569	67249	227	+		Conserved hypothetical protein
AB0057	67249	67782	178	+		Conserved hypothetical protein, possible purine nucleoside phosphorylase
AB0058	67796	68875	360	+		Conserved hypothetical protein, radical SAM enzyme, Cfr family
AB0060	68967	70373	469	+	*gltX1*	Glutamyl-tRNA synthetase
AB0061	70400	70693	98	+	*rbpA*	RNA-binding region RNP-1 (RNA recognition motif)
AB0062	70806	71462	219	+		Two-component response regulator
AB0063	71440	72588	383	+		Two-component sensor histidine kinase
AB0064	72655	73035	127	+		Conserved hypothetical protein
AB0065	73038	74222	395	+		Hypothetical protein
AB0066	74222	75223	334	+	*czcB*	Cation efflux system, membrane fusion protein
AB0067	75233	78337	1035	+	*czcA*	Heavy metal efflux pump
AB0068	78389	78949	187	+		Conserved hypothetical periplasmic protein
AB0070	78986	80311	442	-		Fibronectin/fibrinogen-binding protein, putative
AB0071	80405	80719	105	+		Conserved hypothetical protein
AB0072	80789	82390	534	+		Conserved hypothetical protein
AB0073	82423	82935	171	-		Hypothetical protein

AB0074	83047	84852	602	+	*thrS*	Threonyl-tRNA synthetase
AB0075	84852	85376	175	+	*infC*	Translation initiation factor IF-3
AB0076	85518	85712	65	+	*rpmI*	50S ribosomal protein L35
AB0077	85814	86167	118	+	*rplT*	50S ribosomal protein L20
AB0078	86246	87439	398	-		Rhodanese-like sulfur transferase
AB0079	87426	87659	78	-		Hypothetical protein
AB0080	87672	89138	489	-		Conserved hypothetical protein, putative sulfide:quinone reductase
AB0081	89222	89821	200	-	*mobA*	Molybdopterin-guanine dinucleotide biosynthesis protein
AB0082	89824	91101	426	-	*leuC*	3-isopropylmalate dehydratase, large subunit
AB0083	91173	91634	154	-	*lspA*	Lipoprotein signal peptidase
AB0084	91634	92965	444	-	*glmM*	Phosphoglucosamine mutase
AB0085	93049	93306	86	+	*rpsT*	30S ribosomal protein S20
AB0086	93313	94377	355	+	*prfA*	Peptide chain release factor 1
AB0087	94401	94586	62	+		Hypothetical protein
AB0088	94665	95717	351	+	*pstS*	Phosphate ABC transporter, periplasmic phosphate-binding protein
AB0089	95790	97517	576	+		EAL/GGDEF domain protein
AB0090	97552	98505	318	+	*pstC*	Phosphate ABC transporter, permease protein
AB0091	98505	99686	394	+	*pstA*	Phosphate ABC transporter, permease protein
AB0092	99705	100472	256	+	*pstB*	Phosphate transporter, ATP-binding protein
AB0093	100475	101140	222	+		Phosphate transport system regulatory protein PhoU, putative
AB0094	101167	101568	134	+		Hypothetical protein
AB0095	101561	102235	225	+		Two-component response regulator
AB0096	102232	103614	461	+		Two-component sensor histidine kinase
AB0097	103693	104109	139	+	*rplM*	50S ribosomal protein L13
AB0098	104118	104504	129	+	*rpsI*	30S ribosomal protein S9
AB0099	104560	106107	516	+	*appA*	Oligopeptide ABC transporter, periplasmic substrate-binding protein
AB0100	106120	106764	215	+		Conserved hypothetical protein, HAD-superfamily hydrolase
AB0102	107081	108049	323	+		Conserved hypothetical protein, putative tricarboxylic transport protein TctC
AB0103	108089	108571	161	+		Conserved hypothetical protein, putative tricarboxylic transport protein TctB
AB0104	108571	110085	505	+		Conserved hypothetical protein, putative tricarboxylic transport protein TctA
AB0105	110116	110793	226	+		Two-component response regulator
AB0106	110786	112963	726	+		Two-component sensor histidine kinase
AB0107	113010	113660	217	+	*cynT1*	Carbonic anhydrase
AB0108	113656	114738	361	+		Conserved hypothetical protein, putative ammonia monooxygenase
AB0109	114721	115296	192	-		Hypothetical protein
AB0110	115296	116201	302	-		ABC transporter, periplasmic substrate-binding protein, putative
AB0111	116204	116938	245	-	*iamA*	ABC transporter, ATP-binding protein

AB0112	116942	118051	370	-	*iamB*	ABC transporter, permease protein
AB0113	118133	119041	303	-		Hypothetical protein
AB0114	119037	120617	527	-		Hypothetical protein
AB0115	120758	121270	171	+	*luxS*	Autoinducer-2 production protein LuxS
AB0116	121275	121712	146	+		Hypothetical protein
AB0117	121697	122464	256	+		Conserved hypothetical protein (DUF752 domain protein)
AB0118	122506	123324	273	+	*dacA*	Serine-type D-Ala-D-Ala carboxypeptidase
AB0119	123342	123839	166	-		Conserved hypothetical protein
AB0120	123957	124394	146	+		Putative membrane protein, DoxX family
AB0121	124424	127900	1159	-	*metH*	5-methyltetrahydrofolate--homocysteine methyltransferase
AB0122	128095	129012	306	+	*ilvE*	Branched-chain amino-acid aminotransferase
AB0123	129060	130130	357	+		Conserved hypothetical protein, Band 7 family protein
AB0124	130174	130458	95	+		Hypothetical protein
AB0125	130461	131138	226	+	*hisI*	Phosphoribosyl-AMP cyclohydrolase/ phosphoribosyl-ATP pyrophosphohydrolase
AB0126	131234	131488	85	+		Hypothetical protein
AB0127	131530	132708	393	-	*mrp*	ATP/GTP-binding protein
AB0128	132778	134127	450	-	*thiC*	Thiamine biosynthesis protein ThiC
AB0129	134273	135112	280	+		Conserved hypothetical protein
AB0130	135154	136275	374	+	*ispDF*	2-C-methyl-D-erythritol 4-phosphate cytidylyl transferase/synthase
AB0131	136263	137162	300	+		Two-component response regulator
AB0132	137176	137649	158	+	*pgpA*	Phosphatidylglycerophosphatase A
AB0133	137669	138379	237	+		Hypothetical protein
AB0134	138463	139578	372	-	*carA*	Carbamoylphosphate synthase, small subunit
AB0135	139581	140129	183	-		Conserved hypothetical protein (DUF507 domain protein)
AB0136	140137	141384	416	-	*purA*	Adenylosuccinate synthetase
AB0137	141389	142231	281	-		Conserved hypothetical protein, putative tRNA synthetase
AB0138	142234	143343	370	-		Putative aminotransferase
AB0139	143489	144115	209	+		Conserved hypothetical periplasmic protein
AB0140	144274	144723	150	+		Transcriptional regulator, MarR family
AB0141	144782	145330	183	+		Conserved hypothetical periplasmic protein
AB0142	145357	146130	258	+		Conserved hypothetical protein, LigB family protein
AB0143	146130	146825	232	+	*pirA*	Pirin
AB0144	146885	147910	342	+	*gapB*	Glyceraldehyde-3-phosphate dehydrogenase B
AB0145	147956	148948	331	-	*purM*	Phosphoribosylaminoimidazole synthetase
AB0146	149049	149594	182	+	*speE*	Spermidine synthase
AB0147	149641	150228	196	+	*coaE*	Dephospho-CoA kinase
AB0148	150228	150965	246	+	*dapF*	Diaminopimelate epimerase

AB0149	150993	152159	389	+	*purT*	Phosphoribosylglycinamide formyltransferase 2
AB0150	152171	152638	156	+		Transcriptional regulator, MarR family
AB0151	152646	152951	102	-		Hypothetical protein
AB0152	153038	154255	406	-		Conserved hypothetical protein
	154428	**154501**		**-**		**tRNA-Arg-1 (anticodon: TCG)**
AB0153	154547	155392	282	-	*ubiA*	4-hydroxybenzoate octaprenyltranferase
AB0154	155484	155684	67	+		Hypothetical protein
AB0155	155684	156556	291	+	*miaA*	tRNA delta(2)-isopentenylpyrophosphate transferase
AB0156	156640	156840	67	+	*rpmE*	50S ribosomal protein L31
AB0157	156856	157674	273	+		Conserved hypothetical protein, putative methyltransferase
AB0158	157674	158360	229	+		tRNA methyltransferase, TrmH family
AB0159	158376	159182	269	+		Conserved hypothetical protein
AB0160	159189	160400	404	+	*aspB1*	Aspartate aminotransferase, aminotransferase, classes I and II
AB0161	160528	161787	420	+	*hom*	Homoserine dehydrogenase
AB0162	161886	162659	258	+	*traT*	TraT complement resistance protein precursor
AB0163	162796	163551	252	+	*cdsA*	CDP-diglyceride synthetase CdsA
AB0164	163551	164615	355	+	*dxr*	1-deoxy-D-xylulose 5-phosphate reductoisomerase
AB0165	164608	164898	97	+		Hypothetical protein
AB0166	164894	165457	188	+		Conserved hypothetical protein (DUF1234 domain protein)
AB0167	165463	166461	333	+	*gcp*	O-sialoglycoprotein endopeptidase
AB0168	166465	166809	115	+		Hypothetical protein
AB0169	166844	168226	461	+		Conserved hypothetical protein, putative carbohydrate kinase
AB0170	168226	168534	103	+		Conserved hypothetical periplasmic protein
AB0171	168534	169310	259	+	*thiG*	Thiazole biosynthesis protein ThiG
	169427	**169501**		**+**		**tRNA-Pro (anticodon: TGG)**
	169523	**169596**		**+**		**tRNA-His (anticodon: GTG)**
	169617	**169690**		**+**		**tRNA-Arg-2 (anticodon: TCT)**
	169698	**169779**		**+**		**tRNA-Leu-5 (anticodon: TAG)**
	169790	**169863**		**+**		**tRNA-Gly-1 (anticodon: TCC)**
	169935	**170008**		**+**		**tRNA-Arg-3 (anticodon: TCT)**
	170018	**170091**		**+**		**tRNA-Gly-2 (anticodon: TCC)**
AB0172	170237	172066	610	-	*pycB1*	Pyruvate/oxaloacetate carboxyltransferase
AB0173	172076	172339	88	-		Hypothetical protein
AB0174	172487	173359	291	+		Transcriptional regulator, AraC family
AB0175	173409	174386	326	+		Calcium:sodium antiporter
AB0176	174413	176431	673	-		Methyl-accepting chemotaxis protein
AB0177	176536	179307	924	+		DNA/RNA helicase (DEAD/DEAH BOX family)

AB0178	179388	181304	639	+	*tkt*	Transketolase
AB0179	181425	181775	117	+	*lrgA*	LrgA family protein
AB0180	181768	182487	240	+	*lrgB*	LrgB-like protein
AB0181	182505	182855	117	+		Conserved hypothetical protein
AB0183	182876	183277	134	-		Conserved hypothetical protein (DUF350 domain protein)
AB0184	183344	184786	481	-	*dctA*	C4-dicarboxylate transport protein
AB0185	184871	185506	212	+		Hypothetical protein
AB0186	185509	185880	124	+		Hypothetical protein
AB0187	185873	186520	216	+		CDP-diacylglycerol--glycerol-3-phosphate 3-phosphatidyltransferase-related protein
AB0188	186523	187452	310	+		CDP-diglyceride synthetase/phosphatidate cytidylyltransferase
AB0189	187457	188080	208	+		1-acyl-sn-glycerol-3-phosphate acyltransferase
AB0190	188095	191574	1160	+	*aas*	2-acylglycerophosphoethanolamine acyltransferase / acyl-acyl carrier protein synthetase
AB0191	191585	194113	843	-	*glnD*	Protein-P-II uridylyltransferase
AB0192	194113	194862	250	-		Conserved hypothetical protein
AB0193	194927	195793	289	-		Conserved hypothetical protein
AB0194	195866	197797	644	-		Hypothetical protein, ankyrin repeat family
AB0195	197999	198334	112	+	*glnB1*	Nitrogen regulatory protein PII
AB0196	198338	199360	341	+	*pyrC*	Dihydroorotase
AB0197	199384	200487	368	-	*fliM*	Flagellar motor switch protein FliM
AB0198	200494	201540	349	-	*flgI*	Flagellar P-ring protein FlgI
AB0199	201645	202934	430	+		Conserved hypothetical protein
AB0200	202940	203197	86	+	*fliQ*	Flagellar basal body protein FliQ
AB0201	203202	203603	134	+		Hypothetical protein
AB0202	203615	204103	163	+		Hypothetical protein
AB0203	204108	204632	175	+	*fliL*	Flagellar basal body-associated protein
AB0204	204635	205060	142	+		Hypothetical protein
AB0205	205060	205761	234	+	*flgH*	Flagellar basal body L-ring protein FlgH
AB0206	205818	207725	636	+	*flgK*	Flagellar hook-associated protein FlgK
AB0207	207749	209083	445	+	*fliD*	Flagellar hook-associated protein 2
AB0208	209158	209511	118	+	*fliS*	Flagellar protein FliS
AB0209	209490	209756	89	+		Hypothetical protein
AB0210	209751	210728	326	-	*tilS*	tRNA(Ile)-lysidine synthase
AB0211	210734	212071	446	-	*yliG*	MiaB-like tRNA modifying enzyme
AB0212	212142	212957	272	-	*panC*	Pantoate--beta-alanine ligase
AB0213	212980	213936	319	-		Oligopeptide ABC transporter, permease protein
AB0214	213966	214319	118	+	*acpS*	Holo-(acyl-carrier-protein) synthase
AB0215	214360	215583	408	-	*gltS*	Sodium:glutamate symporter

AB0216	215610	215987	126	-		Conserved hypothetical protein, putative Holliday junction resolvase
AB0217	215987	216895	303	-	*metF*	5,10-methylenetetrahydrofolate reductase
AB0218	216976	217599	208	+	*serB*	3-phosphoserine phosphatase
AB0219	217605	218594	330	+	*tal*	Transaldolase
AB0220	218665	220014	450	+	*dhs*	3-deoxy-D-arabinoheptulosonate 7-phosphate synthase (DAHP synthetase class II)
AB0221	220083	220922	280	+	*tsx*	Nucleoside-specific channel-forming protein
AB0222	220994	224496		+		Type I restriction-modification system, M subunit, putative (pseudogene)
AB0224	224501	225493	331	+		Conserved hypothetical DNA binding protein
AB0225	225494	225832	113	-		Conserved hypothetical protein
AB0226	225986	226273	96	-	*gatC*	Glutamyl-tRNA(Gln) amidotransferase, subunit C
AB0227	226320	227438	373	-	*tgt*	Queuine tRNA-ribosyltransferase
AB0228	227540	228979	480	+		Conserved hypothetical protein
AB0229	228992	230119	376	+	*aspB2*	Aspartate aminotransferase, aminotransferase, classes I and II
AB0230	230115	230696	194	+		Hypothetical protein
AB0231	230699	232003	435	+	*murC*	UDP-N-acetylmuramate--alanine ligase
AB0232	232018	232791	258	-	*dprA*	SMF protein, DNA processing chain A
AB0233	232837	233913	359	-		Conserved hypothetical protein
AB0234	233958	234977	340	-	*ilvC*	Ketol-acid reductoisomerase
AB0235	235102	236952	617	+	*rnr*	Ribonuclease R
AB0236	236948	237322	125	-		Hypothetical protein (DUF180 domain protein)
AB0237	237387	238364	326	+		Conserved hypothetical protein
AB0238	238455	238808	118	+	*rpsF*	30S ribosomal protein S6
AB0239	238832	239341	170	+	*ssb*	Single-strand DNA binding protein
AB0240	239359	239622	88	+	*rpsR*	30S ribosomal protein S18
AB0241	239698	239895	66	+		Hypothetical protein
AB0242	239896	241296	467	-	*cysS*	Cysteinyl-tRNA synthetase
AB0243	241304	242476	391	-	*nusA*	Transcription termination factor NusA
AB0244	242630	242869	80	+		Conserved hypothetical protein
AB0245	242894	244201	436	+	*miaB*	tRNA-methylthiotransferase
AB0246	244207	244818	204	+		Putative lipoprotein
AB0247	244832	246397	522	+		Hypothetical protein
AB0248	246416	247474	353	-		Conserved hypothetical protein
AB0249	247483	247797	105	-		Hypothetical protein
AB0250	247805	248440	212	-	*cynT2*	Carbonic anhydrase
AB0251	248430	249533	368	-	*bioF*	8-amino-7-oxononanoate synthase
AB0252	249714	250043	110	-		Conserved hypothetical protein
AB0253	250051	250248	66	-		Conserved hypothetical protein

AB0254	250313	251035	241	-		OmpA domain protein
AB0255	251161	252633	491	+	*pyk*	Pyruvate kinase
AB0256	252658	253845	396	-	*argD1*	N-acetylornithine aminotransferase
AB0257	253908	256226	773	-	*cti*	Fatty acid cis/trans isomerase
AB0258	256322	257206	295	+	*pyrB*	Aspartate carbamoyltransferase
AB0259	257206	258162	319	+	*pabB*	Para-aminobenzoate synthase, glutamine amidotransferase component I
AB0260	258228	258782	185	+		Isochorismatase hydrolase
AB0261	258790	259458	223	+		Two-component response regulator
AB0262	259478	260053	192	+		Conserved hypothetical protein, putative para-aminobenzoate synthase component I
AB0263	260056	260607	184	-	*phnA*	Phosphonoacetate hydrolase
AB0264	260665	261153	163	+		Conserved hypothetical protein, predicted metal-dependent hydrolase
AB0265	261177	261923	249	+		Conserved hypothetical membrane protein, predicted permease
AB0266	261999	262562	188	+		Conserved hypothetical membrane protein, HPP family
AB0267	262571	263773	401	-		Hypothetical periplasmic protein
AB0268	263887	265083	399	+		Conserved hypothetical protein
AB0269	265093	266079	329	+		Conserved hypothetical protein, probable periplasmic protein
AB0270	266079	266198	40	+		Hypothetical protein
AB0271	266188	267117	310	-		D-isomer specific 2-hydroxyacid dehydrogenase, NAD-binding
AB0272	267136	268110	325	-		Conserved hypothetical protein
AB0273	268288	269172	295	+	*prpB*	Carboxyphosphoenolpyruvate phosphomutase PrpB
AB0274	269232	270374	381	+	*prpC*	2-methylcitrate synthase/citrate synthase 2
AB0275	270479	273067	863	+	*acnA*	Aconitate hydratase 1
AB0276	273160	274332	391	+		Conserved hypothetical protein (DUF453 domain protein)
AB0277	274409	274897	163	+		Hypothetical protein
AB0278	274932	275471	180	-		Isochorismatase hydrolase
AB0279	275534	277279	582	-		Hypothetical membrane protein
AB0280	277308	278243	312	-	*hemC*	Porphobilinogen deaminase
AB0281	278262	279089	276	-		Conserved hypothetical protein, putative DSBA oxidoreductase
AB0282	279154	281082	643	-	*dnaX*	DNA polymerase III, gamma and tau subunits
AB0283	281082	281864	261	-	*murI*	Glutamate racemase
AB0284	282092	283441	450	-	*gdhA*	NADP-specific glutamate dehydrogenase
AB0285	283584	284903	440	-	*rho*	Transcription termination factor Rho
AB0286	285066	285659	198	-	*tsaA*	Alkyl hydroperoxide reductase/ Thiol specific antioxidant
AB0287	285865	286134	90	+	*fdxA*	Ferredoxin
AB0288	286249	286659	137	+	*ndk*	Nucleoside diphosphate kinase
AB0289	286690	287064	125	+		Conserved hypothetical protein
AB0290	287079	287228	50	+	*rpmF*	50S ribosomal protein L32

AB0291	287231	288229	333	+	*plsX*	Fatty acid/phospholipid synthesis protein
AB0292	288259	289257	333	+	*fabH*	3-oxoacyl-(acyl carrier protein) synthase III
AB0293	289280	289711	144	-		Conserved hypothetical protein
AB0294	289716	291737	674	-		Conserved hypothetical protein, predicted ATP/GTP-binding protein
AB0295	291740	294088	783	-		Conserved hypothetical protein, predicted ATP/GTP-binding protein
AB0296	294191	294919	243	-	*frdB*	Fumarate reductase, iron-sulfur protein
AB0297	294922	296904	661	-	*frdA*	Fumarate reductase, flavoprotein subunit
AB0298	296907	297704	266	-	*frdC*	Fumarate reductase, cytochrome b subunit
AB0299	297905	299422	506	-	*nuoN*	NADH-quinone oxidoreductase, N subunit
AB0300	299422	300906	495	-	*nuoM*	NADH-quinone oxidoreductase, M subunit
AB0301	300911	302794	628	-	*nuoL*	NADH-quinone oxidoreductase, L subunit
AB0302	302799	303107	103	-	*nuoK*	NADH-quinone oxidoreductase, K subunit
AB0303	303114	303632	173	-	*nuoJ*	NADH-quinone oxidoreductase, J subunit
AB0304	303635	304132	166	-	*nuoI*	NADH-quinone oxidoreductase, I subunit
AB0305	304137	305408	424	-	*nuoH*	NADH-quinone oxidoreductase, H subunit
AB0306	305408	306841	478	-	*nuoG*	NADH-quinone oxidoreductase, G subunit
AB0307	306881	308164	428	-	*gltA*	Citrate synthase
AB0308	308192	309439	416	-	*nuoF*	NADH-quinone oxidoreductase, F subunit
AB0309	309432	309914	161	-	*nuoE*	NADH-quinone oxidoreductase, E subunit
AB0310	309917	311548	544	-	*nuoCD*	NADH-quinone oxidoreductase, C/D subunit
AB0311	311544	312056	171	-	*nuoB*	NADH-quinone oxidoreductase, B subunit
AB0312	312050	312409	120	-	*nuoA*	NADH-quinone oxidoreductase, A subunit
AB0313	312545	313708	388	-		Aminotransferase/L-cysteine desulfhydrase
AB0314	313793	315601	603	+		Carboxylyase-related protein
AB0315	315629	316093	155	-		Conserved hypothetical membrane protein (DUF1212 domain protein)
AB0316	316098	316868	257	-		Conserved hypothetical membrane protein (DUF1212 domain protein)
AB0317	316929	317258	110	+		Conserved hypothetical protein
AB0318	317230	317871	214	+		Transcriptional activator, putative, Baf family
AB0319	317852	318457	202	+	*hisG*	ATP phosphoribosyltransferase
AB0320	318460	319149	230	+		Conserved hypothetical protein, putative methyltransferase
AB0321	319275	321200	642	+		Methyl-accepting chemotaxis protein
AB0322	321178	322047	290	+		Conserved hypothetical protein
AB0323	322146	322748	201	+		Conserved hypothetical protein
AB0324	322772	323734	321	-	*trpS*	Tryptophanyl-tRNA synthetase
AB0325	323777	325879	701	-		TonB-dependent receptor protein
AB0326	326004	327164	387	-		Conserved hypothetical membrane protein
AB0328	327251	328423	391	-		MFS family, AmpG related permease

AB0329	328430	329416	329	-		O-methyltransferase
AB0330	329422	329643	74	-		Conserved hypothetical protein
AB0331	329655	331721	689	-		TonB-dependent receptor protein
AB0332	331763	332689	309	+		Transcriptional regulator
AB0333	332684	333220	179	-		Conserved hypothetical membrane protein (DUF204 domain protein)
AB0334	333217	334389	391	-		Major facilitator superfamily transporter
AB0335	334389	335594	402	-		Major facilitator superfamily transporter
AB0336	335594	337372	593	-		ABC transporter, ATP-binding/permease protein
AB0337	337368	339158	597	-		ABC transporter, ATP-binding/permease protein
AB0338	339264	341348	695	-		TonB-dependent receptor protein
AB0339	341462	342421	320	+		Transcriptional regulator, AraC family
AB0340	342454	344481	676	-		TonB-dependent receptor protein
AB0341	344649	344945	99	+		Hypothetical protein
AB0342	344960	346012	351	+		Cation efflux system, membrane protein
AB0343	346070	347305	412	+	*serS*	Seryl-tRNA synthetase
AB0344	347583	350705	1041	-	*nrfI*	Cytochrome c biogenesis protein
AB0345	350758	352245	496	-	*nrfA*	Cytochrome c552 nitrite reductase catalytic subunit NrfA
AB0346	352262	352789	176	-	*nrfH*	Cytochrome c nitrite reductase, small subunit NrfH
AB0347	352917	353300	128	-		Hypothetical protein
AB0348	353310	354923	538	-		EAL/GGDEF/PAS domain protein
AB0349	355018	355458	147	-		Methyl-accepting chemotaxis protein
AB0350	355463	355843	127	-	*napD*	Putative periplasmic nitrate reductase assembly protein NapD
AB0351	355848	356804	319	-	*napL*	Putative periplasmic protein
AB0352	356816	357289	158	-	*napF*	Ferredoxin-type protein NapF
AB0353	357292	357894	201	-	*napB*	Periplasmic nitrate reductase, small subunit, cytochrome c-type protein NapB
AB0354	357899	358702	268	-	*napH*	Methylamine utilization ferredoxin-type protein NapH
AB0355	358702	359511	270	-	*napG*	Fe-S ferredoxin-type protein NapG
AB0356	359532	362339	936	-	*napA*	Periplasmic nitrate reductase, large subunit
AB0357	362606	363595	330	+	*dctP*	C4-dicarboxylate-binding periplasmic protein
AB0358	363612	364154	181	+	*dctQ*	C4-dicarboxylate transport system, permease small subunit
AB0359	364160	365437	426	+	*dctM*	C4-dicarboxylate transport protein
AB0360	365470	367029	520	-		Two-component sensor histidine kinase
AB0361	367096	367791	232	+		Two-component response regulator
AB0362	367816	368295	160	-	*menG*	S-adenosylmethionine:2-demethylmenaquinone methyltransferase
AB0363	368454	369182	243	-	*cysG*	Uroporphyrin-III C-methyltransferase
AB0364	369241	370239	333	-		Conserved hypothetical protein
AB0365	370239	370901	221	-		Putative transcriptional regulator

AB0366	370987	371901	305	+		Glycosyltransferase, putative
AB0367	371920	372888	323	+	*moaA*	Molybdopterin biosynthesis protein A
AB0368	372988	373257	90	+	*rpsO*	30S ribosomal protein S15
AB0369	373389	373784	132	+		Transcriptional regulator, BadM/Rrf2 family
AB0370	373787	374821	345	+		Conserved hypothetical protein
AB0371	374835	375263	143	+		CoA-binding domain protein
AB0372	375266	376540	425	-		Two-component sensor histidine kinase
AB0373	376568	377245	226	-		Two-component response regulator
AB0374	377442	378248	269	+	*ppiC*	Peptidyl-prolyl cis-trans isomerase
AB0375	378262	379326	355	+	*fba*	Fructose-bisphosphate aldolase
AB0376	379481	380974	498	+	*ald*	Aldehyde dehydrogenase
AB0377	381031	381417	129	+		Conserved hypothetical protein (DUF779 domain protein)
AB0378	381424	381810	129	-	*exbD1*	Biopolymer transport protein ExbD
AB0379	381813	382283	157	-	*exbB1*	Biopolymer transport protein ExbB
AB0380	382302	383207	303	+		Conserved hypothetical protein
AB0381	383297	383770	158	+	*aroK*	Shikimate kinase
AB0382	383775	385064	430	+	*hisD*	Histidinol dehydrogenase
AB0383	385077	385376	100	+		Conserved hypothetical protein
AB0384	385390	386286	299	+	*ispB*	Octaprenyl-diphosphate synthase
AB0385	386289	387584	432	+	*hemA*	Glutamyl-tRNA reductase
AB0386	387604	389307	568	+	*proS*	Prolyl-tRNA synthetase
AB0387	389322	390209	296	+	*mscS*	Mechanosensitive ion channel
AB0388	390424	391395	324	+		tRNA nucleotidyltransferase/poly(A) polymerase
AB0389	391455	391892	146	+		Conserved hypothetical protein
AB0390	391879	393675	599	+		Conserved hypothetical protein
AB0391	393691	394920	410	-	*lnt*	Apolipoprotein N-acyltransferase
AB0392	394949	395209	87	+	*yajC*	Preprotein translocase subunit
AB0393	395279	396841	521	+	*secD*	Protein-export membrane protein SecD
AB0394	396844	397809	322	+	*secF*	Protein-export membrane protein SecF
AB0395	397881	398057	59	+		Hypothetical protein
AB0396	398056	398457	134	-		Hypothetical protein
AB0397	398466	399218	251	-	*motB*	Flagellar motor component MotB
AB0398	399225	399980	252	-	*motA*	Flagellar motor component MotA
AB0399	400128	400469	114	+		Conserved hypothetical protein
AB0400	400472	402934	821	+	*leuS*	Leucyl-tRNA synthetase
AB0401	402940	403461	174	+		Conserved hypothetical protein
AB0402	403467	404636	390	+	*folC*	Folylpolyglutamate synthase/dihydrofolate synthase

AB0403	404626	406743	706	+		Probable helicase
AB0404	406750	408450	567	-		Phospholipid/glycerol acyltransferase, possible hemolysin
AB0405	408556	409260	235	+		Conserved hypothetical protein
AB0406	409284	409658	125	-		Hypothetical protein
AB0407	409789	410091	101	+		Hypothetical protein
AB0408	410094	413078	995	+	*mfd*	Transcription-repair coupling factor
AB0409	413093	413608	172	+		Putative acetyltransferase
AB0410	413611	414549	313	-		Conserved hypothetical protein
AB0411	414654	415097	148	+		Hypothetical periplasmic protein
AB0412	415134	415811	226	+	*ompR*	Two-component response regulator
AB0413	415811	417043	411	+		Two-component sensor histidine kinase
AB0414	417092	418195	368	+		Conserved hypothetical protein
AB0415	418249	419658	470	+		Methyl-accepting chemotaxis protein
AB0416	419654	420028	125	+		Two-component response regulator
AB0417	420032	422071	680	+		Two-component sensor histidine kinase
AB0418	422071	424491	807	+		Two-component sensor histidine kinase
AB0419	424495	425304	270	+		Conserved hypothetical protein
AB0420	425354	426145	264	+		Hypothetical protein
AB0421	426145	426390	82	+		Hypothetical protein
AB0422	426531	427238	236	+	*ubiE*	Ubiquinone\menaquinone biosynthesis methlytransferase
AB0423	427266	428450	395	+	*xseA*	Exodeoxyribonuclease VII, large subunit
AB0425	428527	429003	159	+	*cheW*	Chemotaxis protein CheW
AB0426	429037	429567	177	-		Peptidyl-prolyl cis-trans isomerase-like protein
AB0427	429721	430101	127	+	*panD*	Aspartate 1-decarboxylase
AB0428	430097	430414	106	+		Conserved hypothetical protein (DUF149 domain protein)
AB0429	430422	431279	286	+	*ispA*	Geranyltranstransferase
AB0430	431419	431673	85	+	*groES*	10 kDa chaperonin
AB0431	431676	433307	544	+	*groEL*	60 kDa chaperonin
AB0432	433663	435036	458	-		Two-component sensor histidine kinase
AB0433	435029	435703	225	-		Two-component response regulator
AB0434	435703	436431	243	-		Ser/Thr protein phosphatase family protein
AB0435	436431	436883	151	-		Conserved hypothetical protein
AB0436	436890	437411	174	-		Hypothetical periplasmic protein
AB0437	437407	438369	321	-		Hypothetical protein
AB0438	438360	439928	523	-		Hypothetical protein
AB0439	439915	440535	207	-		ABC transporter, ATP-binding protein
AB0440	440535	441614	360	-		ABC transporter, permease protein

AB0442	441709	442293	195	-		Hypothetical protein
AB0443	442328	443098	257	+	*suhB*	Inositol-1-monophosphatase
AB0444	443151	444950	600	+	*glmS*	Glucosamine-fructose-6-phosphate aminotransferase
AB0445	445082	446338	419	+	*metK*	S-adenosylmethionine synthetase
AB0446	446443	447303	287	+	*accD*	Acetyl-CoA carboxylase, carboxyltransferase, beta subunit
AB0447	447310	447918	203	+	*thiE*	Thiamine-phosphate pyrophosphorylase
AB0448	447887	448363	159	+		Conserved hypothetical protein (DUF163 domain protein)
AB0449	448426	449430	335	+		Conserved hypothetical protein
AB0450	449434	450360	309	+		Probable tRNA-dihydrouridine synthase
AB0451	450445	451260	272	+	*prmA*	Ribosomal protein L11 methyltransferase
AB0452	451268	453250	661	+	*ftsH1*	Cell division protein FtsH
AB0453	453372	455195	608	+		Two-component response regulator
AB0454	455185	455589	135	+		Two-component response regulator
AB0455	455594	458164	857	+		Two-component sensor histidine kinase
AB0456	458444	459994	517	+	*leuA1*	2-isopropylmalate synthase
AB0457	460037	460366	110	+		Conserved hypothetical protein
AB0458	460366	460782	139	+		Conserved hypothetical protein
AB0459	460764	463739	992	+	*mutS1*	Mismatch repair ATPase
AB0460	463785	466808	1008	-		Outer membrane component of efflux system
AB0461	466813	467502	230	-		Putative membrane fusion component of efflux system
AB0462	467507	468724	406	-		Outer membrane component of efflux system
AB0463	468738	469331	198	-		Conserved hypothetical protein
AB0464	469425	470234	270	-		Conserved hypothetical protein
AB0465	470416	472020	535	+		Quinohemoprotein amine dehydrogenase, 60 kDa (α) subunit
AB0466	472033	473403	457	+		Quinohemoprotein amine dehydrogenase, putative quinone cofactor formation protein
AB0467	473417	473734	106	+		Quinohemoprotein amine dehydrogenase, 9 kDa (γ) subunit
AB0468	473755	474885	377	+		Quinohemoprotein amine dehydrogenase, 40 kDa (β) subunit
AB0469	474903	476537	545	+		ABC transporter, ATP-binding protein
AB0470	476533	477159	209	+		Conserved hypothetical protein
AB0471	477159	478481	441	+		Conserved hypothetical protein
AB0472	478496	480352	619	-		GGDEF domain protein
AB0473	480426	481130	235	-	*hisA*	Phosphoribosylformimino-5-aminoimidazole carboxamide ribotide isomerase
AB0474	481145	481993	283	-		Conserved hypothetical protein (DUF1731 domain protein)
AB0475	482017	482622	202	-	*hisH1*	Glutamine amidotransferase HisH
AB0476	482668	483237	190	-	*ctsW*	Transformation system protein
AB0477	483387	483791	135	+		Conserved hypothetical protein
AB0479	483939	485723	595	-	*lepA*	GTP-binding protein LepA

AB0480	485898	486161	88	+		Conserved hypothetical protein (DUF156 domain protein)
AB0481	486176	488692	839	+		Heavy-metal transporting P-type ATPase
AB0483	488764	489777	338	-	*cadF*	Outer membrane fibronectin-binding protein
AB0484	489860	490789	310	-	*prsA*	Ribose-phosphate pyrophosphokinase
AB0485	491053	492231	393	+		Conserved hypothetical protein
AB0486	492283	493317	345	-	*trmU1*	tRNA (5-methylaminomethyl-2-thiouridylate)-methyltransferase
AB0487	493332	494432	367	-	*trmU2*	tRNA (5-methylaminomethyl-2-thiouridylate)-methyltransferase
AB0488	494483	494965	161	-	*folK*	2-amino-4-hydroxy-6- hydroxymethyldihydropteridine pyrophosphokinase
AB0489	494999	496021	341	-	*pepQ*	Prolidase (Xaa-Pro dipeptidase) (pepQ)
AB0490	496099	496590	164	+	*aroQ*	3-dehydroquinate dehydratase
AB0491	496541	497818	426	+		Amidohydrolase family protein
AB0492	497814	498695	294	+	*pspA*	Protease IV (PspA)
AB0493	498784	499443	220	-		Hypothetical protein
AB0494	499683	500894	404	-	*ackA1*	Acetate kinase
AB0495	500924	501916	331	-	*pta*	Phosphate acetyltransferase
AB0496	502163	503350	396	-	*ackA2*	Acetate kinase
AB0497	503457	504392	312	-		Cation efflux protein
AB0498	504453	505640	396	-	*ackA3*	Acetate kinase
AB0499	505664	506269	202	-	*dnaQ1*	DNA polymerase III, epsilon subunit
AB0500	506265	508103	613	-		Conserved hypothetical protein (DUF294 domain protein)
AB0501	508157	509821	555	-		Sodium:solute symporter family protein
AB0502	509824	510135	104	-		Conserved hypothetical protein (DUF485 domain protein)
AB0504	510365	512011	549	-		Sodium:solute symporter family protein
AB0505	512014	512379	122	-		Conserved hypothetical protein (DUF485 domain protein)
AB0506	512454	513062	203	-	*dnaQ2*	DNA polymerase III, epsilon subunit
AB0507	513065	514882	606	-		Cyclic nucleotide-binding domain protein
AB0508	514905	516671	589	-		Sodium:solute symporter (Ssf family)
AB0509	516680	516931	84	-		Conserved hypothetical protein
AB0510	517010	517669	220	-		Two-component response regulator
AB0511	517653	519233	527	-		Two-component sensor histidine kinase
	519313	**519386**		**-**		**tRNA-Asp-1 (anticodon: GTC)**
	519410	**519482**		**-**		**tRNA-Val-1 (anticodon: TAC)**
	519505	**519576**		**-**		**tRNA-Glu-1 (anticodon: TTC)**
	519602	**519674**		**-**		**tRNA-Lys-1 (anticodon: TTT)**
	519695	**519768**		**-**		**tRNA-Asp-2 (anticodon: GTC)**
	519835	**519907**		**-**		**tRNA-Val-2 (anticodon: TAC)**
	519930	**520001**		**-**		**tRNA-Glu-2 (anticodon: TTC)**

	520027	**520099**		**-**		**tRNA-Lys-2 (anticodon: TTT)**
AB0512	520166	520669	168	-		CinA-like protein
AB0513	520769	522124	452	-	*mqo*	Malate:quinone oxidoreductase
AB0514	522392	525148	919	+	*ileS*	Isoleucyl-tRNA synthetase
AB0516	525275	525550	92	+		Conserved hypothetical NifU-like protein
AB0517	525556	526149	198	+		Conserved hypothetical protein
AB0518	526130	527416	429	+	*murE*	UDP-N-acetylmuramoylalanyl-D-glutamyl-2, 6-diaminopimelate ligase
AB0520	527751	528725	325	+		C4-dicarboxylate transporter/malic acid transport protein
AB0521	528768	529784	339	+	*tas*	Oxidoreductase Tas, aldo/keto reductase family
AB0522	529857	531341	495	+	*pitA*	Phosphate transporter family protein
AB0523	531631	534171	847	+		Methyl-accepting chemotaxis protein
AB0524	534240	534638	133	-		Hypothetical protein
AB0525	534784	536682	633	-		Methyl-accepting chemotaxis protein
AB0526	536838	537197	120	+		Conserved hypothetical protein
AB0527	537210	537677	156	+		Conserved hypothetical protein
AB0528	537720	538937	406	+		Peptidase, M48 family
AB0529	538937	540133	399	+		DNA recombination protein RmuC homolog
AB0530	540152	541048	299	-		Integral membrane domain protein (DUF6 domain protein)
AB0531	541051	542268	406	-	*moeA2*	Molybdenum cofactor biosynthesis protein A
AB0532	542282	542476	65	-		Hypothetical protein
AB0533	542584	543366	261	+		Conserved hypothetical protein
AB0534	543366	543863	166	+		Conserved hypothetical protein (DUF523 domain protein)
AB0535	543872	544108	79	-		Hypothetical protein
AB0536	544095	544589	165	-		Hypothetical protein
AB0537	544832	545626	265	+	*rpsB*	30S ribosomal protein S2
AB0538	545629	546672	348	+	*tsf*	Translation elongation factor EF-Ts
AB0539	546721	547398	226	+		ABC transporter, ATP-binding protein
AB0540	547398	548216	273	+		Hypothetical protein
AB0541	548216	548830	205	+	*gmk*	Guanylate kinase
AB0542	548837	550459	541	-		EAL/GGDEF domain protein
AB0543	550556	552991	812	+		Cation-transporting ATPase, P-type
AB0544	553011	553235	75	+		Hypothetical protein
AB0545	553271	553558	96	-		Conserved hypothetical protein, possible cytochrome c-553
AB0546	553758	554357	200	+		Oligopeptide ABC transporter, ATP-binding protein
AB0547	554347	555273	309	+	*hemH*	Ferrochelatase
AB0548	555307	557412	702	-	*feoB1*	Ferrous iron transport protein B
AB0549	557405	557629	75	-		Hypothetical protein

AB0550	557827	558570	248	+		Conserved hypothetical protein (DUF218 domain protein)
AB0551	558630	559367	246	+		ABC transporter, ATP-binding protein
AB0552	559384	560181	266	+		ABC transporter, permease protein
AB0553	560208	561029	274	+		Conserved hypothetical protein
AB0554	561113	561649	179	+	*tpx*	Thiol peroxidase
AB0555	561764	562489	242	+		Conserved hypothetical secreted protein
AB0556	562515	563489	325	-		Putative efflux protein, bile acid:sodium symporter family
AB0558	563572	564759	396	+		Hypothetical protein
AB0559	565013	565936	308	+		Oxidoreductase, molybdopterin binding
AB0560	565939	566502	188	+		Conserved hypothetical membrane protein
AB0561	566755	568797	681	+	*rep*	ATP-dependent DNA helicase, UvrD/Rep family
AB0562	568847	570001	385	+		Probable sodium/hydrogen antiporter
AB0563	570246	571577	444	+	*soxC*	Sulfur oxidation protein SoxCD, sulfur dehydrogenase subunit
AB0564	571549	572730	394	+	*soxD*	Sulfur oxidation protein SoxCD, diheme cytochrome c subunit
AB0565	572748	573098	117	+	*soxX*	Sulfur oxidation protein SoxXA, monoheme cytochrome c subunit
AB0566	573117	573566	150	+	*soxY*	Sulfur oxidation protein SoxYZ, sulfur covalently binding protein
AB0567	573627	573929	101	+	*soxZ*	Sulfur oxidation protein SoxYZ, sulfur compound chelating protein
AB0568	573970	574881	304	+	*soxA*	Sulfur oxidation protein SoxXA, diheme cytochrome c subunit
AB0569	574898	575314	139	+		Hypothetical protein
AB0570	575449	577212	588	+	*soxB*	Sulfur oxidation protein, sulfate thiol esterase
AB0571	577302	578093	264	+		Hypothetical protein
AB0572	578093	578524	144	+		Conserved hypothetical protein
AB0573	578531	578968	146	+		Conserved hypothetical protein
AB0574	578989	579777	263	+		Hypothetical protein
AB0576	579814	580377	188	-	*pfpI*	Peptidase, ThiJ/PfpI family protein
AB0578	580455	581369	305	-		Conserved hypothetical protein, beta-lactamase-like protein
AB0579	581459	582508	350	+		Conserved hypothetical protein, HD domain protein
AB0580	582538	583209	224	-		Rhodanese-like protein
AB0581	583395	586007	871	+	*valS*	Valyl-tRNA synthetase
AB0582	586038	586853	272	+		Hypothetical protein
AB0583	587017	587208	64	+		Conserved hypothetical protein
AB0584	587252	588103	284	-		Hypothetical protein
AB0585	588113	589423	437	-		Major facilitator superfamily transporter
AB0586	589501	590097	199	+		HAM1 protein homolog
AB0587	590093	590410	106	-		Hypothetical protein
AB0588	590410	590748	113	-		Hypothetical protein
AB0589	590741	591025	95	-		Hypothetical protein

AB0590	591015	591776	254	-	*proC*	Pyrroline-5-carboxylate reductase
AB0591	591846	592523	226	+		Conserved hypothetical membrane protein
AB0592	592569	594983	805	+	*lon*	ATP-dependent protease La
AB0593	594990	595550	187	+		Rhomboid-like protein
AB0594	595550	596005	152	+		Protein tyrosine phosphatase
AB0595	596048	597334	429	+		Conserved hypothetical protein
AB0596	597340	599019	560	+		Hypothetical TPR repeat protein
AB0597	599078	599506	143	-		Transcriptional regulator, MarR family
AB0598	599645	599965	107	+		Hypothetical protein
AB0599	600035	600280	82	-		Hypothetical protein
AB0600	600425	600805		+		Methyl-accepting chemotaxis protein (pseudogene)
AB0602	602086	603621	512	-		Methyl-accepting chemotaxis protein
AB0603	603754	603975	74	+		Conserved hypothetical protein
AB0604	604006	604875	290	+		Membrane protein, putative (DUF6 domain protein)
AB0605	605072	606520	483	-	*accC2*	Acetyl CoA carboxylase, biotin carboxylase subunit
AB0606	606772	607122	117	-		Conserved hypothetical protein (DUF59 domain protein)
AB0607	607135	607542	136	-	*sufE*	Putative suf regulatory protein
AB0608	607547	608728	394	-	*sufS*	Selenocysteine lyase/Cysteine desulfurase
AB0609	608724	609752	343	-	*sufD*	Fe-S assembly protein
AB0610	609742	610509	256	-	*sufC*	Fe-S assembly ABC transporter, ATP-binding protein
AB0611	610516	611982	489	-	*sufB*	Fe-S assembly ABC transporter, permease protein
AB0612	612179	613372	398	+	*iscS*	Cysteine desulfurase/aminotransferase (IscS/NifS)
AB0613	613406	614383	326	+	*iscU*	NifU-like protein
AB0614	614517	615137	207	+		Conserved hypothetical protein
AB0615	615145	616389	415	-		GGDEF domain protein
AB0616	616464	617861	466	+	*argH*	Argininosuccinate lyase
AB0617	617887	618792	302	-	*cheV*	Chemotaxis signal transduction protein CheV
AB0618	618846	619502	219	-		MoeB/ThiF family protein
AB0619	619565	620047	161	+	*greA*	Transcription elongation factor GreA
AB0620	620063	620758	232	+		Conserved hypothetical protein
AB0621	620773	622743	657	+	*uvrB*	Excinuclease ABC, subunit B
AB0622	622837	624717	627	+		Methyl-accepting chemotaxis protein
AB0623	624730	625371	214	-	*nth*	Endonuclease III
AB0624	625371	625778	136	-		Hypothetical protein
AB0625	625939	627918	660	+		TonB-dependent receptor protein
AB0626	628024	630177	718	+		TonB-dependent receptor protein
AB0627	630235	631623	463	-		Methyl-accepting chemotaxis protein

AB0628	631719	632813	365	-		Hypothetical protein
AB0629	633356	633538	61	+		Hypothetical protein
AB0630	633654	634343	230	+		Two-component response regulator
AB0631	634351	637329	993	+		Two-component sensor histidine kinase
AB0632	637521	639821	767	+		Methyl-accepting chemotaxis protein
AB0633	639938	641941	668	+		Methyl-accepting chemotaxis protein
AB0634	641972	643198	409	-		Conserved hypothetical protein
AB0636	643463	643915	151	-	*rpiB*	Ribose 5-phosphate isomerase
AB0637	643918	644697	260	-	*lepP*	Signal peptidase I
AB0638	644694	645554	287	-	*folD*	5,10-methylene-tetrahydrofolate dehydrogenase/5,10-methylene-tetrahydrofolate cyclohydrolase
AB0639	645702	646235	178	+	*rplY*	50S ribosomal protein L25
AB0640	646247	646795	183	+	*pth*	Peptidyl-tRNA hydrolase
AB0641	646801	647865	355	+		Conserved hypothetical membrane protein
AB0642	647882	648325	148	+		Hypothetical protein
AB0643	648294	649751	486	-	*amiA*	N-acetylmuramoyl-L-alanine amidase
AB0644	649760	650788	343	-	*npd*	2-nitropropane dioxygenase
AB0645	650852	652057	402	-	*tyrS*	Tyrosyl-tRNA synthetase
AB0646	652079	654220	714	-	*spoT*	ppGpp synthetase/guanosine-3',5'-bis(diphosphate) 3'-pyrophosphohydrolase
AB0647	654257	654472	72	-	*rpoZ*	DNA-directed RNA polymerase, omega chain
AB0648	654498	655202	235	-	*pyrH*	Uridylate kinase
AB0649	655262	656326	355	-		Conserved hypothetical protein
AB0650	656326	657258	311	-	*pdxA*	Pyridoxal phosphate biosynthetic protein A
AB0651	657254	658036	261	-	*pdxJ*	Pyridoxal phosphate biosynthesis protein
AB0652	658049	659461	471	-	*trpE*	Anthranilate synthase, component I
AB0653	659475	660500	342	-		Conserved hypothetical protein
AB0654	660529	661788	420	-	*glyA1*	Serine hydroxymethyltransferase
AB0655	661805	663316	504	-	*lysS*	Lysyl-tRNA synthetase
AB0656	663332	664033	234	-		Colicin V production protein
AB0657	664132	665190	353	+	*ispG*	4-hydroxy-3-methylbut-2-en-1-yl diphosphate synthase
AB0658	665193	666491	433	+		GGDEF domain protein
AB0659	666557	667996	480	+	*dnaB*	Replicative DNA helicase
AB0660	668065	669228	388	+	*ugd*	UDP-glucose 6-dehydrogenase
AB0661	669242	670330	363	+		NAD-dependent epimerase/dehydratase family protein
AB0662	670330	671571	414	+		UDP-hexose dehydrogenase
AB0663	671577	672542	322	+		Conserved hypothetical protein
AB0664	672550	673125	192	+		Conserved hypothetical protein

AB0665	673131	674216	362	+		DegT/DnrJ/EryC1/StrS aminotransferase
AB0666	674219	675394	392	+		FAD-dependent oxidoreductase
AB0667	675363	676367	335	+		NAD-dependent epimerase/dehydratase family protein
AB0668	676375	677562	396	+		DegT/DnrJ/EryC1/StrS aminotransferase
AB0669	677567	679561	665	+	*asnB2*	Asparagine synthetase
AB0670	679515	680072	186	+		Conserved hypothetical protein
AB0671	680075	681244	390	+	*wbpG1*	Putative LPS biosynthesis protein WbpG
AB0672	681244	681858	205	+	*hisH2*	Glutamine amidotransferase HisH
AB0673	681864	682622	253	+	*hisF2*	Imidazoleglycerol phosphate synthase, cyclase subunit
AB0674	682622	684133	504	+		Conserved hypothetical protein
AB0675	684136	685308	391	+		Hypothetical protein
AB0676	685396	687093	566	+		ABC transporter, ATP-binding/permease protein
AB0677	687100	689103	668	+		Putative O-antigen acyltransferase
AB0678	689103	690230	376	+	*pglJ*	Glycosyltransferase
AB0679	690221	692116	632	+	*asnB*	Asparagine synthetase
AB0680	692112	693215	368	+		Glycosyltransferase
AB0681	693277	694044	256	+		Conserved hypothetical membrane protein
AB0682	694138	694269	44	+		Hypothetical protein
AB0683	694296	695531	412	+		O-antigen translocase
AB0684	695534	696658	375	+	*wbpG2*	Putative LPS biosynthesis protein WbpG
AB0685	696658	697188	177	+		Conserved hypothetical protein
AB0686	697188	698330	381	+		Conserved hypothetical protein
AB0687	698326	699525	400	+		Conserved hypothetical protein
AB0688	699534	700694	387	+		Glycosyltransferase
AB0689	700687	701829	381	+	*wbpG3*	Putative LPS biosynthesis protein WbpG
AB0690	701841	702443	201	+	*hisH3*	Glutamine amidotransferase HisH
AB0691	702443	703210	256	+	*hisF3*	Imidazoleglycerol phosphate synthase, cyclase subunit
AB0692	703213	704319	369	+		Glycosyltransferase
AB0693	704319	705386	356	+		Putative hexose epimerase
AB0694	705382	706377	332	+		Glycosyltransferase
AB0695	706377	707336	320	+		Glycosyltransferase
AB0696	707339	707908	190	+		Putative hexose epimerase
AB0697	707921	709660	580	+	*pglF*	Sugar epimerase/dehydratase
AB0698	709725	710120	132	+		Hypothetical protein
AB0699	710130	710981	284	-	*ligA*	ATP-dependent DNA ligase
AB0700	711046	711600	185	+	*apt*	Adenine phosphoribosyltransferase
AB0701	711620	712825	402	+	*trpB1*	Tryptophan synthase, beta chain

AB0702	712846	713544	233	+		Conserved hypothetical membrane protein
AB0703	713537	714946	470	+	*pepA*	Aminopeptidase
AB0705	714980	715660	227	-		TonB-dependent receptor protein
AB0706	715671	716045	125	-	*exbD2*	Biopolymer transport protein ExbD
AB0707	716029	716454	142	-	*exbB2*	Biopolymer transport protein ExbB
AB0708	716612	717823	404	+		Conserved hypothetical membrane protein
AB0709	717833	719092	420	+		HlyD family secretion protein
AB0710	719082	719786	235	+		ABC transporter, ATP-binding protein
AB0711	719789	720997	403	+		ABC transporter, permease protein
AB0712	721029	721505	159	-		Hypothetical protein
AB0714	721993	724101	703	-		Heavy metal translocating P-type ATPase
AB0715	724106	724465	120	-		Conserved hypothetical protein
AB0716	724469	724816	116	-		Conserved hypothetical protein
AB0717	724819	725070	84	-		Hypothetical protein
AB0718	725077	725760	228	-		Conserved hypothetical protein
AB0719	725760	726071	104	-		Conserved hypothetical protein
AB0720	726135	726599	155	-	*fur1*	Ferric uptake regulation protein
AB0721	726750	727139	130	+		Hypothetical protein
AB0722	727165	728559	465	+	*fumC*	Fumarate hydratase, class II
AB0723	728584	728826	81	+		Hypothetical protein
AB0724	728870	730720	617	-		Two-component sensor histidine kinase
AB0725	730707	731558	284	-		Two-component response regulator
AB0726	731681	733825	715	+	*bfrE*	Probable TonB-dependent receptor
AB0727	733912	734589	226	+		Conserved hypothetical protein
AB0728	734589	735662	358	+		FMN-dependent alpha-hydroxy acid dehydrogenase, putative L-lactate dehydrogenase
AB0729	735880	737967	696	+	*irgA*	Iron-regulated outer membrane virulence protein homolog
AB0730	738049	738915	289	+		Conserved hypothetical protein, possible IroE protein
AB0731	738931	740208	426	+		Putative SAM-dependent methyltransferase
AB0732	740310	740972	221	+		Conserved hypothetical protein
AB0733	740987	742228	414	+	*cysJ*	Sulfite reductase, flavoprotein component
AB0734	742319	742513	65	-		Conserved hypothetical protein (DUF466 domain protein)
AB0735	742519	744615	699	-	*cstA*	Carbon starvation protein A
AB0736	744810	745910	367	+		GTP-binding protein, putative
AB0737	745923	746744	274	+		Conserved hypothetical protein
AB0738	746745	747359	205	-		Conserved hypothetical protein
AB0739	747362	747613	84	-		Conserved hypothetical protein
AB0740	747730	748041	104	+		Conserved hypothetical protein (DUF1255 domain protein)

AB0741	748087	748785	233	-		Conserved hypothetical protein
AB0742	748832	750220	463	-		GGDEF/PAS domain protein
AB0743	750338	751156	273	+	*thiL*	Thiamine monophosphate kinase
AB0744	751293	752354	354	+	*truD*	tRNA pseudouridine synthase D
AB0745	752410	752760	117	+		Hypothetical protein
AB0746	752792	754981	730	-		Methyl-accepting chemotaxis protein
AB0747	755090	755644	185	+	*ruvA*	Holliday junction DNA helicase RuvA
AB0748	755666	756706	347	+	*ddlA*	D-alanine--D-alanine ligase
AB0749	756712	757428	239	+		2-hydroxy-6-oxohepta-2,4-dienoate hydrolase
AB0750	757418	758851	478	+	*murF*	UDP-N-acetylmuramoylalanyl-D-glutamyl-2,6-diaminopimelate ligase
AB0751	758865	759350	162	+		HIT family protein
AB0752	759461	760450	330	+		Hypothetical protein
AB0753	760564	761781	406	+		Hypothetical protein
AB0754	761991	762302	104	+	*rpsJ*	30S ribosomal protein S10
AB0755	762324	762896	191	+	*rplC*	50S ribosomal protein L3
AB0756	762896	763504	203	+	*rplD*	50S ribosomal protein L4
AB0757	763509	763787	93	+	*rplW*	50S ribosomal protein L23
AB0758	763801	764625	275	+	*rplB*	50S ribosomal protein L2
AB0759	764638	764910	91	+	*rpsS*	30S ribosomal protein S19
AB0760	764916	765245	110	+	*rplV*	50S ribosomal protein L22
AB0761	765248	765949	234	+	*rpsC*	30S ribosomal protein S3
AB0762	765955	766377	141	+	*rplP*	50S ribosomal protein L16
AB0763	766367	766555	63	+	*rpmC*	50S ribosomal protein L29
AB0764	766569	766817	83	+	*rpsQ*	30S ribosomal protein S17
AB0765	766820	767185	122	+	*rplN*	50S ribosomal protein L14
AB0766	767188	767424	79	+	*rplX*	50S ribosomal protein L24
AB0767	767420	767974	185	+	*rplE*	50S ribosomal protein L5
AB0768	767977	768159	61	+	*rpsN*	30S ribosomal protein S14
AB0769	768175	768570	132	+	*rpsH*	30S ribosomal protein S8
AB0770	768583	769116	178	+	*rplF*	50S ribosomal protein L6
AB0771	769129	769485	119	+	*rplR*	50S ribosomal protein L18
AB0772	769498	769935	146	+	*rpsE*	30S ribosomal protein S5
AB0773	769942	770337	132	+	*rplO*	50S ribosomal protein L15
AB0774	770343	771602	420	+	*secY*	Preprotein translocase, SecY subunit
AB0775	771607	772368	254	+	*map*	Methionine aminopeptidase
AB0776	772381	772596	72	+	*infA*	Translation initiation factor IF-1
AB0777	772688	773353	222	+		Conserved hypothetical protein

AB0778	773353	774543	397	+		Conserved hypothetical protein
AB0779	774590	776356	589	+	*aspS*	Aspartyl-tRNA synthetase
AB0780	776500	779082	861	+		CheW-like chemotaxis protein
AB0781	779146	780900	585	+		Radical SAM domain protein
AB0782	780942	781580	213	-	*adk1*	Adenylate kinase
AB0783	781710	782276	189	+	*adk2*	Adenylate kinase
AB0784	782279	783043	255	+		Molybdopterin binding domain protein
AB0785	783072	783713	214	+	*cat*	Chloramphenicol O-acetyltransferase
AB0786	783841	784980	380	+		Zinc-containing NADP-dependent alcohol dehydrogenase
AB0787	785021	786145	375	+		Iron-containing NADP-dependent alcohol dehydrogenase
AB0788	786200	788458	753	-		Methyl-accepting chemotaxis protein
AB0789	788586	789605	340	-	*alr*	Alanine racemase
AB0790	789611	791458	616	-	*uvrC*	Excinuclease ABC, subunit C
AB0791	791614	794007	798	+		Methyl-accepting chemotaxis protein
AB0792	794444	796444	667	+		Methyl-accepting chemotaxis protein
AB0793	796489	798480	664	+		Methyl-accepting chemotaxis protein
AB0794	798834	800855	674	+		Methyl-accepting chemotaxis protein
AB0795	800869	801528	220	-		Two-component response regulator
AB0796	801528	802589	354	-		Two component system histidine kinase/response regulator fusion protein
AB0797	802655	804949	765	+		Two-component sensor histidine kinase
AB0798	804932	805339	136	-		MutT/nudix family protein
AB0799	805419	806186	256	-		Hypothetical protein
AB0800	806182	806541	120	-		Hypothetical protein
AB0801	806537	806890	118	-		Hypothetical protein
AB0802	806999	808270	424	+		Urea/short-chain amide ABC transporter, periplasmic urea/short-chain amide-binding protein
AB0803	808330	809931	534	+		Urea/short-chain amide ABC transporter, permease protein
AB0804	809938	811041	368	+		ABC transporter, permease protein
AB0805	811046	811831	262	+		ABC transporter, ATP-binding protein
AB0806	811964	812656	231	+		ABC transporter, ATP-binding protein
AB0807	812786	813772	329	+		Hypothetical protein
AB0808	813947	814696	250	+	*ureD*	Urease accessory protein UreD
AB0809	814709	815383	225	+	*ureAB*	Fusion of urease beta and gamma subunits
AB0810	815388	817085	566	+	*ureC*	Urease, alpha subunit
AB0811	817098	817541	148	+	*ureE*	Urease accessory protein
AB0812	817489	818229	247	+	*ureF*	Urease complex component
AB0813	818368	818952	195	+	*ureG*	Urease accessory protein UreG

AB0814	819155	819715	187	-		Conserved hypothetical protein
AB0815	819827	820417	197	+		Transcriptional reguator, TetR family
AB0816	820433	823558	1042	-		Hydrophobe/amphiphile efflux-1 family protein
AB0817	823564	824619	352	-		Multidrug efflux RND membrane fusion protein
AB0818	824619	825851	411	-		Outer membrane efflux protein
AB0819	825933	826433	167	+		Putative transcriptional regulator (MarR family)
AB0820	826517	826732	72	+		Hypothetical protein
AB0821	826756	826941	62	-		Conserved hypothetical protein
AB0822	826957	827073	39	-		Hypothetical protein
AB0823	827157	828809	551	+		GGDEF domain protein
AB0824	828812	829597	262	-	*xth*	Exodeoxyribonuclease
AB0825	829600	829845	82	-		Hypothetical protein
AB0826	829944	830663	240	+		Conserved hypothetical protein (DUF81 domain protein)
AB0827	830710	831003	98	-		Conserved hypothetical protein
AB0828	831010	831531	174	-		Outer membrane lipoprotein
AB0829	831694	832926	411	+		Conserved hypothetical protein
AB0830	832926	833654	243	+		Conserved hypothetical protein
AB0831	833650	834978	443	-		ABC transporter protein
AB0832	835206	835550	115	-		Conserved hypothetical protein
AB0833	835480	836547	356	-		EAL domain protein
AB0834	836615	837319	235	-		Two-component response regulator
AB0835	837319	838311	331	-		Two-component sensor histidine kinase
AB0836	838342	839754	471	-		Carotenoid isomerase, putative
AB0837	839744	841093	450	-	*phrB*	Deoxyribodipyrimidine photolyase
AB0838	841093	842043	317	-		Conserved hypothetical protein (DUF523/1722 domain protein)
AB0839	842172	843080	303	-		Auxin efflux carrier protein, putative
AB0840	843085	843570	162	-		Conserved hypothetical protein (DUF386 domain protein)
AB0841	843582	844811	410	-	*pgi*	Glucose-6-phosphate isomerase
AB0842	844814	845668	285	-	*galU*	UTP--glucose-1-phosphate uridylyltransferase
AB0843	845673	847046	458	-		Phosphohexosemutase
	847461	**848972**		**+**	***rrnA***	**16S ribosomal RNA**
	849083	**849156**		**+**		**tRNA-Ile-1 (anticodon: GAT)**
	849214	**849286**		**+**		**tRNA-Ala-1 (anticodon: TGC)**
	849680	**852577**		**+**	***rrnA***	**23S ribosomal RNA**
	852738	**852857**		**+**	***rrnA***	**5S ribosomal RNA**
AB0844	853283	854680	466	+		Methyl-accepting chemotaxis protein
AB0845	854693	855094	134	+		Methyl-accepting chemotaxis protein

AB0846	855124	855333	70	-		Probable tautomerase
AB0847	855424	856251	276	+		Transcriptional regulator, LysR family
AB0848	856254	857042	263	-	*trpC*	Indole-3-glycerol phosphate synthase
AB0849	857042	858346	435	-		Conserved hypothetical protein
AB0850	858325	858705	127	-		Conserved hypothetical protein
AB0851	858701	859414	238	-		Conserved hypothetical protein
AB0852	859644	859964	107	+	*oorD*	OorD subunit of 2-oxoglutarate:acceptor oxidoreductase
AB0853	859976	861103	376	+	*oorA*	OorA subunit of 2-oxoglutarate:acceptor oxidoreductase
AB0854	861108	861938	277	+	*oorB*	OorB subunit of 2-oxoglutarate:acceptor oxidoreductase
AB0855	861949	862530	194	+	*oorC*	OorC subunit of 2-oxoglutarate:acceptor oxidoreductase
AB0856	862560	863375	272	-	*dnaQ3*	DNA polymerase III, epsilon subunit
AB0857	863365	863955	197	-	*trpF*	N-(5'phosphoribosyl)anthranilate isomerase
AB0858	863955	864593	213	-	*rpe*	Ribulose-phosphate 3-epimerase
AB0859	864701	865708	336	+	*pldA*	Outer membrane phospholipase A
AB0860	865724	866143	140	-		Conserved hypothetical protein
AB0861	866149	866727	193	-		Conserved hypothetical protein
AB0862	866742	867239	166	-		Conserved hypothetical protein (DUF520 domain protein)
AB0863	867292	868044	251	-		Conserved hypothetical protein
AB0864	868048	868428	127	-		Conserved hypothetical membrane protein (DUF423)
AB0865	868444	868887	148	-		Putative nucleotide phosphoribosyltransferase
AB0866	869002	869643	214	+		Conserved hypothetical protein
AB0867	869652	869849	66	-		Hypothetical protein
AB0868	869856	870533	226	-		Conserved hypothetical protein
AB0869	870548	871603	352	-		Membrane-associated zinc metalloprotease, putative
AB0870	871616	872158	181	-	*pgsA*	CDP-1,2-diacyl-sn-glycero-3-phosphate phosphatidyltransferase
AB0871	872161	872937	259	-		Oxidoreductase, short chain dehydrogenase/reductase family
AB0872	872940	873824	295	-	*dapA*	Dihydrodipicolinate synthase
AB0873	873851	875182	444	-		Putative zinc protease
AB0874	875185	876240	352	-	*pyrD*	Dihydroorotate dehydrogenase
AB0875	876287	877993	569	-	*msbA*	Multidrug resistance protein MsbA
AB0876	878054	879352	433	-	*mviN*	Virulence factor MviN protein
AB0877	879355	880932	526	-		Endonuclease/exonuclease/phosphatase
AB0878	881116	881517	134	+	*perR*	Peroxide stress regulator
AB0879	881548	881967	140	-		Conserved hypothetical protein
AB0880	882058	882459	134	+		Conserved hypothetical protein
AB0881	882471	883094	208	-		Peptidase, S51 family
AB0882	883113	884459	449	-	*radA*	DNA repair protein RadA

AB0883	884577	885137	187	+		Conserved hypothetical protein
AB0885	885240	886154	305	+		Cytochrome c peroxidase
AB0886	886135	888612	826	+		EAL/GGDEF/PAS domain protein
AB0887	888620	889459	280	-		Hypothetical protein
AB0888	889480	890406	309	-	*ftsY*	Signal recognition particle-docking GTPase FtsY
AB0889	890422	890970	183	-		Putative lipoprotein thiredoxin
AB0890	891032	891565	178	+		Putative 5-formyltetrahydrofolate cyclo-ligase
AB0891	891581	893122	514	+		HD/HDIG/KH domain protein
AB0892	893144	893734	197	+		Putative methyltransferase
AB0893	893697	894539	281	+		ABC transporter, permease protein
AB0894	894582	895010	143	+		Hypothetical protein
AB0895	895013	895345	111	-		Hypothetical protein
AB0896	895423	895560	46	+		Hypothetical protein
AB0897	895563	895787	75	+		Hypothetical protein
AB0898	895888	896706	273	-		Oxidoreductase, short-chain dehydrogenase/reductase family
AB0899	896778	897557	260	+		Conserved hypothetical protein
AB0900	897584	898891	436	+		Hypothetical protein
AB0901	898912	899985	358	+		Cytochrome c family protein
AB0903	900004	900945	314	+		Putative methyl-accepting chemotaxis protein
AB0904	900945	901604	220	+		Two-component response regulator
AB0905	901594	902739	382	+		Two-component sensor histidine kinase
AB0906	902800	903642	281	+		Molybdenum transport system protein ModD, putative
AB0907	903662	904774	371	-		GGDEF domain protein
AB0908	904799	905239	147	-		GatB/YqeY family protein
AB0909	905281	907227	649	-		ABC transporter, ATP-binding protein
AB0910	907385	907990	202	+		Conserved hypothetical protein
AB0911	908011	908601	197	-		Conserved hypothetical protein
AB0912	908686	909384	233	-		Conserved hypothetical protein
AB0913	909769	911067	433	-		Conserved hypothetical protein
AB0914	911158	911502	115	-		Hypothetical protein
AB0915	911514	912020	169	-		Hypothetical protein
AB0916	912108	913808	567	+		Conserved hypothetical protein
AB0917	914027	914365	113	-		Conserved hypothetical protein
AB0918	914446	914805	120	-		Hypothetical protein
AB0919	914824	915606	261	-		Hypothetical protein
AB0920	915957	916547	197	-		Hypothetical protein
AB0921	916585	918117	511	-	*guaA*	GMP synthase

AB0922	918185	919633	483	-	*nadB*	L-aspartate oxidase
AB0923	919732	920145	138	+		Conserved hypothetical protein
AB0924	920135	920725	197	-		Conserved hypothetical protein (DUF45 domain protein)
AB0925	920807	921970	388	+	*aspB3*	Aspartate aminotransferase, aminotransferase, classes I and II
AB0926	921977	922867	297	+		Cation efflux protein
AB0927	922929	925259	777	+		Conserved hypothetical protein
AB0928	925249	927417	723	+	*cyaA*	Adenylate/guanylate cyclase
AB0929	927420	928730	437	-		Conserved hypothetical protein
AB0930	928742	929929	396	-		Conserved hypothetical protein
AB0931	930114	931298	395	+		Conserved hypothetical protein
AB0932	931348	932259	304	+		Conserved hypothetical protein
AB0933	932302	933546	415	+		Major facilitator superfamily protein, putative oxalate:formate antiporter
AB0934	933647	934369	241	+		Conserved hypothetical protein
AB0935	934374	934973	200	+	*cbiM*	Cobalamin (Vitamin B12) biosynthesis protein
AB0936	934973	935446	158	+		Hypothetical protein
AB0938	935446	936087	214	+		Cobalt ABC transporter, permease protein, putative
AB0939	936087	936734	216	+		Cobalt ABC transporter, ATP-binding protein, putative
AB0940	936838	938463	542	+		Hemolysin activation protein HecB, putative
AB0941	938478	947576	3033	+		Adhesin/haemagglutinin, HecA family
AB0942	947591	948457	289	+		Hypothetical protein
AB0943	948482	949261	260	+		Hypothetical protein
AB0944	949266	951641	792	+		Hypothetical protein
AB0945	951646	952371	242	+		Hypothetical protein
AB0946	952410	952655	82	+		Hypothetical protein
AB0947	952661	953374	238	+		Hypothetical protein
AB0948	953396	954049	218	+		Conserved hypothetical protein
AB0949	954128	954685	186	+		Hypothetical protein
AB0950	954750	955133	128	-		Hypothetical protein
AB0951	955147	955962	272	-		Conserved hypothetical protein
AB0953	956185	956934	250	-		Conserved hypothetical protein
AB0954	957100	958227	376	+		Conserved hypothetical protein
AB0955	958265	959347	361	+		Putative permease
AB0956	959381	959941	187	+		Hypothetical protein
AB0957	959953	960354	134	+		Hypothetical protein
AB0958	960376	962736	787	-		Conserved hypothetical protein
AB0959	962866	963219	118	+		Hypothetical protein
AB0960	963273	966083	937	-	*uvrA*	Excinuclease ABC, subunit A

AB0961	966188	966736	183	-		Conserved hypothetical protein
AB0962	967016	967423	136	+		Methyl-accepting chemotaxis protein
AB0963	967478	969232	585	-	*ggt*	Gamma-glutamyltranspeptidase
AB0964	969419	970015	199	-		Conserved hypothetical protein (DUF81 domain protein)
AB0966	970159	970890	244	-	*cysE*	Serine acetyltransferase
AB0967	970883	972691	603	-	*speA*	Arginine decarboxylase
AB0968	972695	973933	413	-	*hisS*	Histidyl-tRNA synthetase
AB0969	973926	974492	189	-	*tmk*	Thymidylate kinase
AB0970	974486	974977	164	-	*coaD*	Phosphopantetheine adenylyltransferase
AB0971	974985	975536	184	-	*ubiD*	Phenylacrylic acid decarboxylase
AB0972	975747	976370	208	+		Site-specific recombinase, resolvase family
AB0973	976447	976890	148	+	*rplI*	50S ribosomal protein L9
AB0974	976899	977432	178	+	*hslV*	Heat shock protein HslVU, ATP-dependent protease subunit HslV
AB0975	977443	978768	442	+	*hslU*	Heat shock protein HslVU, ATP-dependent protease subunit HslU
AB0976	978824	979126	101	+		Hypothetical protein
AB0977	979287	979928	214	+		TatD-related deoxyribonuclease
AB0978	979967	981223	419	+		Putative lytic murein transglycosylase
AB0979	981210	982151	314	+	*rlpA*	Rare lipoprotein A
AB0980	982164	982733	190	+	*hisB*	Imidazoleglycerol-phosphate dehydratase
AB0981	982733	983227	165	+		HAD-superfamily hydrolase subfamily IIIA:Phosphatase
AB0982	983221	983760	180	+		Hypothetical protein
AB0983	983763	984254	164	+		OstA family protein
AB0984	984257	984856	200	+		Putative ATP /GTP binding protein
AB0985	984849	985307	153	+		Acetyltransferase, GNAT Family
AB0986	985376	985849	158	+		Sigma factor, ECF family
AB0987	985853	986818	322	+		Sigma factor regulatory protein, FecR/PupR family
AB0988	986960	989314	785	+		TonB-dependent receptor protein
AB0989	989365	990318	318	-	*argC*	N-acetyl-gamma-glutamyl-phosphate reductase
AB0990	990377	991738	454	-		Transcriptional regulator, GntR family
AB0991	991829	992191	121	+		FMN-binding protein
AB0992	992207	992803	199	+		Putative antibiotic resistance protein
AB0993	992817	994469	551	-		AcrB/AcrD/AcrF family protein
AB0994	994469	996028	520	-		AcrB/AcrD/AcrF family protein
AB0995	996018	996740	241	-		AcrA/AcrE family protein
AB0996	996740	998089	450	-		Outer membrane efflux protein
AB0997	998221	1000161	647	-		Response regulator receiver:Metal-dependent phosphohydrolase, HD subdomain
AB0998	1000193	1000915	241	-	*fliP*	Flagellar biosynthetic protein FliP

AB0999	1000994	1002772	593	-	*pbpC*	Penicillin-binding protein
AB1000	1002772	1003197	142	-		Hypothetical protein
AB1001	1003209	1004480	424	-		Conserved hypothetical protein
AB1002	1004476	1005285	270	-	*ftsX*	Cell division protein FtsX
AB1003	1005275	1005934	220	-	*ftsE*	Cell division ATP-binding protein FtsE
AB1004	1005934	1007124	397	-		Conserved hypothetical protein
AB1005	1007135	1008394	420	-		Fibronectin type III domain protein
AB1006	1008345	1009328	328	-	*rluD*	Ribosomal large subunit pseudouridine synthase D
AB1007	1009348	1010454	369	+	*mrdB*	Rod shape-determining protein RodA
AB1008	1010484	1011260	259	-		Conserved hypothetical membrane protein
AB1009	1011293	1012570	426	+	*hemL*	Glutamate-1-semialdehyde 2,1-aminomutase
AB1010	1012587	1012898	104	+		Conserved hypothetical protein (DUF1255 domain protein)
AB1011	1012912	1013217	102	+		Conserved hypothetical protein
AB1012	1013159	1013752	198	+		Conserved hypothetical protein
AB1013	1013767	1014450	228	-		Conserved hypothetical protein
AB1014	1014456	1016333	626	-	*rpoD*	RNA polymerase sigma 70 factor
AB1015	1016501	1016998	166	+	*leuD*	3-isopropylmalate dehydratase, small subunit
AB1016	1017002	1018066	355	+	*leuB*	3-isopropylmalate dehydrogenase
AB1017	1018091	1019017	309	+		Exopolyphosphatase-related protein
AB1018	1019034	1019390	119	-		HIT family protein
AB1019	1019615	1019725	37	+	*rpmJ*	50S ribosomal protein L36
AB1020	1019734	1020099	122	+	*rpsM*	30S ribosomal protein S13
AB1021	1020113	1020502	130	+	*rpsK*	30S ribosomal protein S11
AB1022	1020516	1021139	208	+	*rpsD*	30S ribosomal protein S4
AB1023	1021160	1022155	332	+	*rpoA*	DNA-directed RNA polymerase, alpha chain
AB1024	1022173	1022520	116	+	*rplQ*	50S ribosomal protein L17
AB1025	1022677	1024035	453	+	*gatA*	Glutamyl-tRNA(Gln) amidotransferase, subunit A
AB1026	1024058	1025500	481	+	*guaB*	Inosine-5-monophosphate dehydrogenase
AB1027	1025653	1026102	150	+		Conserved hypothetical protein
AB1028	1026132	1026626	165	-		Hypothetical protein
AB1029	1026683	1028254	524	-		Two-component sensor histidine kinase
AB1030	1028268	1028939	224	-		Two-component response regulator
AB1031	1029118	1030914	599	+		Outer membrane efflux protein, putative
AB1032	1030927	1031637	237	+		Conserved hypothetical protein
AB1033	1031657	1039207	2517	+		Hypothetical membrane protein
AB1034	1039230	1040573	448	+		Putative membrane protein
AB1035	1040576	1042693	706	+		Peptidase, M50 family

AB1036	1042729	1043208	160	-		DnaJ domain protein
AB1037	1043296	1043559	88	+		DnaJ domain protein
AB1038	1043575	1044666	364	+		Glycosyl hydrolase
AB1039	1044676	1046580	635	-		Two-component sensor histidine kinase
AB1040	1046586	1047254	223	-		Two-component response regulator
AB1041	1047376	1047885	170	-		Hypothetical protein
AB1042	1048008	1048793	262	-		ABC transporter, ATP-binding protein
AB1044	1048932	1049408	159	+		Sigma factor, ECF family
AB1045	1049408	1050343	312	+		Sigma factor regulatory protein, FecR/PupR family
AB1046	1050422	1051474	351	+		NADP-dependent alcohol dehydrogenase
AB1047	1051503	1052120	206	+		Conserved hypothetical protein
AB1048	1052123	1052713	197	-		Cyclic nucleotide-binding protein
AB1049	1052826	1053704	293	+		Conserved hypothetical membrane protein (DUF6 domain protein)
AB1050	1053714	1054076	121	-		Conserved hypothetical protein (DUF24 domain protein)
AB1051	1054174	1054710	179	+		Conserved hypothetical protein
AB1052	1054739	1056091	451	-		Putative sodium:sulfate symporter
AB1053	1056128	1056442	105	-	*sugE*	Suppresses groEL, may be chaperone
AB1054	1056578	1057456	293	+		Conserved hypothetical protein, possible transporter
AB1055	1057474	1058277	268	+		Transcriptional regulator, AraC family
AB1056	1058345	1058866	174	+		Conserved hypothetical protein
AB1057	1058875	1059741	289	-		Transcriptional regulator, LysR family
AB1058	1059841	1060860	340	+		Putative integral membrane protein
AB1059	1060885	1061622	246	-		Conserved hypothetical periplasmic protein
AB1060	1061712	1062611	300	-		Auxin efflux carrier protein
AB1061	1062618	1062986	123	-		Conserved hypothetical protein (DUF24 domain protein)
AB1062	1063121	1063699	193	+		Flavodoxin-like fold domain protein, putative NADPH-quinone reductase
AB1063	1063712	1064005	98	+		Conserved hypothetical protein
AB1064	1064021	1065043	341	+		NADH:flavin oxidoreductase/NADH oxidase
AB1065	1065064	1065957	298	+		Conserved hypothetical integral membrane protein (DUF6 domain protein)
AB1066	1065988	1066620	211	+		NAD(P)H-flavin nitroreductase
AB1067	1066736	1068226	497	+		Hypothetical protein
AB1068	1068311	1069906	532	+		ABC transporter, ATP-binding protein
AB1069	1069967	1070440	158	-		Acyl-CoA thioester hydrolase family protein
AB1070	1070533	1072491	653	-		Methyl-accepting chemotaxis protein
AB1071	1072590	1074533	648	-	*lig*	DNA ligase
AB1072	1074552	1075727	392	-		Glutathionylspermidine synthase family protein
AB1073	1075734	1076372	213	-		Conserved hypothetical lipoprotein

AB1074	1076506	1077948	481	+	*dgt*	Deoxyguanosinetriphosphate triphosphohydrolase
AB1076	1078224	1079297	358	+	*mloA*	Conserved hypothetical protein, MloA homolog
AB1077	1079392	1080660	423	+		Conserved hypothetical protein
AB1080	1081125	1081916	264	-	*aroE*	Shikimate 5-dehydrogenase
AB1081	1081922	1082530	203	-		Methyltransferase, putative
AB1082	1082591	1083256	222	+		Conserved hypothetical protein (DUF152 domain protein)
AB1083	1083354	1084610	419	+	*maeA*	NAD-dependent malic enzyme
AB1084	1084681	1085511	277	+	*purU*	Formyltetrahydrofolate deformylase
AB1085	1085516	1085977	154	+		RNA methylase, SpoU family
AB1086	1085976	1086200	75	-		Hypothetical protein
AB1087	1086190	1087950	587	-		Sodium:phosphate cotransporter
AB1088	1088081	1088458	126	+		Hypothetical protein
AB1089	1088464	1088802	113	+		Hypothetical protein
AB1090	1088806	1089465	220	+		Two-component response regulator
AB1091	1089458	1090309	284	+		Two-component sensor histidine kinase
AB1092	1090356	1091282	309	+		Putative protease
AB1093	1091263	1091700	146	+		Conserved hypothetical protein
AB1094	1091737	1092114	126	-		Hypothetical protein
AB1095	1092228	1093355	376	-	*cydB*	Cytochrome bd oxidase, subunit II
AB1096	1093360	1094883	508	-	*cydA*	Cytochrome bd oxidase, subunit I
AB1097	1094902	1095105	68	-		Conserved hypothetical protein
AB1098	1095267	1095692	142	-		Conserved hypothetical protein
AB1099	1095718	1096875	386	-		Conserved hypothetical protein
AB1100	1096981	1097520	180	-		TPR repeat protein, SEL1 subfamily
AB1101	1097735	1097953	73	+		Hypothetical protein
AB1102	1097956	1098621	222	-	*aat*	Leucyl/phenylalanyl-tRNA--protein transferase
AB1103	1098680	1099363	228	+	*rsuA*	Ribosomal small subunit pseudouridine synthase A
AB1104	1099366	1099989	208	-		HAD-superfamily hydrolase
AB1105	1100305	1100805	167	+		Conserved hypothetical protein
AB1106	1100808	1101515	236	+		Conserved hypothetical protein
AB1107	1101546	1101728	61	+		Hypothetical protein
AB1108	1101751	1103667	639	+		TonB-dependent receptor protein
AB1109	1103672	1104499	276	+		Putative iron compound ABC transporter, periplasmic substrate-binding protein
AB1110	1104480	1105178	233	+		Putative iron compound ABC transporter, ATP-binding protein
AB1111	1105178	1106137	320	+		Putative iron compound ABC transporter, permease protein
AB1112	1106137	1106625	163	-		Phosphohistidine phosphatase
AB1113	1106641	1108407	589	-		ABC transporter, ATP-binding protein

AB1114	1108503	1108748	82	+		Hypothetical protein
AB1115	1108741	1109403	221	+		Two-component response regulator
AB1116	1109363	1110547	395	+		Two-component sensor histidine kinase
AB1117	1110544	1110882	113	+		Conserved hypothetical protein
AB1118	1110956	1111411	152	+		Hypothetical protein
AB1119	1111445	1112257	271	-		Conserved hypothetical protein
AB1120	1112315	1112827	171	+		Hypothetical protein
AB1121	1112843	1113715	291	-		GGDEF domain protein
AB1122	1113909	1114220	104	+		Hypothetical protein
AB1123	1114233	1115285	351	-		Putative ATP-dependent RNA helicase RhlE
AB1124	1115668	1117044	459	+		Two-component sensor histidine kinase
AB1125	1117044	1117730	229	+		Two-component response regulator
AB1126	1118036	1120597	854	+		Hypothetical outer membrane protein
AB1127	1120626	1122785	720	+		ABC transporter, transmembrane region
AB1128	1122781	1124247	489	+		HlyD family secretion protein
AB1129	1124257	1124847	197	+		Two-component response regulator
AB1130	1124920	1125516	199	+		Conserved hypothetical protein
AB1131	1125516	1127387	624	+		EAL/GGDEF/HAMP domain protein
AB1132	1127464	1128495	344	+	*aroB*	3-dehydroquinate synthase
AB1133	1128500	1130236	579	+		Conserved hypothetical integral membrane protein
AB1134	1130243	1131508	422	+		MiaB-like tRNA modifying enzyme
AB1135	1131492	1132961	490	+	*ftsH2*	Cell division protein FtsH
AB1136	1132951	1133466	172	+		Conserved hypothetical protein
AB1137	1133466	1133999	178	+	*mog*	Molybdenum cofactor biosynthesis protein Mog
AB1138	1134020	1134631	204	-	*ribB*	3,4-dihydroxy-2-butanone 4-phosphate synthase
AB1139	1134991	1135572	194	+		Conserved hypothetical protein
AB1140	1135585	1136106	174	+		Conserved hypothetical protein
AB1141	1136127	1136363	79	+		Conserved hypothetical protein
AB1142	1136363	1139692	1110	+		Hypothetical protein
AB1143	1139700	1140110	137	+		Conserved hypothetical protein
AB1144	1140130	1140372	81	-		Conserved hypothetical protein
AB1145	1140468	1140707	80	+		Hypothetical protein
AB1146	1140762	1141238	159	+		Conserved hypothetical protein
AB1147	1141351	1142835	495	+		ABC transporter, ATP-binding protein
AB1149	1142902	1143345	148	+		Conserved hypothetical protein
AB1150	1143508	1144098	197	+	*torC*	Cytochrome c-type protein TorC
AB1151	1144098	1146578	827	+	*bisC*	Biotin sulfoxide reductase

AB1152	1146610	1147428	273	-		Alpha/beta hydrolase fold protein
AB1153	1147505	1148095	197	+		Transcriptional regulator, TetR family
AB1154	1148145	1150343	733	+	*mutS2*	Mismatch repair ATPase
AB1155	1150339	1151673	445	-		Conserved hypothetical protein, putative efflux protein
AB1156	1151767	1152318	184	-		Hypothetical protein
AB1157	1152408	1155164	919	-		Conserved hypothetical protein (DUF748 domain protein)
AB1158	1155252	1156349	366	+	*dapE*	Succinyl-diaminopimelate desuccinylase
AB1159	1156461	1157777	439	+	*amtB*	Ammonium transporter
AB1160	1157800	1158135	112	+	*glnB2*	Nitrogen regulatory protein PII
AB1161	1158301	1158855	185	+	*pssA*	CDP-diacylglycerol--serine O-phosphatidyltransferase
AB1162	1158866	1159783	306	+		Ppx/GppA phosphatase family protein
AB1163	1159786	1160571	262	-		Hypothetical protein
AB1164	1160732	1162426	565	+	*ilvI*	Acetolactate synthase, large subunit
AB1165	1162429	1162923	165	+	*ilvH*	Acetolactate synthase, small subunit
AB1166	1162945	1163889	315	+	*lpxD*	UDP-3-O-[3-hydroxymyristoyl] glucosamine N-acyltransferase
AB1167	1164050	1166107	686	+	*ftsK*	Cell division protein FtsK
AB1168	1166175	1166858	228	+		Two-component response regulator
AB1169	1166977	1168170	398	+		Two-component sensor histidine kinase
AB1170	1168235	1169098	288	+		Conserved hypothetical protein
AB1171	1169171	1171015	615	+		Two-component sensor histidine kinase
AB1172	1171011	1171697	229	+		Two-component response regulator
AB1173	1171772	1172530	253	+		Hypothetical protein
AB1174	1172599	1173261	221	+		Two-component response regulator
AB1175	1173293	1173910	206	+		Hypothetical protein
AB1176	1174011	1174709	233	+		Hypothetical protein
AB1177	1174743	1175351	203	+		Hypothetical protein
AB1178	1175440	1175874	145	-		Conserved hypothetical protein
AB1179	1176074	1176361	96	+		Hypothetical protein
AB1180	1176351	1179050	900	+		Conserved hypothetical protein, putative DNA helicase
AB1181	1179144	1179239	32	+		Hypothetical protein
AB1182	1179437	1179976	180	+		Conserved hypothetical protein
AB1183	1180064	1181518	485	+	*engA*	GTP-binding protein
AB1184	1181548	1183119	524	+		Sulfate permease family protein
AB1185	1183119	1183745	209	+	*hemD*	Putative uroporphyrinogen III cosynthase HemD
AB1186	1183807	1184016	70	+		Hypothetical protein
AB1187	1183988	1185247	420	+	*purD*	Phosphoribosylamine-glycine ligase
AB1188	1185257	1185691	145	+		Conserved hypothetical protein

AB1189	1185687	1187861	725	+		Conserved hypothetical membrane protein
AB1190	1187864	1188514	217	+		Conserved hypothetical protein
AB1191	1188524	1190698	725	+	*pnp*	Polyribonucleotide nucleotidyltransferase
AB1192	1190831	1191196	122	+	*cheY1*	Chemotaxis protein CheY
AB1193	1191212	1193266	685	+	*cheA*	Chemotaxis protein CheA
AB1194	1193275	1194114	280	+	*cheR*	Chemotaxis protein methyltransferase
AB1195	1194114	1194800	229	+	*cheD*	Chemotaxis protein CheD
AB1196	1194836	1195912	359	+	*cheB*	Protein-glutamate methylesterase CheB
AB1197	1195916	1196506	197	+		Conserved hypothetical protein
AB1198	1196519	1197670	384	+	*fsr*	Fosmidomycin resistance protein
AB1199	1197782	1198831	350	+	*xerD*	Integrase/recombinase XerD
AB1200	1198836	1199177	114	+		Conserved hypothetical protein
AB1201	1199189	1199464	92	-		Hypothetical protein
AB1202	1199486	1199959	158	-		Hypothetical protein
AB1203	1200015	1201982	656	-	*prlC*	Oligopeptidase A
AB1204	1201988	1202818	277	-	*hemK*	Modification methylase
AB1205	1202864	1203934	357	-	*hemN1*	Oxygen-independent coproporphyrinogen III oxidase
AB1206	1203990	1204484	165	+	*nudH*	(Di)nucleoside polyphosphate hydrolase
AB1207	1204505	1205713	403	+	*lysC*	Aspartokinase
AB1208	1205719	1206267	183	+		Conserved hypothetical protein
AB1209	1206267	1206899	211	+	*holB*	Putative DNA polymerase III delta prime subunit HolB
AB1210	1206914	1208050	379	+	*folP*	Dihydropteroate synthase
AB1211	1208115	1208639	175	-		Conserved hypothetical protein
AB1212	1208639	1209862	408	-	*cfa*	Cyclopropane-fatty-acyl-phospholipid synthase
AB1213	1209868	1210617	250	-		Conserved hypothetical protein (DUF1365 domain protein)
AB1214	1210622	1211857	412	-		Conserved hypothetical protein
AB1215	1211857	1212342	162	-		Conserved hypothetical lipoprotein
AB1216	1212403	1213662	420	-		Sugar transporter, putative
AB1217	1213706	1214461	252	-		Oxidoreductase, short chain dehydrogenase/reductase family
AB1218	1214564	1215397	278	-	*tyrA*	Prephenate dehydrogenase
AB1219	1215469	1217772	768	+		Outer membrane surface antigen protein
AB1220	1217775	1218845	357	+		SAM domain protein
AB1221	1218852	1220141	430	+		Peptidase, M16 family
AB1222	1220147	1221445	433	+	*gltX2*	Glutamyl-tRNA synthetase
AB1223	1221445	1221714	90	+		Conserved hypothetical membrane protein
AB1225	1221727	1223382	552	+	*slt*	Soluble lytic murein transglycosylase (slt)
AB1226	1223357	1223851	165	-		Hypothetical protein

AB1227	1223949	1224443	165	+	*mobB*	Molybdopterin-guanine dinucleotide biosynthesis protein
AB1228	1224450	1225289	280	+	*fbp*	Fructose-1,6-biphosphatase
AB1229	1225285	1225488	68	+		Conserved hypothetical protein
AB1230	1225506	1227455	650	+	*metS*	Methionyl-tRNA synthetase
AB1231	1227458	1228453	332	+		Conserved hypothetical protein
AB1232	1228462	1229115	218	-		Peptidase, S24 family
AB1233	1229225	1229317	31	+		Hypothetical protein
AB1234	1229441	1229713	91	+		Hypothetical protein
AB1235	1229723	1231552	610	+	*pycB2*	Pyruvate/oxaloacetate carboxyltransferase
AB1236	1231629	1233203	525	+	*pckA*	Phosphoenolpyruvate carboxykinase
AB1237	1233246	1234274	343	-	*ribAB*	GTP cyclohydrolase II / 3,4-dihydroxy-2-butanone 4-phosphate synthase
	1234393	**1234464**		**+**		**tRNA-Gln-1 (anticodon: TTG)**
	1234492	**1234565**		**+**		**tRNA-Met-1 (anticodon: CAT)**
	1234645	**1234718**		**+**		**tRNA-Thr-1 (anticodon: TGT)**
AB1238	1234737	1236749	671	-	*glyS*	Glycyl-tRNA synthetase, beta chain
AB1239	1236745	1236900	52	-		Hypothetical protein
AB1240	1236932	1237312	127	-		Conserved hypothetical protein
AB1241	1237322	1237531	70	-		Conserved hypothetical protein
AB1242	1237531	1238112	194	-	*gidB*	Glucose inhibited division protein B
AB1243	1238115	1238687	191	-	*ribA*	GTP cyclohydrolase II
AB1244	1238749	1239720	324	+	*hemB*	Delta-aminolevulinic acid dehydratase
AB1245	1239732	1240808	359	+		Two-component sensor histidine kinase
AB1246	1240808	1241467	220	+		Two-component response regulator
AB1247	1241450	1242151	234	-		Radical SAM domain protein
AB1248	1242105	1242266	54	-		Conserved hypothetical protein
AB1249	1242247	1244358	704	-	*nrdD*	Oxygen-sensitive ribonucleoside-triphosphate reductase
AB1250	1244572	1245498	309	+	*argF*	Ornithine carbamoyltransferase
AB1251	1245502	1246866	455	+	*hemN2*	Oxygen-independent coproporphyrinogen III oxidase
AB1252	1246918	1247385	156	-		Hypothetical protein
AB1253	1247389	1247598	70	-		Conserved hypothetical protein
AB1254	1247610	1248551	314	-	*lpxK*	Lipid A biosynthesis protein LpxK
AB1255	1248561	1249694	378	-		DegT/DnrJ/EryC1/StrS aminotransferase
AB1256	1249694	1250455	254	-	*nadE*	NH(3)-dependent NAD+ synthetase
AB1257	1250486	1250695	70	-		Hypothetical protein
AB1258	1250706	1250927	74	-		Hypothetical protein
AB1259	1250931	1251683	251	-		DnaJ domain protein
AB1260	1252683	1252994	104	+		Hypothetical protein

AB1261	1253269	1253622	118	+		Conserved hypothetical membrane protein
AB1262	1253625	1254362	246	+	*tatC*	Sec-independent protein secretion pathway component TatC
AB1263	1254369	1255388	340	+	*queA*	S-adenosylmethionine:tRNA ribosyltransferase-isomerase
AB1264	1255402	1256142	247	+	*dnaQ4*	DNA polymerase III, epsilon subunit
AB1265	1256146	1256898	251	+		Conserved hypothetical protein
AB1266	1256893	1258125	411	-	*comE*	Competence locus E
AB1267	1258157	1258630	158	+		Hypothetical protein
AB1268	1258645	1260654	670	-		Conserved hypothetical protein
AB1269	1260668	1262899	744	-		Hypothetical protein
AB1270	1262889	1263461	191	-		Hypothetical protein
AB1271	1263533	1264522	330	+		Conserved hypothetical protein
AB1272	1264624	1265919	432	+	*glpC*	Anaerobic glycerol-3-phosphate dehydrogenase, subunit C (glpC)
AB1273	1265927	1266742	272	+	*lgt*	Phosphatidylglycerol-prolipoprotein diacylglyceryl transferase
AB1274	1266749	1266943	65	-		Hypothetical protein
AB1275	1266980	1267669	230	-		Two-component response regulator
AB1276	1267744	1270431	896	-	*polA*	DNA polymerase I
AB1277	1270509	1271039	177	+		Acetyltransferase
AB1278	1271065	1271793	243	+	*kdsB*	3-deoxy-manno-octulosonate cytidylyltransferase
AB1279	1271800	1273731	644	+		EAL/GGDEF domain protein
AB1280	1273749	1274468	240	-		ABC transporter, ATP-binding protein
AB1281	1274464	1274877	138	-		Conserved hypothetical protein
AB1282	1274891	1275871	327	-	*trpD*	Anthranilate phosphoribosyltransferase
AB1283	1276083	1276958	292	+		Conserved hypothetical protein
AB1284	1276974	1277219	82	-		S4 domain protein
AB1285	1277301	1278539	413	+	*argG*	Argininosuccinate synthase
AB1286	1278589	1280022	478	-	*dltA*	D-alanine activating enzyme
AB1287	1280022	1281155	378	-	*dltB*	D-alanyl transfer protein
AB1288	1281158	1281295	46	-		Hypothetical protein
AB1289	1281309	1282433	375	-	*dltD*	Poly D-alanine transfer protein
AB1290	1282436	1282660	75	-	*dltC*	D-alanyl carrier protein
AB1291	1282806	1283303	166	+		Conserved hypothetical protein
AB1292	1283686	1285179	498	+		Sulfate permease
AB1293	1285185	1286021	279	+	*uspA*	Universal stress protein
AB1295	1286691	1287338	216	-	*ktrA*	TRK system potassium uptake protein TrkA, putative
AB1296	1287338	1288663	442	-	*ktrB*	TRK system potassium uptake protein TrkB, putative
AB1297	1288673	1289356	228	-	*kdpE*	Two component system transcriptional regulatory protein
AB1298	1289356	1290381	342	-	*kdpD*	Two-component regulatory protein sensor kinase KdpD

AB1299	1290568	1291491	308	-	*dut*	Deoxyuridinetriphosphatase
AB1300	1291686	1292255	190	-	*recR*	Recombination protein RecR
AB1301	1292355	1293470	372	+	*dnaJ*	Co-chaperone and heat shock protein DnaJ
AB1302	1293505	1294719	405	+	*trpB2*	Tryptophan synthase, beta chain
AB1303	1294733	1295320	196	+		Hypothetical protein
AB1304	1295327	1295983	219	-		Hypothetical protein
AB1305	1295987	1296802	272	-		Conserved hypothetical protein (DUF455 domain protein)
AB1306	1296857	1297447	197	+		Beta-lactamase-like protein
AB1307	1297450	1298349	300	+		GGDEF domain protein
AB1308	1298360	1299325	322	+		GGDEF domain protein
AB1309	1299334	1300245	304	-		Conserved hypothetical protein
AB1310	1300314	1300808	165	+		Hypothetical protein
AB1311	1300915	1303659	915	+		Cytochrome c biogenesis protein
AB1312	1303701	1304984	428	+	*pepD*	Aminoacyl-histidine dipeptidase PepD
AB1313	1304992	1305285	98	-		Hypothetical protein
AB1314	1305351	1307831	827	-		Methyl-accepting chemotaxis protein
AB1315	1308062	1308313	84	+		Hypothetical protein
AB1316	1308306	1308833	176	-	*lolA*	Outer membrane lipoprotein carrier protein LolA
AB1317	1308890	1311505	872	+	*secA*	Protein translocase, SecA subunit
AB1318	1311510	1312712	401	+		Conserved hypothetical integral membrane protein
AB1319	1312734	1315649	972	-		Hypothetical protein
AB1320	1315570	1316688	373	+		4-amino-4-deoxychorismate lyase PabC
AB1321	1316810	1318999	730	+	*icd*	Isocitrate dehydrogenase
AB1322	1319102	1320043	314	+	*mdh*	Malate dehydrogenase
AB1323	1320146	1320421	92	+		Conserved hypothetical protein, putative cytochrome c
AB1324	1320449	1320850	134	-		Hypothetical protein
AB1325	1320937	1322211	425	+		Conserved hypothetical protein
AB1326	1322238	1322513	92	-		Hypothetical protein
AB1327	1322509	1323408	300	-	*mraW*	S-adenosyl-methyltransferase
AB1328	1323468	1324043	192	+		Conserved hypothetical protein
AB1329	1324160	1324432	91	+	*hup*	DNA-binding protein HU
	1324502	**1324582**		**+**		**tRNA-Leu-1 (anticodon: CAA)**
AB1330	1324763	1325977	405	+		Putative phage integrase
AB1331	1326731	1326940	70	-		Hypothetical protein
AB1332	1327013	1327564	184	-		Hypothetical protein
AB1333	1327652	1327987	112	-		Hypothetical protein
AB1334	1328136	1328930	265	-		Hypothetical protein

AB1335	1329234	1330313	360	+		Conserved hypothetical protein
AB1336	1330422	1330691	90	+		Hypothetical protein
AB1337	1330796	1332832	679	-		DEAD/DEAH box helicase domain protein
AB1338	1332828	1333994	389	-		Hypothetical protein
AB1339	1334421	1334747	109	-		Hypothetical protein
AB1340	1334980	1336620	547	+		Hypothetical protein
AB1341	1336697	1337890	398	+		Conserved hypothetical protein
AB1342	1338172	1341051	960	-		Hypothetical protein
AB1343	1341056	1341355	100	-		Hypothetical protein
AB1344	1341381	1341731	117	-		Hypothetical protein
AB1345	1341706	1342188	161	-		Hypothetical protein
AB1346	1342193	1342699	169	-		Hypothetical protein
AB1347	1342704	1344776	691	-		Hypothetical protein
AB1348	1344781	1345620	280	-		Hypothetical protein
AB1349	1345624	1346544	307	-		Conserved hypothetical protein
AB1350	1346691	1347140	150	-		Hypothetical protein
AB1351	1347155	1347553	133	-		Hypothetical protein
AB1352	1347566	1348354	263	-		Hypothetical protein
AB1353	1348537	1349172	212	-		Hypothetical protein
AB1354	1349253	1349483	77	-		Hypothetical protein
AB1355	1349498	1349716	73	-		Hypothetical protein
AB1356	1349716	1350192	159	-		Hypothetical protein
AB1357	1350234	1350605	124	-		Hypothetical protein
AB1358	1350938	1351387	150	+		Hypothetical protein
AB1359	1351529	1351933	135	-		Conserved hypothetical protein
AB1360	1352079	1354310	744	+	*norB*	Nitric oxide reductase, cytochrome b subunit
AB1361	1354348	1354914	189	-		Hypothetical protein
AB1362	1354914	1356080	389	-		D-amino acid oxidase domain protein
AB1363	1356080	1356391	104	-		Conserved hypothetical protein
AB1364	1356506	1356871	122	+		Response regulator receiver domain protein, CheY-like
AB1365	1356874	1357488	205	+		Inhibitor of MCP methylation, CheC
AB1366	1357488	1358978	497	+		Two-component sensor histidine kinase
AB1367	1359058	1359924	289	+	*cbpA*	Curved DNA-binding protein CbpA
AB1368	1359939	1360316	126	+		Transcriptional regulator (MerR family), putative heat shock regulator HspR
AB1369	1360392	1361381	330	+		HlyD-family secretion protein
AB1370	1361371	1363068	566	+		ABC transporter, ATP-binding protein
AB1371	1363072	1364157	362	+		ABC transporter, permease protein

AB1372	1364160	1365248	363	+		ABC transporter, permease protein
AB1373	1365255	1366331	359	-		Conserved hypothetical protein (DUF475 domain protein)
AB1374	1366423	1367712	430	-	*brnQ*	Branched-chain amino acid transport system II carrier protein
AB1376	1367766	1368620	285	-		Conserved hypothetical protein
	1368659	**1368731**		**-**		**tRNA-Glu-3 (anticodon: TTC)**
AB1377	1368804	1369244	147	-		Conserved hypothetical protein
AB1378	1369247	1372489	1081	-	*carB*	Carbamoylphosphate synthase, large subunit
AB1379	1372604	1373419	272	+		Polysaccharide deacetylase
AB1380	1373440	1374732	431	-	*nhaA1*	Sodium:hydrogen antiporter
AB1381	1374758	1374952	65	-		Hypothetical protein
AB1382	1374952	1376058	369	-	*metX*	Homoserine O-acetyltransferase
AB1383	1376172	1378526	785	-		TonB-dependent receptor protein
AB1384	1378839	1379099	87	+		Hypothetical protein
AB1385	1379137	1380267	377	-	*ftsZ*	Cell division protein FtsZ
AB1386	1380270	1381658	463	-	*ftsA*	Cell division protein FtsA
AB1387	1381666	1383120	485	-		Conserved hypothetical membrane protein
AB1388	1383186	1385510	775	-	*recD*	Exodeoxyribonuclease V, alpha subunit
AB1389	1385513	1385875	121	-		Conserved hypothetical protein
AB1391	1385875	1386222	116	-		Arsenate reductase
AB1392	1386340	1387161	274	-		Hypothetical protein
AB1393	1387221	1387508	96	-		Conserved hypothetical protein
AB1394	1387498	1387725	76	-		Conserved hypothetical protein
AB1395	1387896	1389584	563	+		Conserved hypothetical membrane protein
AB1396	1389590	1389871	94	+		FlhB domain protein
AB1397	1389888	1391621	578	-		ABC transporter, ATP-binding protein
AB1398	1391727	1392233	169	+		Conserved hypothetical protein (DUF1706 domain protein)
AB1399	1392276	1393460	395	-	*dapD*	2,3,4,5-tetrahydropyridine-2-carboxylate N-succinyltransferase DapD
AB1400	1393565	1395565	667	-		HAD-superfamily hydrolase
AB1401	1395870	1396238	123	+		Hypothetical protein
AB1403	1396295	1398139	615	-	*priA*	Primosomal protein N'
AB1404	1398142	1398534	131	-		Hypothetical protein
AB1405	1398572	1398781	70	-		Hypothetical protein
AB1406	1398781	1398972	64	-		Hypothetical protein
AB1407	1399025	1399435	137	-		Hypothetical protein
AB1408	1399512	1399880	123	-	*hypA*	Hydrogenase expression/formation protein HypA
AB1409	1399987	1400982	332	-	*hypE*	Hydrogenase expression/formation protein HypE
AB1410	1400986	1401339	118	-		Conserved hypothetical protein

AB1411	1401352	1402197	282	-		3-hydroxyisobutyrate dehydrogenase family protein
AB1412	1402197	1403705	503	-		McrBC endonuclease McrB, putative
AB1413	1403701	1404861	387	-		McrBC catalytic subunit McrC, putative
AB1414	1404873	1405994	374	-	*hypD*	Hydrogenase expression/formation protein HypD
AB1415	1406011	1406289	93	-	*hypC*	Hydrogenase expression/formation protein HypC
AB1416	1406418	1407236	273	-	*hypB*	Hydrogenase expression/formation protein HypB
AB1417	1407348	1407986	213	+		Conserved hypothetical protein
AB1418	1408077	1410047	657	+		Methyl-accepting chemotaxis protein
AB1419	1410071	1410910	280	-		Conserved hypothetical membrane protein (DUF161)
AB1420	1410928	1412160	411	-		HI0933-like protein
AB1421	1412237	1413340	368	+		Conserved hypothetical membrane protein (DUF808)
AB1422	1413490	1414068	193	-		Hypothetical protein
AB1423	1414104	1414880	259	-		Conserved hypothetical protein
AB1424	1414990	1415691	234	-		Conserved hypothetical membrane protein (DUF481)
AB1425	1415828	1416127	100	+		Conserved hypothetical protein
AB1426	1416162	1418066	635	-		Hypothetical protein
AB1427	1418154	1419617	488	-	*thiI*	Thiamine biosynthesis protein ThiI
AB1428	1419705	1419959	85	+		Hypothetical protein
AB1429	1419975	1420454	160	-		Hypothetical protein
AB1430	1420483	1421739	419	-		Conserved hypothetical protein (DUF1504 domain protein)
AB1431	1422132	1424378	749	-	*hypF*	Transcriptional regulatory protein HypF
AB1432	1424412	1426028	539	-		Conserved hypothetical protein
AB1433	1426015	1426590	192	-	*hydD*	Ni/Fe hydrogenase, expression/formation protein
AB1434	1426575	1427237	221	-	*hydC*	Ni/Fe hydrogenase, cytochrome b subunit
AB1435	1427262	1428989	576	-	*hydB*	Ni/Fe-hydrogenase, large subunit
AB1436	1428982	1430157	392	-	*hydA*	Ni/Fe-hydrogenase, small subunit
AB1437	1430398	1431354	319	-		Sigma factor regulatory protein, FecR/PupR family
AB1438	1431360	1431833	158	-		Sigma factor, ECF family
AB1439	1431936	1433483	516	-		Conserved hypothetical protein
AB1440	1433452	1434039	196	-	*hyaD*	Ni/Fe hydrogenase, expression/formation protein
AB1441	1434131	1434856	242	-	*hyaC*	Ni/Fe hydrogenase, cytochrome b subunit
AB1442	1434837	1436576	580	-	*hyaB*	Ni/Fe-hydrogenase, large subunit
AB1443	1436579	1437811	411	-	*hyaA*	Ni/Fe-hydrogenase, small subunit
AB1444	1438048	1439394	449	-	*hupL*	Ni/Fe-dependent hydrogenase, large subunit
AB1445	1439400	1440290	297	-	*hupS*	Ni/Fe-dependent hydrogenase, small subunit
AB1446	1440283	1440744	154	-		Transcriptional regulator, TetR family
AB1447	1440985	1443558	858	-	*acnB*	Aconitate hydratase 2

AB1448	1443817	1444254	438	+		Thioesterase/acetyltransferase, putative
AB1449	1444250	1445242	331	-		GGDEF/PAS domain protein
AB1450	1445464	1446207	248	-		Conserved hypothetical protein (DUF28 domain protein)
AB1451	1446307	1447047	247	+		VacJ-like lipoprotein
AB1452	1447054	1447641	196	+		Putative periplasmic protein
AB1453	1447644	1450127	828	+		Conserved hypothetical integral membrane protein
AB1454	1450130	1450690	187	+		Lysine decarboxylase-like protein
AB1455	1450870	1451502	211	+		HAD-superfamily hydrolase
AB1456	1451505	1452068	188	-		Putative lipoprotein thiredoxin
AB1457	1452084	1452728	215	-	*dsbA*	DsbA-like thioredoxin domain protein
AB1458	1452721	1453128	136	-	*dsbB*	Disulfide bond formation protein, DsbB family
AB1459	1453217	1455739	841	+		Glycosyltransferase
AB1460	1455844	1456314	157	+		Sigma factor, ECF family
AB1461	1456317	1457153	279	+		Sigma factor regulatory protein, FecR/PupR family
AB1462	1457255	1459567	771	+		TonB-dependent receptor protein
AB1463	1459749	1461185	479	+		GGDEF domain protein
AB1464	1461133	1462080	316	+		Conserved hypothetical protein (DUF125 domain protein)
AB1465	1462106	1464088	661	-	*betT*	High-affinity choline transport
AB1466	1464225	1465838	538	-	*kefB*	Glutathione-regulated potassium-efflux system protein KefB
AB1467	1465956	1466258	101	+		Conserved hypothetical protein
AB1468	1466335	1467594	420	+	*glyA2*	Serine hydroxymethyltransferase
AB1469	1467624	1468448	275	+	*ada*	O6-methylguanine-DNA methyltransferase
AB1470	1468452	1469162	237	+		Endonuclease III
AB1471	1469148	1469624	159	-		Ribonuclease H-like protein
AB1472	1469664	1469954	97	-		Conserved hypothetical protein
AB1473	1469954	1470157	68	-		Hypothetical protein
AB1474	1470267	1470737	157	-		Pyridoxamine 5'-phosphate oxidase-related, FMN-binding
AB1475	1470917	1472083	389	+	*benE*	Benzoate membrane transport protein
AB1476	1472131	1473300	390	-	*argD2*	N-acetylornithine aminotransferase
AB1477	1473316	1474014	233	-		Conserved hypothetical protein
AB1478	1474098	1474970	291	-	*lipA*	Lipoic acid synthetase
AB1479	1474985	1475686	234	-		Biotin/lipoate A/B protein ligase family protein
AB1480	1475844	1478513	890	+	*aceE*	Pyruvate dehydrogenase E1 component
AB1481	1478527	1480179	551	+	*aceF*	Dihydrolipoamide acetyltransferase
AB1482	1480192	1481622	477	+	*lpdA*	Dihydrolipoamide dehydrogenase
AB1483	1481727	1482389	221	+		Glutamine amidotransferase, class I
AB1484	1482506	1484842	779	-		TonB-dependent receptor protein

AB1485	1485115	1485960	282	-		Aldose 1-epimerase family protein, LacX
AB1486	1485960	1486718	253	-		Beta-lactamase, putative
AB1487	1486772	1488076	435	-	*rhlE*	ATP-dependent RNA helicase RhlE
AB1488	1488347	1489537	397	+		Conserved hypothetical protein
AB1489	1489715	1490692	326	+		DNA (Cytosine-5-)-methyltransferase
AB1490	1490703	1491707	335	+		Conserved hypothetical protein
AB1492	1491864	1492169	102	-		Conserved hypothetical protein, putative transcriptional regulator
AB1493	1492319	1493941	541	+		Conserved hypothetical protein
AB1494	1493979	1494353	125	+		Conserved hypothetical protein (DUF302 domain protein)
AB1495	1494359	1494829	157	+		Conserved hypothetical protein
AB1496	1494861	1497098	746	-		Methyl-accepting chemotaxis protein
AB1497	1497253	1498056	268	+	*rnhA*	Ribonuclease HI
AB1498	1498111	1499076	322	+		HMGL family protein
AB1499	1499110	1499409	100	-		Conserved hypothetical protein
AB1500	1499452	1499859	136	-		Conserved hypothetical protein
AB1501	1499988	1501250	421	-	*dinP*	DNA polymerase IV
AB1502	1501328	1502560	411	-	*moeA1*	Molybdenum cofactor biosynthesis protein A
AB1503	1502573	1503553	327	-		Cysteine desulfurase, NifS homolog
AB1504	1503549	1504379	277	-	*fdhD*	FdhD/NarQ protein required for formate dehydrogenase activity
AB1505	1504379	1505335	319	-	*fdhC*	Putative FdhC protein
AB1506	1505347	1505937	197	-	*fdhB1*	Formate dehydrogenase, iron-sulfur subunit FdhB
AB1507	1505951	1508749	933	-	*fdhA1*	Formate dehydrogenase, large subunit FdhA (Selenocysteine containing)
AB1509	1508778	1508999	74	-		Conserved hypothetical protein
AB1510	1509085	1509693	203	-		Conserved hypothetical protein
AB1511	1509689	1511359	557	-		4Fe-4S ferredoxin, iron-sulfur binding
AB1512	1511506	1512657	384	+	*livJ*	Leucine/isoleucine/valine-binding protein
AB1513	1512657	1514225	523	+		Two-component sensor histidine kinase
AB1514	1514236	1514892	219	+		Two-component response regulator
AB1515	1514888	1516138	417	+		Mn2+ and Fe2+ transporter, NRAMP family
AB1516	1516145	1516423	93	-		Heavy-metal transporting ATPase
AB1517	1516430	1516753	108	-		Heavy-metal transport protein, MerT homolog
AB1518	1516753	1517844	364	-		Transglutaminase family protein
AB1519	1518051	1518992	314	-		Putative FdhC protein
AB1520	1519004	1519594	197	-	*fdhB2*	Formate dehydrogenase, iron-sulfur subunit FdhB
AB1521	1519608	1522403	932	-	*fdhA2*	Formate dehydrogenase, large subunit FdhA (Cysteine containing)
AB1522	1522428	1522649	74	-		Formate dehydrogenase subunit E, putative
AB1523	1523138	1524172	345	+	*selD*	Selenide, water dikinase

AB1524	1524220	1524771	184	-		Hypothetical protein
AB1525	1524949	1525524	192	+		Hypothetical protein
AB1526	1525578	1526204	209	+		Conserved hypothetical protein
AB1527	1526219	1526479	87	+		Conserved hypothetical protein
AB1528	1526484	1526855	124	+		Hypothetical protein
AB1529	1526869	1527918	350	+		Hypothetical protein
AB1530	1527931	1528413	161	+		Phage-related lysozyme
AB1531	1528477	1528848	124	-		Hypothetical protein
AB1532	1528910	1529317	136	-		Sel1-like repeat protein
	1529459	**1529553**		**-**		**tRNA-SeC (anticodon: TCA)**
AB1533	1529610	1530962	451	+	*selA*	L-seryl-tRNA selenium transferase
AB1534	1530965	1532791	609	+	*selB*	Selenocysteine-specific elongation factor
AB1535	1532798	1534309	504	+		Putative DNA helicase
AB1536	1534309	1535244	312	+		Conserved hypothetical protein
AB1537	1535244	1537304	687	+		Hypothetical protein
AB1538	1537354	1538277	308	+		Conserved hypothetical protein
AB1539	1538365	1540533	723	+		Hypothetical protein
AB1540	1540576	1541319	248	+		Conserved hypothetical protein
	1541409	**1541480**		**+**		**tRNA-Gln-2 (anticodon: TTG)**
	1541505	**1541586**		**+**		**tRNA-Tyr-1 (anticodon: GTA)**
	1541607	**1541679**		**+**		**tRNA-Phe-1 (anticodon: GAA)**
	1541707	**1541790**		**+**		**tRNA-Leu-3 (anticodon: TAA)**
AB1541	1541812	1543707	632	-		Two-component sensor histidine kinase
AB1542	1543848	1544354	169	+		Putative FMN reductase
AB1543	1544415	1545788	458	+		PhoH family protein
AB1544	1545860	1547473	538	+		Conserved hypothetical protein
AB1545	1547482	1549326	615	-		EAL/PAS/GGDEF domain protein
AB1546	1549302	1549937	212	+	*pdxH*	Pyridoxamine 5'-phosphate oxidase
AB1547	1549949	1552063	705	-		GGDEF/PAS domain protein
AB1548	1552104	1553465	454	-	*dbpA*	ATP-dependent RNA helicase DbpA
AB1549	1553471	1554001	177	-		Conserved hypothetical integral membrane protein
AB1550	1554096	1554950	285	+		Conserved hypothetical protein
AB1551	1554977	1555558	194	-		Hypothetical protein
AB1552	1555698	1557605	636	-	*htpG*	Heat shock protein 90 HtpG
AB1553	1557824	1560028	735	+	*katG*	Catalase/peroxidase HPI
AB1555	1560142	1562022	627	+	*ciaB*	CiaB protein
AB1557	1562041	1562508	156	-		Ankyrin repeat protein

AB1558	1562533	1565184	884	-	*pqiB*	Paraquat-inducible protein B
AB1559	1565177	1566391		-	*pqiA*	Paraquat-inducible protein A (pseudogene)
AB1561	1566462	1566893	144	+		Protozoan/cyanobacterial globin homolog
AB1562	1566969	1569521	851	+		EAL/GGDEF domain protein
AB1563	1569538	1570017	160	-		Hypothetical protein
AB1564	1570121	1571059	313	+		Putative integral membrane protein (DUF6 domain protein)
AB1565	1571400	1571864	155	-		Conserved hypothetical membrane protein (DUF6)
AB1566	1571993	1572577	195	+		Conserved hypothetical protein
AB1567	1572585	1573655	357	-		Putative DNA alkylation repair enzyme
AB1568	1573667	1574524	286	-		Putative DNA-binding protein
AB1569	1574595	1575956	454	-		Hypothetical protein
AB1570	1575970	1576611	214	-		Transcriptional regulator, ThiJ/PfpI family
AB1572	1576789	1577445	219	+		Conserved hypothetical protein
AB1573	1577731	1580109	793	-		TonB-dependent receptor protein
AB1574	1580277	1580498	74	+	*hicA*	Hif-contiguous protein A
AB1575	1580525	1580866	114	+	*hicB*	Hif-contiguous protein B
AB1576	1580877	1581848	324	-		Sigma factor regulatory protein, FecR/PupR family
AB1577	1581852	1582322	157	-		Sigma factor, ECF family
AB1578	1582459	1583517	353	+	*speB*	Arginase/agmatinase/formiminoglutamate hydrolase, arginase family
AB1579	1583546	1584844	433	-	*leuA2*	2-isopropylmalate synthase
AB1580	1585028	1585810	261	-		Transcriptional regulator, AraC family
AB1581	1585823	1586149	109	-		Transcriptional regulator, PemK family
AB1582	1586146	1586403	86	-		Hypothetical protein
AB1583	1586475	1587425	317	-		Transcriptional regulator, AraC family
AB1584	1587544	1589658	705	+		TonB-dependent receptor protein
AB1585	1589690	1590262	191	-	*sodB*	Superoxide dismutase
AB1586	1590343	1591548	402	-		Conserved hypothetical membrane protein
AB1587	1591623	1592540	306	-	*ppa*	Inorganic pyrophosphatase, manganese-dependent
AB1588	1592663	1593259	199	-		Conserved hypothetical protein (DUF1121 domain protein)
AB1589	1593268	1593804	179	-		Conserved hypothetical protein, putative asparaginase
AB1590	1593758	1595161	468	-	*aspA*	Aspartate ammonia-lyase
AB1591	1595230	1595907	226	-		Two-component response regulator
AB1592	1595913	1597034	374	-		Two-component sensor histidine kinase
AB1593	1597109	1598542	478	-		Sodium:alanine symporter
AB1594	1598678	1599370	231	-	*pfs*	5'-methylthioadenosine\S-adenosylhomocysteine nucleosidase
AB1595	1599366	1600292	309	-	*fabD*	Malonyl coenzyme A-(acyl carrier protein) transacylase
AB1596	1600430	1601014	195	-	*slyD*	Peptidyl-prolyl cis-trans isomerase

AB1597	1601039	1601980	314	-		Conserved hypothetical protein
AB1598	1601985	1602506	174	-		OmpA/MotB precursor
AB1599	1602670	1603959	430	-	*tolB*	Colicin tolerance-like protein (tolB)
AB1600	1603967	1604695	243	-		Conserved hypothetical protein
AB1601	1604704	1605090	129	-	*exbD3*	Biopolymer transport protein ExbD
AB1602	1605098	1605655	186	-	*exbB3*	Biopolymer transport protein ExbB
AB1603	1605665	1606039	125	-	*atpC*	ATP synthase F1 sector, epsilon subunit
AB1605	1606066	1607457	464	-	*atpD*	ATP synthase F1 sector, beta subunit
AB1606	1607480	1608364	295	-	*atpG*	ATP synthase F1 sector, gamma subunit
AB1607	1608378	1609892	505	-	*atpA*	ATP synthase F1 sector, alpha subunit
AB1608	1609917	1610444	176	-	*atpH*	ATP synthase F1 sector, delta subunit
AB1609	1610447	1610956	170	-	*atpF*	ATP synthase F0 sector, subunit B
AB1610	1610973	1611392	140	-	*atpF'*	ATP synthase F0 sector, B' subunit
AB1611	1611514	1612365	284	-	*parB*	Transcriptional regulator involved in chromosome partitioning ParB
AB1612	1612389	1613162	258	-	*parA*	ATPases involved in chromosome partitioning ParA
AB1613	1613162	1613794	211	-	*birA*	Biotin--acetyl-CoA-carboxylase ligase
AB1614	1613891	1614589	233	-		Hypothetical protein
AB1615	1614821	1615711	297	+		Auxin efflux carrier protein
AB1616	1615722	1616639	306	-	*fmt*	10-formyltetrahydrofolate:L-methionyl-tRNA(fMet) N-formyltransferase
AB1617	1616652	1617413	254	-	*proB*	Glutamate 5-kinase
AB1618	1617413	1618501	363	-	*obg*	GTP-binding protein
AB1619	1618634	1618888	85	-	*rpmA*	50S ribosomal protein L27
AB1620	1618916	1619230	105	-	*rplU*	50S ribosomal protein L21
AB1621	1619367	1620998	544	-	*dnaG*	DNA primase
AB1622	1621080	1622126	349	+		Conserved hypothetical protein
AB1623	1622177	1622848	224	+	*rnc*	Ribonuclease III
AB1624	1622855	1623928	358	+	*aroC*	Chorismate synthase
AB1625	1623921	1624670	250	+		Conserved hypothetical protein
AB1626	1624751	1625599	283	-		Peptidase, M48 family
AB1627	1625656	1626339	228	-		Conserved hypothetical protein
AB1628	1626436	1626912	159	+		Phosphoglycerate/bisphosphoglycerate mutase, putative
AB1629	1626934	1627344	137	-		Hypothetical protein
AB1630	1627349	1628686	446	-	*trmE*	tRNA modification GTPase
AB1631	1628692	1629564	291	-		Conserved hypothetical protein
AB1632	1629588	1631186	533	-	*oxaA*	Inner membrane protein, 60 kDa
AB1633	1631182	1631511	110	-		Conserved hypothetical protein (DUF37 domain protein)
AB1633.5	1631511	1631843		-	*rnpA*	Ribonucleoside P protein component RnpA (pseudogene)

AB1634	1631834	1631965	44	-	*rpmH*	50S ribosomal protein L34
AB1635	1632043	1634619	859	-	*clpB*	ATP-dependent Clp protease, ATP-binding subunit
AB1636	1634738	1635313	192	+	*rnhB*	Ribonuclease HII
AB1637	1635321	1635632	104	-		Hypothetical protein (DUF77 domain protein)
AB1638	1635645	1636535	297	-		Conserved hypothetical protein (DUF344 domain protein)
AB1639	1636655	1636993	113	+		Conserved hypothetical protein
AB1640	1636996	1637487	164	-	*msrA*	Peptide methionine sulfoxide reductase
AB1641	1637493	1637849	119	-	*msrB*	Peptide methionine sulfoxide reductase
AB1642	1637864	1638475	204	-		Fumarylacetoacetate (FAA) hydrolase
AB1643	1638538	1638876	113	+		Conserved hypothetical protein (DUF1291 domain protein)
AB1644	1638879	1639532	218	-		Phosphohydrolase (MUTT/NUDIX family protein)
AB1645	1639536	1640801	422	-	*bioA*	7,8-diaminopelargonic acid synthetase
AB1646	1640852	1643446	865	-		Two-component sensor histidine kinase
AB1647	1643565	1645094	510	-	*purH*	Phosphoribosylaminoimidazolecarboxamide formyltransferase / IMP cyclohydrolase
AB1648	1645297	1647507	737	-	*purL*	Phosphoribosylformylglycinamidine synthase II
AB1649	1647575	1648543	323	-		Conserved hypothetical protein
AB1650	1648614	1649801	396	+		Peptidase, M23/M37 family
AB1651	1649849	1650418	190	-	*folE*	GTP cyclohydrolase I
AB1652	1650444	1651394	317	-	*corA*	Magnesium and cobalt transport protein
AB1653	1651413	1652600	396	-	*ctsF*	Campylobacter transformation system protein CtsF
AB1654	1652605	1653603	333	-	*ctsE*	Campylobacter transformation system protein CtsE
AB1655	1653878	1654447	190	-		Hypothetical protein
AB1656	1654462	1655106	215	-		Conserved hypothetical protein
AB1657	1655167	1655817	217	+		Conserved hypothetical protein
AB1658	1655851	1656423	191	-		Hypothetical protein
AB1659	1656511	1657290	260	-		N6 adenine-specific DNA methyltransferase, D12 class
AB1660	1657401	1658345	315	-		Phage tail protein D
AB1661	1658342	1658545	68	-		Hypothetical protein
AB1662	1658545	1658910	122	-		Hypothetical protein
AB1663	1658913	1660814	634	-		Phage tail tape measure protein, TP901 family, putative
AB1664	1660963	1661235	91	-		Hypothetical protein
AB1665	1661252	1661740	163	-		Phage major tail tube protein
AB1666	1661745	1662926	394	-		Phage tail sheath protein
AB1667	1662957	1663199	81	-		Hypothetical protein
AB1668	1663192	1663794	201	-		Tail fiber assembly protein
AB1669	1663810	1664916	369	-		Hypothetical protein
AB1670	1664916	1665551	212	-		Tail protein I, putative

AB1671	1665526	1666698	391	-		Baseplate assembly protein J, putative
AB1672	1666698	1667012	105	-		Hypothetical protein, putative baseplate assembly protein W
AB1673	1667015	1667743	243	-		Baseplate assembly protein V, putative
AB1674	1667743	1668057	105	-		Hypothetical protein
AB1675	1668158	1668382	75	-		Hypothetical protein
AB1676	1668378	1668701	108	-		Hypothetical protein
AB1677	1668877	1669314	146	+		Hypothetical protein
AB1678	1669310	1670107	266	+		Mu-like prophage I protein, putative
AB1679	1670123	1670557	145	+		Hypothetical protein
AB1680	1670570	1671550	327	+		Conserved hypothetical protein
AB1681	1671676	1672074	133	+		Conserved hypothetical protein
AB1682	1672077	1672580	168	+		Conserved hypothetical protein
AB1683	1672570	1674288	573	+		Phage uncharacterized protein
AB1684	1674292	1675680	463	+		Phage uncharacterized protein
AB1685	1675676	1676848	391	+		Mu-like prophage F protein, putative
AB1686	1676951	1677433	161	+		Mu-like prophage G protein, putative
AB1687	1677431	1677703	91	-		Conserved hypothetical protein
AB1688	1677853	1679136	428	+		Hypothetical protein
AB1690	1679284	1680453	390	+		Conserved hypothetical protein
AB1692	1680928	1681830	301	-		DnaB-like helicase-like protein
AB1693	1681826	1682128	101	-		Hypothetical protein
AB1694	1682112	1682321	70	-		Hypothetical protein
AB1696	1682694	1683281	196	-		Hypothetical protein
AB1697	1683271	1683924	218	-		Phage uncharacterized protein
AB1698	1683990	1684238	83	-		Hypothetical protein
AB1700	1684345	1684581	79	-		Hypothetical protein
AB1701	1684554	1685216	221	-		Hypothetical protein
AB1702	1685209	1685904	232	-		Prophage Mu, DNA transposition protein B
AB1703	1685979	1688081	701	-		Prophage Mu, DNA transposition protein A
AB1704	1688086	1688310	75	-		Hypothetical protein
AB1705	1688706	1689380	225	+		Phage repressor protein, putative
AB1706	1689400	1690146	249	+		Hypothetical protein
AB1707	1690557	1691051	165	-		Hypothetical protein
AB1708	1691035	1691910	292	-		Hypothetical protein
AB1709	1691986	1692867	294	-	*era*	GTP-binding protein Era homolog
AB1710	1692946	1693653	236	-		Hypothetical protein
AB1711	1693663	1695165	501	-		Mg chelatase-related protein

AB1712	1695366	1695737	124	+		Hypothetical protein
AB1713	1695748	1696260	171	-	*def*	Polypeptide deformylase
AB1714	1696272	1696853	194	-	*clpP*	ATP-dependent Clp protease, proteolytic subunit
AB1715	1696871	1698169	433	-	*tig*	Trigger factor
AB1716	1698320	1699453	378	-		Conserved hypothetical protein
AB1718	1699457	1700410	318	-		Conserved hypothetical protein
AB1719	1700437	1701579	381	-	*nspC*	Carboxynorspermidine decarboxylase
AB1720	1701586	1702785	400	-		Saccharopine dehydrogenase (L-lysine-forming)
AB1721	1703478	1704635	386	+		Site-specific recombinase, phage integrase family
AB1722	1704660	1705385	242	+		Conserved hypothetical protein
AB1723	1705737	1705985	83	+		Hypothetical protein
AB1724	1705912	1706655	248	+		Conserved hypothetical protein
AB1725	1706658	1707332	225	+		Hypothetical protein
AB1726	1707337	1708869	511	+		Hypothetical protein
AB1727	1708884	1709546	221	+		Hypothetical protein
AB1728	1710033	1711844	604	-		ATPase, putative
AB1729	1711844	1713613	590	-		Hypothetical protein
AB1730	1713606	1714949	448	-	*hsdS*	Type I restriction-modification system specificity determinant
AB1731	1714949	1717261	771	-	*hsdM*	Type I restriction-modification system, M subunit, putative
AB1732	1717694	1718155	154	+		Conserved hypothetical protein, putatve DnaJ domain protein
AB1733	1718375	1718671	99	-		Hypothetical protein
AB1734	1719300	1719665	122	-		Hypothetical protein
AB1735	1719682	1720416	245	-		Hypothetical protein, ErfK/YbiS/YcfS/YnhG family
AB1736	1720416	1720577	54	-		Hypothetical protein
AB1737	1720707	1721855	383	+	*metC1*	Cystathionine gamma-synthase
AB1738	1721860	1723353	498	+	*metC2*	Cystathionine gamma-synthase
AB1739	1723372	1724034	221	-		DNA-binding response regulator
AB1740	1724123	1726126	668	+		Methyl-accepting chemotaxis protein
AB1741	1726149	1726739	197	+		Hypothetical protein
AB1742	1726759	1728951	731	+		Response regulator receiver:Metal-dependent phosphohydrolase, HD subdomain
AB1743	1729094	1731205	704	+		Methyl-accepting chemotaxis protein
AB1744	1731313	1734162	950	+		Two-component sensor histidine kinase
AB1745	1734189	1735061	291	-		Auxin efflux carrier protein
AB1746	1735264	1736130	289	-		Hypothetical protein
AB1747	1736112	1736582	157	-		Hypothetical protein
AB1748	1736585	1737907	441	-		Hypothetical protein
AB1749	1737907	1739304	466	-		Conserved hypothetical protein, putative cytochrome

AB1750	1739389	1740051	221	-		Two-component response regulator
AB1751	1740161	1740712	184	+		Acetyltransferase, GNAT family
AB1752	1740715	1742154	480	-		Putative nickel transporter
AB1753	1742154	1743077	308	-		Putative cation ABC transporter, periplasmic-binding protein
AB1754	1743200	1743571	124	+		Transcriptional regulator, Fur family
AB1755	1743564	1744751	396	+	*nhaA2*	Sodium:hydrogen antiporter
AB1756	1744770	1745903	378	-		Diheme cytochrome c peroxidase
AB1757	1745906	1746808	301	-		Sterol desaturase-related protein
AB1758	1746819	1747760	314	-		Hypothetical protein
AB1759	1747760	1749157	466	-		Conserved hypothetical protein (DUF1111 domain protein)
AB1760	1749126	1750478	451	-		Conserved hypothetical protein
AB1761	1750579	1752654	692	-		Conserved hypothetical protein
AB1763	1752826	1753137	104	+	*atpE*	ATP synthase F0 sector, C subunit
AB1764	1753279	1755399	707	+		Methyl-accepting chemotaxis protein
	1755477	**1755558**		**+**		**tRNA-Leu-2 (anticodon: GAG)**
AB1765	1755664	1756704	347	-		Conserved hypothetical transmembrane protein
AB1766	1756794	1757594	267	-		Ion transport protein
AB1767	1757657	1758037	127	-		Hypothetical protein
AB1768	1758050	1758361	104	-		Hypothetical protein
AB1769	1758647	1758862	72	+		Conserved hypothetical protein
AB1770	1758877	1759629	251	+	*thiD*	Phosphomethylpyrimidine kinase
AB1771	1759707	1760942	412	+	*proA*	Gamma-glutamyl phosphate reductase
AB1772	1760948	1762834	629	+		Glycosyl hydrolase, putative
AB1773	1762868	1763512	215	-		Hypothetical protein
AB1774	1763645	1764955	437	+		Ferredoxin-like protein
AB1775	1764963	1766279	439	-		Two-component sensor histidine kinase
AB1776	1766272	1766949	226	-		Two-component response regulator
AB1777	1766992	1767507	172	+	*ogt*	Putative methylated-DNA-protein-cysteine methyltransferase
AB1778	1767500	1768906	469	+		Phosphohexosemutase
AB1779	1768884	1769606	241	+		Conserved hypothetical protein, putative nitrilase/cyanide hydratase
AB1780	1769686	1770180	165	+		Conserved hypothetical protein
AB1781	1770421	1770756	112	+		Conserved hypothetical protein
AB1782	1770753	1771508	252	+		Conserved hypothetical protein
AB1783	1771524	1772018	165	+	*fldA*	Flavodoxin
AB1784	1772048	1772494	149	-	*fur2*	Ferric uptake regulation protein
AB1785	1772583	1772954	124	-		Hypothetical protein
AB1786	1773032	1773766	245	-	*ate*	Putative arginyl-tRNA--protein transferase

AB1787	1773772	1774509	246	-	*trpA*	Tryptophan synthase, alpha chain
AB1788	1774566	1775960	465	-		Voltage-gated chloride channel family protein
AB1789	1776133	1776939	269	+	*panB*	3-methyl-2-oxobutanoate hydroxymethyltransferase
AB1790	1776946	1777980	345	+	*ruvB*	Holliday junction DNA helicase RuvB
AB1791	1777980	1779023	348	+	*amaA*	Acid membrane antigen A
AB1792	1779026	1779757	244	-		Conserved hypothetical protein
	1779945	**1780064**		**-**	***rrnB***	**5S ribosomal RNA**
	1780226	**1783123**		**-**	***rrnB***	**23S ribosomal RNA**
	1783518	**1783590**		**-**		**tRNA-Ala-2 (anticodon: TGC)**
	1783648	**1783721**		**-**		**tRNA-Ile-2 (anticodon: GAT)**
	1783830	**1785341**		**-**	***rrnB***	**16S ribosomal RNA**
	1785565	**1785636**		**-**		**tRNA-Asn-1 (anticodon: GTT)**
AB1795	1785712	1786635	308	-		Radical SAM domain protein
AB1796	1786716	1787753	346	-	*hemE*	Uroporphyrinogen decarboxylase
AB1797	1787769	1788278	170	-		Putative integral membrane protein
AB1798	1788281	1789315	345	-	*asd*	Aspartate-semialdehyde dehydrogenase
AB1799	1789321	1791900	860	-	*gyrA*	DNA gyrase, subunit A
AB1800	1792042	1792254	71	-		Conserved hypothetical protein
AB1801	1792341	1793519	393	-	*argJ*	Ornithine acetyltransferase / N-acetylglutamate synthase
AB1802	1793524	1794648	375	-		Potassium channel protein, putative
AB1803	1794675	1794860	62	-	*rpmB*	50S ribosomal protein L28
AB1804	1794929	1795792	288	-		Hypothetical protein
AB1805	1796039	1796404	122	+		Putative heptose phosphatase
AB1806	1796416	1797420	335	+	*waaD*	ADP-L-glycero-D-manno-heptose-6-epimerase
AB1807	1797424	1798857	478	+	*waaE*	ADP-heptose synthase
AB1808	1798841	1799407	189	+	*gmhA*	D-sedoheptulose 7-phosphate isomerase
AB1809	1799500	1801395	632	+		Putative sulfatase
AB1810	1801420	1802355	312	-	*waaF*	Lipopolysaccharide heptosyltransferase II
AB1811	1802351	1803409	353	-		Conserved hypothetical protein
AB1812	1803405	1804322	306	-		Putative heptosyltransferase
AB1813	1804325	1805071	249	-		Conserved hypothetical protein
AB1814	1805206	1806849	548	+		Conserved hypothetical membrane protein
AB1815	1806873	1807427	185	-		Conserved hypothetical protein
AB1816	1807439	1808329	297	-		Hypothetical protein
AB1817	1808341	1809795	485	-		Putative acetyltransferase
AB1818	1809804	1810928	375	-		Putative glycosyltransferase
AB1819	1810894	1811640	249	-		Putative glycosyltransferase

AB1820	1811720	1812787	356	+		Conserved hypothetical protein
AB1821	1812813	1813823	337	+		Probable glycosyltransferase
AB1822	1813839	1814426	196	-		Conserved hypothetical protein
AB1823	1814426	1815547	374	-		Glycosyltransferase
AB1824	1815547	1816881	445	-		Putative O-antigen polymerase
AB1825	1816896	1817966	357	-		Aminotransferase, DegT/DnrJ/EryC1/StrS family
AB1826	1817971	1818996	342	-		dTDP-glucose 4,6-dehydratase
AB1827	1818989	1819867	293	-		Glucose-1-phosphate thymidylyltransferase
AB1829	1819870	1821870	667	-		Phosphoglycerol transferase
AB1830	1821887	1822237	117	-	*dgkA*	Diacylglycerol kinase
AB1831	1822242	1823012	257	-		Conserved hypothetical protein
AB1832	1823012	1823923	304	-	*waaM*	Lipid A biosynthesis lauroyl acyltransferase
AB1833	1823919	1824920	334	-	*waaC*	Lipopolysaccharide heptosyltransferase I
AB1834	1824920	1826386	489	-	*gppA*	Guanosine pentaphosphate phosphohydrolase (gppA)
AB1835	1826389	1826640	84	-	*fdxB*	Ferredoxin
AB1836	1826687	1827433	249	-		Inositol monophosphatase family protein
AB1837	1827439	1828812	458	-	*gltD*	Glutamate synthase, small chain
AB1838	1828821	1833257	1479	-	*gltB*	Glutamate synthase, large chain
AB1839	1833455	1834246	264	-		Conserved hypothetical protein
AB1840	1834253	1835035	261	-		Conserved hypothetical protein
AB1841	1835234	1837615	794	-		Methyl-accepting chemotaxis protein
AB1842	1838232	1840184	651	-		Methyl-accepting chemotaxis protein
AB1843	1840200	1840367	56	-		Hypothetical protein
AB1844	1840721	1842154	478	-	*gspD*	General secretion pathway protein D
AB1845	1842187	1842756	190	-		Conserved hypothetical protein
AB1846	1842783	1843478	232	+	*tlyA*	Hemolysin A
AB1847	1843450	1844292	281	+	*ribF*	Riboflavin kinase/FAD synthase RibF
AB1848	1844327	1845031	235	+		Methyltransferase, putative
AB1849	1845047	1845550	168	+	*bcp*	Bacterioferritin comigratory protein, alkyl hydroperoxide reductase/thiol specific antioxidant
AB1850	1845565	1846566	334	+		Hypothetical protein
AB1851	1846569	1847954	462	+	*glcD*	Glycolate oxidase
AB1852	1847965	1848747	261	+	*rbn*	tRNA-processing ribonuclease BN
AB1853	1848750	1849313	188	-		Hypothetical protein
AB1854	1849319	1850584	422	-	*murA*	UDP-N-acetylglucosamine 1-carboxyvinyltransferase
AB1855	1850702	1851583	294	+		Conserved hypothetical membrane protein (DUF6)
AB1856	1851599	1852399	267	+	*kdsA*	3-deoxy-D-manno-octulosonic acid 8-phosphate synthase

AB1857	1852436	1852903	156	+	*ribH*	Riboflavin synthase, beta subunit
AB1858	1852909	1853301	131	+	*nusB*	Transcription termination factor NusB
AB1859	1853306	1854001	232	+	*pyrF*	Orotidine 5'-phosphate decarboxylase
	1854100	**1854187**		**+**		**tRNA-Ser-1 (anticodon: GCT)**
	1854195	**1854268**		**+**		**tRNA-Met-2 (anticodon: CAT)**
AB1860	1854561	1855400	280	+		ABC transporter, ATP-binding protein
AB1861	1855403	1857013	537	+		Hypothetical protein
AB1862	1857030	1857251	74	+	*feoA*	Ferrous iron transport protein A
AB1863	1857251	1859704	818	+	*feoB2*	Ferrous iron transport protein B
AB1864	1859751	1860050	100	+		Conserved hypothetical protein
AB1865	1860077	1860565	163	-		Conserved hypothetical protein
AB1866	1860579	1862159	527	-		Conserved hypothetical protein
AB1867	1862171	1862473	101	-		Conserved hypothetical protein
AB1868	1862605	1864725	707	-		Heavy metal-(Cd/Co/Hg/Pb/Zn)-translocating P-type ATPase
AB1869	1864733	1865071	113	-		Transcriptional regulator, ArsR family
AB1870	1865189	1867312	708	-		TonB-dependent receptor protein
AB1871	1867525	1868076	184	+		Hypothetical protein
AB1872	1868079	1871156	1026	+		AcrB/AcrD/AcrF family protein
AB1873	1871162	1871857	232	+		Conserved hypothetical protein
AB1874	1871860	1873014	385	+		Conserved hypothetical protein
AB1875	1873224	1873439	72	+	*cspA*	Cold-shock protein, DNA-binding
AB1876	1873476	1873613	46	+		Hypothetical protein
AB1877	1873643	1874335	231	-		Two-component response regulator
AB1878	1874396	1876096	567	+		Two-component sensor histidine kinase
	1876219	**1876292**		**+**		**tRNA-Gly-3 (anticodon: TCC)**
	1876329	**1876402**		**+**		**tRNA-Met-3 (anticodon: CAT)**
AB1879	1876559	1878091	511	+		Hypothetical protein
AB1880	1878625	1879416	264	+		Replication protein
AB1881	1879445	1880161	239	-		Hypothetical protein
AB1882	1880425	1881891	489	+		Hypothetical protein
	1882130	**1882203**		**+**		**tRNA-Met-4 (anticodon: CAT)**
	1882217	**1882290**		**+**		**tRNA-Thr-2 (anticodon: TGT)**
	1882311	**1882382**		**+**		**tRNA-Gln-3 (anticodon: TTG)**
AB1883	1882550	1883143	198	+	*ahpC*	Alkyl hydroperoxide reductase/ Thiol specific antioxidant
AB1884	1883158	1883472	105	+	*trxA1*	Thioredoxin
AB1885	1883531	1883815	95	-		Conserved hypothetical protein
AB1886	1883861	1884241	127	-		Hypothetical protein

AB1887	1884280	1888812	1511	-	*rpoC*	DNA-directed RNA polymerase, beta' chain
AB1888	1888805	1892950	1382	-	*rpoB*	DNA-directed RNA polymerase, beta chain
AB1889	1893110	1893478	123	-	*rplL*	50S ribosomal protein L7/L12
AB1890	1893533	1894018	162	-	*rplJ*	50S ribosomal protein L10
AB1891	1894182	1894877	232	-	*rplA*	50S ribosomal protein L1
AB1892	1894956	1895378	141	-	*rplK*	50S ribosomal protein L11
AB1893	1895476	1896000	175	-	*nusG*	Transcription termination factor NusG
AB1894	1896013	1896192	60	-	*secE*	Preprotein translocase, SecE subunit
	1896275	**1896347**		**-**		**tRNA-Trp (anticodon: CCA)**
AB1895	1896390	1896557	56	-	*rpmG*	50S ribosomal protein L33
AB1896	1896573	1897778	402	-	*tufA*	Elongation factor Tu
	1897992	**1898065**		**-**		**tRNA-Gly-4 (anticodon: TCC)**
	1898078	**1898159**		**-**		**tRNA-Tyr-2 (anticodon: GTA)**
	1898220	**1898293**		**-**		**tRNA-Thr-3 (anticodon: TGT)**
	1898308	**1898380**		**-**		**tRNA-Phe-2 (anticodon: GAA)**
AB1897	1898420	1899595	392	-	*murD*	UDP-N-acetylmuramoylalanine--D-glutamate ligase
AB1898	1899608	1900666	353	-	*mraY*	Phospho-N-acetylmuramoyl-pentapeptide transferase
AB1899	1900736	1902208	491	+	*pgm*	Phosphoglycerate mutase, 2,3-bisphosphoglycerate-independent
AB1900	1902211	1902897	229	+		ABC transporter, ATP-binding protein
AB1901	1902904	1904880	659	+	*pbpA*	Penicillin-binding protein 1A
AB1902	1905097	1906521	475	-	*glnA*	Glutamine synthetase
AB1903	1906622	1907410	263	-	*hisJ*	Histidinol-phosphate phosphatase
AB1904	1907410	1907844	145	-	*moaE*	Molybdopterin converting factor, subunit 2
AB1905	1907850	1908068	73	-	*moaD*	Molybdopterin converting factor, subunit 1
AB1906	1908138	1908794	219	+		Conserved hypothetical protein (DUF178 domain protein)
AB1907	1908794	1909561	256	+	*uppP*	Undecaprenyl diphosphatase, putative
AB1908	1909556	1910575	340	-	*murG*	UDP-N-acetylglucosamine--N-acetylmuramyl-(pentapeptide) pyrophosphoryl-undecaprenol N-acetylglucosamine transferase
AB1909	1910575	1911861	429	-	*pbpB*	Penicillin-binding protein
AB1910	1911890	1913749	620	+	*ftsW*	Cell division protein FtsW
AB1911	1913773	1914276	168	+	*ppi*	Peptidyl-prolyl cis-trans isomerase
	1914787	**1914906**		**-**	***rrnC***	**5S ribosomal RNA**
	1915068	**1917965**		**-**	***rrnC***	**23S ribosomal RNA**
	1918360	**1918432**		**-**		**tRNA-Ala-3 (anticodon: TGC)**
	1918490	**1918563**		**-**		**tRNA-Ile-3 (anticodon: GAT)**
	1918672	**1920183**		**-**	***rrnC***	**16S ribosomal RNA**
	1920406	**1920477**		**-**		**tRNA-Asn-2 (anticodon: GTT)**

AB1912	1920624	1921127	168	-		Cytochrome c
AB1913	1921199	1923409	737	-	*clpA*	ATP-dependent Clp protease, ATP-binding subunit
AB1914	1923414	1923710	99	-	*clpS*	ATP-dependent Clp protease adaptor protein ClpS
AB1915	1923788	1924423	212	+	*bioD*	Dethiobiotin synthetase
AB1916	1924446	1924607	54	-		Hypothetical protein
AB1917	1924710	1925840	377	+		CitE domain protein
AB1918	1925860	1928376	839	+		AMP-dependent synthetase and ligase/CitE domain protein
AB1919	1928389	1929444	352	+		MaoC family protein, putative enoyl-CoA hydratase
AB1920	1929480	1930460	327	+		CitE domain protein
AB1921	1930640	1932130	497	+	*fumA*	Fumarate hydratase, class I
AB1922	1932293	1933126	278	+		Conserved hypothetical protein
AB1923	1933143	1936052	970	-		Methyl-accepting chemotaxis protein
AB1924	1936236	1937483	416	-	*arsB*	Arsenical pump membrane protein
AB1925	1937480	1937788	103	-	*arsR*	Transcriptional regulator, ArsR family
AB1926	1937791	1938024	78	-		Putative redox-active disulfide protein
AB1927	1938032	1938994	321	-		Conserved hypothetical membrane protein (DUF318 domain protein)
AB1928	1938998	1939393	132	-	*arsC*	Arsenate reductase
AB1929	1939505	1940110	202	-		Conserved hypothetical protein
AB1930	1940194	1941375	394	-		Putative integral membrane protein
AB1931	1941412	1943520	703	-	*flhA*	Flagellar biosynthesis protein FlhA
AB1932	1943543	1944670	376	-	*flgL*	Flagellar hook-associated protein FlgL
AB1933	1944670	1945974	435	-	*fliI*	Flagellum-specific ATP synthase FliI
AB1934	1945974	1947971	666	-		Tetratricopeptide repeat domain protein
AB1935	1947978	1949024	349	-	*flhB*	Flagellar biosynthetic protein FlhB
AB1936	1949039	1949785	249	-	*fliR*	Flagellar biosynthetic protein FliR
AB1937	1949788	1951722	645	-		Hypothetical membrane protein
AB1938	1951738	1952199	154	-	*flgC*	Flagellar basal body rod protein FlgC
AB1939	1952217	1952534	106	-	*fliE*	Flagellar hook-basal body protein FliE
AB1940	1952550	1952930	127	-		Hypothetical protein
AB1941	1952997	1953818	274	-		ATP-binding protein
AB1942	1953824	1954972	383	-	*flhF*	Flagellar biosynthesis (GTP-binding) protein FlhF
AB1943	1954972	1955364	131	-		Hypothetical protein
AB1944	1955351	1955725	125	-		Hypothetical protein
AB1945	1955744	1956043	100	-		Hypothetical protein
AB1946	1956048	1956914	289	-	*fliY*	Flagellar motor switch protein FliY
AB1947	1956935	1957243	103	-	*flaG*	Polar flagellin
AB1948	1957294	1959381	696	-		TPR repeat protein

AB1949	1959347	1959670	108	-		Hypothetical protein
AB1950	1959727	1961895	723	-	*flgE1*	Flagellar hook protein FlgE
AB1951	1961992	1963740	583	-	*flgE2*	Flagellar hook protein FlgE
AB1952	1963763	1964440	226	-	*flgD*	Flagellar hook assembly protein FlgD
AB1953	1964455	1964739	95	-	*fliN*	Flagellar motor switch protein FliN
AB1954	1964792	1965514	241	-	*fliH*	Flagellar assembly protein FliH
AB1955	1965520	1966527	336	-	*fliG*	Flagellar motor switch protein FliG
AB1956	1966543	1968264	574	-	*fliF*	Flagellar M-ring protein FliF
AB1957	1968285	1968680	132	-	*flgB*	Flagellar basal body rod protein FlgB
AB1958	1968683	1969399	239	-	*flgG1*	Flagellar distal rod protein FlgG
AB1959	1969417	1970352	312	-		Conserved hypothetical protein
AB1960	1970370	1970738	123	-	*cheY2*	Chemotaxis protein CheY
AB1961	1970900	1971685	262	+	*flgG2*	Flagellar distal rod protein FlgG
AB1962	1971708	1972076	123	+		Hypothetical protein
AB1963	1972082	1973017	312	+		Hypothetical protein
AB1964	1973020	1973553	178	-	*rimM*	16S rRNA processing protein
AB1965	1973557	1973793	79	-		Conserved hypothetical protein
AB1966	1973810	1974034	75	-	*rpsP*	30S ribosomal protein S16
AB1967	1974118	1975467	450	-	*ffh*	Signal recognition particle protein
AB1968	1975621	1976373	251	-		Ribosomal large subunit pseudouridine synthase
AB1969	1976367	1977515	383	-	*kdtA*	3-deoxy-D-manno-octulosonic-acid transferase
AB1970	1977521	1978243	241	-		Conserved hypothetical protein (DUF164 domain protein)
AB1971	1978239	1978991	251	-		Conserved hypothetical protein
AB1972	1978997	1979875	293	-	*glyQ*	Glycyl-tRNA synthetase, alpha chain
AB1973	1979875	1980102	76	-		Glutaredoxin-like protein
AB1974	1980105	1980596	164	-	*purE*	Phosphoribosylaminoimidazole carboxylase, catalytic subunit
AB1975	1980640	1981881	414	-		Hypothetical protein
AB1976	1981907	1983193	429	-		Peptidase, U32 family
AB1977	1983307	1985706	800	-		Methyl-accepting chemotaxis protein
AB1978	1985764	1987293	510	-	*recN*	DNA repair protein RecN
AB1979	1987300	1988163	288	-		NAD(+) kinase
AB1980	1988360	1990465	702	-	*fus*	Translational elongation factor G
AB1981	1990478	1990942	155	-	*rpsG*	30S ribosomal protein S7
AB1982	1990962	1991342	127	-	*rpsL*	30S ribosomal protein S12
AB1983	1991564	1992322	253	+		Alpha/beta hydrolase
AB1984	1992399	1993541	381	+	*araJ*	Putative transport protein AraJ
AB1985	1993590	1995650	687	-		TonB-dependent receptor protein

AB1986	1995742	1996707	322	-		Putative sulfonate/nitrate transport system substrate-binding protein
AB1987	1996731	1997963	411	-		Nitrite/nitric oxide reductase-related protein NnrS
AB1988	1997963	1998709	249	-		ABC transporter, ATP-binding protein
AB1989	1998700	1999479	260	-		ABC transporter, permease protein
	1999728	**1999847**		**-**	***rrnD***	**5S ribosomal RNA**
	2000009	**2002906**		**-**	***rrnD***	**23S ribosomal RNA**
	2003301	**2003373**		**-**		**tRNA-Ala-4 (anticodon: TGC)**
	2003431	**2003504**		**-**		**tRNA-Ile-4 (anticodon: GAT)**
	2003613	**2005124**		**-**	***rrnD***	**16S ribosomal RNA**
AB1990	2005444	2006055	204	-		Conserved hypothetical protein
AB1991	2006055	2007260	402	-		Conserved hypothetical membrane protein
AB1992	2007271	2007837	189	-	*trpG*	Anthranilate synthase, component II
AB1993	2007996	2009000	335	+	*fbpA*	Putative iron-uptake ABC transporter, periplasmic iron-binding protein
AB1994	2008994	2010559	522	+	*fbpB*	Putative iron-uptake ABC transporter, permease protein
AB1996	2010559	2011488	310	+		ABC transporter, ATP-binding protein
AB1997	2011510	2012487	326	+		Transcriptional regulator, AraC family
AB1998	2012593	2014674	694	+		Ferrichrome-iron receptor
AB1999	2014689	2014988	100	+		Conserved hypothetical protein
AB2000	2015001	2016572	524	+		Conserved hypothetical protein
AB2001	2016559	2017059	167	+		Conserved hypothetical protein
AB2002	2017090	2018673	528	-	*nirA*	Ferredoxin-nitrite reductase
AB2003	2018884	2019972	363	+		Conserved hypothetical protein
AB2004	2020004	2020228	75	+		Hypothetical protein
AB2005	2020215	2020616	134	+		Conserved hypothetical protein
AB2006	2020695	2022800	702	+		S1 RNA binding domain protein
AB2007	2022816	2023169	118	-		Conserved hypothetical protein
AB2008	2023182	2023562	127	-		Conserved hypothetical protein
AB2009	2023606	2024376	257	-		MutT/nudix family protein
AB2010	2024392	2025267	292	-		Transcriptional regulator, AraC family
AB2011	2025397	2026506	370	+		Aminotransferase, classes I and II
AB2012	2026524	2027063	180	-		Hypothetical protein
AB2013	2027070	2027669	200	-		Conserved hypothetical integral membrane protein, DedA homolog
AB2014	2027774	2028127	118	-	*rplS*	50S ribosomal protein L19
AB2015	2028186	2028872	229	-	*trmD*	tRNA (guanine-N1)-methyltransferase
AB2016	2028979	2029326	116	+		Hypothetical protein
AB2017	2029494	2031758	755	+	*metE*	5-methyltetrahydropteroyltriglutamate--homocysteine methyltransferase
AB2018	2031867	2033069	401	+	*ilvA*	Threonine deaminase

AB2019	2033163	2033846	228	+	*atpB*	ATP synthase F0 sector, A subunit
AB2020	2033911	2034462	184	+		Thiamine monophosphate synthase
AB2021	2034544	2035842	433	-	*porA*	Major outer membrane protein
AB2022	2036137	2036445	103	-	*folB*	Dihydroneopterin aldolase
AB2023	2036445	2037065	207	-		Conserved hypothetical membrane protein (DUF205 domain protein)
AB2024	2037154	2038140	329	+	*nadA*	Quinolinate synthetase A protein
AB2025	2038140	2038958	273	+	*nadC*	Nicotinate-nucleotide pyrophosphorylase
AB2026	2039015	2039998	328	+		Exopolyphosphatase-related protein
AB2027	2039985	2041367	461	+		Peptidase, M23/M37 family
AB2028	2041374	2042276	301	+	*lpxC*	UDP-3-O-acyl-N-acetylglucosamine deacetylase
AB2029	2042286	2042735	150	+		Conserved hypothetical protein
AB2030	2042753	2043631	293	+	*thrB*	Homoserine kinase
AB2031	2043671	2043955	95	+		Hypothetical protein (DUF448 domain protein)
AB2032	2043933	2046602	890	+	*infB*	Translation initiation factor IF-2
AB2033	2046607	2046963	119	+	*rbfA*	Ribosome binding factor A
AB2034	2046963	2047388	142	+		Conserved hypothetical protein (DUF150 domain protein)
AB2035	2047406	2048407	334	+	*ribD*	Riboflavin biosynthesis protein RibD
AB2036	2048425	2048982	186	-	*efp*	Translation elongation factor EF-P
AB2037	2048999	2050582	528	-	*serA*	D-3-phosphoglycerate dehydrogenase
AB2038	2050596	2052245	550	-	*rpsA*	30S ribosomal protein S1
AB2039	2052315	2053151	279	-	*ispH*	4-hydroxy-3-methylbut-2-enyl diphosphate reductase
AB2040	2053233	2054507	425	-	*aroA*	3-phosphoshikimate 1-carboxyvinyltransferase
AB2041	2054524	2056845	774	-	*pheT*	Phenylalanyl-tRNA synthetase, beta subunit
AB2042	2056845	2057834	330	-	*pheS*	Phenylalanyl-tRNA synthetase, alpha subunit
AB2043	2057950	2058291	114	+		HIT family protein
AB2044	2058308	2059240	311	-	*accA*	Acetyl-CoA carboxylase, carboxyltransferase, alpha subunit
AB2045	2059301	2060557	419	-	*fabF*	Beta ketoacyl-(acyl carrier protein) synthase II
AB2046	2060677	2060904	76	-	*acpP*	Acyl carrier protein, putative
AB2047	2061004	2061744	247	-	*fabG*	3-oxoacyl-(acyl carrier protein) reductase
AB2048	2061805	2062566	254	-		Radical SAM domain protein
AB2049	2062562	2063083	174	-		Conserved hypothetical protein
AB2050	2063083	2063766	228	-	*exsB*	Transcriptional regulator, ExsB family
AB2051	2063878	2064279	134	+		Conserved hypothetical protein
AB2052	2064282	2064950	223	+		Conserved hypothetical protein (DUF558 domain protein)
AB2053	2065015	2066040	342	-	*petC*	Ubiquinol cytochrome c oxidoreductase, cytochrome c1 subunit
AB2054	2066040	2067287	416	-	*petB*	Ubiquinol cytochrome c oxidoreductase, cytochrome b subunit
AB2055	2067301	2067798	166	-	*petA*	Ubiquinol cytochrome c oxidoreductase, 2Fe-2S subunit

AB2056	2067959	2069437	493	-	*thrC*	Threonine synthase
AB2057	2069459	2070361	301	-	*argB*	Acetylglutamate kinase
AB2058	2070447	2073176	910	+		ATP-dependent DNA helicase, UvrD/REP family
AB2059	2073216	2073875	220	+		Hypothetical protein
AB2060	2073957	2075051	365	+	*prfB*	Peptide chain release factor 2
AB2061	2075054	2075431	126	-		Conserved hypothetical protein
AB2062	2075436	2077784	783	-		Conserved hypothetical protein
AB2063	2077777	2078331	185	-		Hypothetical protein
AB2064	2078338	2078964	209	-		Conserved hypothetical protein
AB2065	2078968	2079057	30	-		Hypothetical protein
AB2066	2079071	2079310	80	-		Hypothetical protein
AB2067	2079315	2080202	296	-	*ccoP*	Cytochrome c oxidase, cbb3-type, subunit III
AB2068	2080207	2080428	74	-	*ccoQ*	Cytochrome c oxidase, cbb3-type, subunit IV
AB2069	2080442	2081104	221	-	*ccoO*	Cytochrome c oxidase, cbb3-type, subunit II
AB2070	2081122	2082588	489	-	*ccoN*	Cytochrome c oxidase, cbb3-type, subunit I
AB2071	2082753	2083226	158	-	*smpB*	tmRNA-binding protein SmpB
AB2072	2083219	2083980	254	-	*ispE*	4-diphosphocytidyl-2C-methyl-D-erythritol kinase
AB2073	2083985	2084839	285	-	*truB*	tRNA pseudouridine synthase B
AB2074	2084859	2086910	684	-		ATP-dependent DNA helicase, UvrD/PcrA family
AB2075	2087027	2087920	298	+		Transcriptional regulator, LysR family
AB2076	2087943	2088902	320	-		Conserved hypothetical protein, radical SAM domain protein
AB2077	2088905	2090248	448	-	*purF*	Amidophosphoribosyltransferase
AB2078	2090263	2091033	257	-	*dapB*	Dihydrodipicolinate reductase
AB2079	2091050	2091976	309	-	*trxB*	Thioredoxin reductase
AB2080	2092196	2092510	105	-	*trxA2*	Thioredoxin
AB2081	2092690	2095242	851	+	*alaS*	Alanyl-tRNA synthetase
AB2082	2095276	2095989	238	-		Conserved hypothetical protein (DUF541 domain protein)
AB2083	2096022	2097152	377	-		Major facilitator superfamily transporter
AB2084	2097145	2097705	187	-		Hypothetical protein
AB2085	2097788	2098204	139	+		Conserved hypothetical protein
AB2086	2098211	2099431	407	-		Two-component sensor histidine kinase
AB2087	2099431	2100090	220	-		Two-component response regulator
AB2088	2100121	2101545	475	-	*htrA*	Periplasmic serine protease DO; heat shock protein HtrA
AB2089	2101663	2103348	562	-	*ilvD*	Dihydroxyacid dehydratase
	2103541	**2103624**		**+**		**tRNA-Leu-4 (anticodon: TAA)**
	2103637	**2103722**		**+**		**tRNA-Ser-2 (anticodon: TGA)**
	2103791	**2103863**		**+**		**tRNA-Cys (anticodon: GCA)**

AB2090	2104088	2105317	410	+	*int*	Phage integrase
AB2091	2105752	2106120	123	-		Conserved hypothetical protein
AB2092	2106415	2106576	54	-		Hypothetical protein
AB2093	2106625	2106738	38	-		Hypothetical protein
AB2094	2106741	2107421	227	-		Conserved hypothetical protein
AB2095	2107587	2107907	107	-		Hypothetical protein
AB2096	2107888	2108187	100	-		Hypothetical protein
AB2097	2108190	2108399	70	-		Hypothetical protein
AB2098	2109171	2109422	84	+		Hypothetical protein
AB2099	2109460	2110437	326	-		Conserved hypothetical protein
AB2100	2110421	2111089	223	-		ABC transporter, ATP-binding protein
AB2101	2111089	2112264	392	-		Conserved hypothetical protein
AB2103	2112651	2113019	123	+	*dksA*	DnaK suppressor protein DksA
AB2104	2113019	2114014	332	+		tRNA pseudouridine synthase
AB2105	2114054	2115034	327	-		Conserved hypothetical protein
AB2106	2115047	2115622	192	-		Conserved hypothetical protein
AB2107	2115740	2117047	436	+	*ctpA*	Carboxyl-terminal protease family protein
AB2108	2117062	2118012	317	+	*purC*	Phosphoribosylaminoimidazole-succinocarboxamide synthase
AB2109	2118072	2118314	81	+	*purS*	Phosphoribosylformylglycinamidine synthetase
AB2110	2118319	2118987	223	+	*purQ*	Phosphoribosylformylglycinamidine synthase I
AB2111	2119019	2120086	356	+		Conserved hypothetical protein
AB2112	2120076	2120759	228	+	*plsC*	1-acyl-sn-glycerol-3-phosphate acyltransferase PlsC
AB2113	2120734	2121135	134	+	*crcB*	Camphor resistance CrcB protein
AB2114	2121205	2121426	74	+		Twin-arginine translocation protein, TatA/E family
AB2115	2121450	2121683	78	+		Twin-arginine translocation protein, TatA/E family
AB2116	2121696	2123282	529	+	*argS*	Arginyl-tRNA synthetase
AB2117	2123303	2123626	108	-		Conserved hypothetical protein (DUF143 domain protein)
AB2118	2123626	2124171	182	-	*nadD*	Nicotinate (nicotinamide) nucleotide adenylyltransferase
AB2119	2124262	2125254	331	+	*gapA*	Glyceraldehyde 3-phosphate dehydrogenase A
AB2120	2125275	2126474	400	+	*pgk*	Phosphoglycerate kinase
AB2121	2126477	2127184	236	+	*tpiA*	Triosephosphate isomerase
AB2122	2127189	2128007	273	+	*fabI*	Enoyl-(acyl carrier protein) reductase
AB2123	2128106	2129311	402	+	*lysA*	Diaminopimelate decarboxylase
AB2124	2129326	2130402	359	+	*pheA*	Chorismate mutase\prephenate dehydratase
AB2125	2130417	2131517	367	+	*hisC*	Histidinol-phosphate aminotransferase
AB2126	2131532	2133334	601	+	*dxs*	1-deoxy-D-xylulose-5-phosphate synthase
AB2127	2133488	2134504	339	+		Cytochrome c551 peroxidase

AB2128	2134539	2135081	181	-		Septum formation protein Maf homolog
AB2129	2135164	2136111	316	+	*panE*	Ketopantoate reductase
AB2130	2136111	2137397	429	+		Conserved hypothetical protein
AB2131	2137462	2138046	195	-		Probable lipoprotein nlpC homolog precursor
AB2132	2138124	2138774	217	-		Putative transcriptional regulator, Crp/Fnr family
AB2133	2138858	2139202	115	+		Conserved hypothetical protein
AB2134	2139209	2139853	215	-	*ung*	Uracil-DNA glycosylase
AB2135	2139973	2141361	463	-		Aldehyde dehydrogenase family protein
AB2136	2141385	2143028	548	-	*ilvB*	Acetolactate synthase
AB2137	2143265	2143852	196	+	*lemA*	LemA protein
AB2138	2143855	2144472	206	+		Conserved hypothetical protein
AB2139	2144472	2145368	299	+		Conserved hypothetical membrane protein (DUF477)
AB2140	2145340	2146008	223	+	*gph*	Phosphoglycolate phosphatase
AB2141	2146100	2146534	145	+		DNA-binding ferritin-like protein (Dps/NapA)
AB2142	2146586	2148217	544	-		Conserved hypothetical protein
AB2143	2148221	2148595	125	-		Hypothetical protein
AB2144	2148823	2149911	363	+		Major facilitator superfamily transporter
AB2145	2149925	2150278	118	-		Hypothetical protein
AB2146	2150374	2152116	581	+		GGDEF/HAMP domain protein
AB2147	2152186	2153319	378	+		Multidrug efflux protein, HlyD family
AB2148	2153326	2156448	1041	+		Multidrug efflux protein, AcrB/AcrD/AcrF family
AB2149	2156444	2157841	466	+		RND efflux system, outer membrane lipoprotein
AB2150	2157978	2160305	776	-		TonB-dependent receptor protein
AB2151	2160460	2161413	318	-		Sigma factor regulatory protein, FecR/PupR family
AB2152	2161406	2161882	159	-		Sigma factor, ECF family
AB2153	2162027	2163133	369	-		Hypothetical protein
AB2154	2163136	2164362	409	-		HI0933-like protein
AB2155	2164376	2164690	105	-		Conserved hypothetical protein
AB2156	2164898	2166166	423	+	*metY*	O-acetylhomoserine sulfhydrylase
AB2157	2166176	2166586	137	+	*iscR*	Transcriptional regulator, BadM/Rrf2 family
AB2158	2166620	2167549	310	+	*cysK1*	Cysteine synthase
AB2159	2167586	2167813	76	+		Conserved hypothetical protein
AB2160	2167825	2168526	234	+	*cysH*	Adenosine phosphosulfate (APS) reductase
AB2161	2168546	2169454	303	+	*cysD*	ATP sulfurylase, small subunit
AB2162	2169459	2170865	469	+	*cysN*	ATP sulfurylase, large subunit
AB2163	2170878	2171966	363	+	*cysI*	Sulfite reductase, iron-sulfur subunit
AB2164	2171982	2173277	432	+		Hypothetical protein

AB2165	2173366	2174664	433	+		Aminotransferase, NifS-like protein
AB2166	2174714	2180311	1866	-		Hypothetical protein
AB2167	2180418	2181020	201	-		Hypothetical protein
AB2168	2181023	2181766	248	-	*cobS*	Cobalamin (Vitamin B12) synthase
AB2169	2181766	2182257	164	-	*cobP*	Cobinamide kinase / Cobinamide phosphate guanylyltransferase
AB2170	2182288	2182947	220	-		Lipolytic enzyme, GDSL domain
AB2171	2182952	2184016	355	-		Conserved hypothetical protein
AB2172	2184155	2185558	468	+		Sodium:sulfate symporter family protein
AB2173	2185594	2186337	248	-		Conserved hypothetical protein (DUF81 domain protein)
AB2174	2186384	2188138	585	-	*dsbD*	Thiol:disulfide interchange protein DsbD
AB2175	2188141	2189067	309	-	*rimK*	Ribosomal protein S6 modification protein
AB2176	2189082	2189501	140	-		Conserved hypothetical protein (DUF785 domain protein)
AB2177	2189554	2189775	74	-		Conserved hypothetical protein
AB2178	2189840	2191207	456	-		EAL/GGDEF domain protein
AB2179	2191185	2191985	267	-	*psd*	Phosphatidylserine decarboxylase
AB2180	2192091	2192330	80	+		Hypothetical protein
AB2181	2192347	2193432	362	-	*mltA*	Peptidoglycan N-acetylmuramoylhydrolase
AB2182	2193498	2195381	628	-	*dnaK*	DnaK-type molecular chaperone
AB2183	2195573	2196127	185	-	*grpE*	Heat shock protein GrpE
AB2184	2196140	2196928	263	-	*hrcA*	Putative heat shock regulator
AB2185	2197047	2197685	213	-		Conserved hypothetical protein
AB2186	2197692	2198411	240	-	*truA*	tRNA pseudouridine synthase A
AB2187	2198421	2199434	338	-		Conserved hypothetical membrane protein
AB2188	2199437	2200027	197	-		Peptidase, A24 family
AB2189	2199990	2200691	234	-	*uppS*	Undecaprenyl pyrophosphate synthetase
AB2190	2200681	2201901	407	-	*dfp*	DNA /pantothenate metabolism flavoprotein
AB2191	2201907	2203202	432	-	*glmU*	UDP-N-acetylglucosamine pyrophosphorylase
AB2192	2203208	2205142	645	-		Ankyrin repeat protein
AB2193	2205187	2206818	544	-		Probable ATP-dependent RNA helicase
AB2194	2206842	2207966	375	+	*trmA*	tRNA (uracil-5-)-methyltransferase
AB2195	2207983	2208561	193	-		Hypothetical protein
AB2196	2208692	2209660		-		Hypothetical protein (possible pseudogene)
AB2199	2209879	2211753	625	-	*gidA*	Glucose inhibited division protein A
AB2200	2211898	2212506	203	+	*ribE*	Riboflavin synthase, alpha subunit
AB2201	2212506	2213309	268	-	*mreC*	Rod shape-determining protein MreC
AB2202	2213317	2214357	347	-	*mreB*	Rod shape-determining protein MreB
AB2203	2214364	2215584	407	-	*clpX*	ATP-dependent Clp protease, ATP-binding subunit ClpX

AB2204	2215598	2216377	260	-	*lpxA*	UDP-N-acetylglucosamine acyltransferase
AB2205	2216390	2216830	147	-	*fabZ*	3-hydroxymyristoyl-(acyl carrier protein) dehydratase
AB2206	2216931	2217971	347	-	*lpxB*	Lipid A disaccharide synthase
AB2207	2217971	2219041	357	-		Conserved hypothetical protein (DUF208 domain protein)
AB2208	2219226	2219498	91	+		Hypothetical protein
AB2209	2219513	2220712	400	-	*ndh*	NADH dehydrogenase
AB2210	2220918	2221757	280	+	*nfo*	Endonuclease IV
AB2211	2221778	2223163	462	-		Outer membrane efflux lipoprotein
AB2212	2223159	2226323	1055	-		Multidrug efflux protein, Acr family
AB2213	2226323	2227474	384	-		Multidrug efflux protein, HlyD family
AB2214	2227583	2228119	179	+		Transcriptional regulator, TetR family
AB2215	2228197	2229384	396	+		Major facilitator superfamily transporter, Bcr/CflA subfamily
AB2216	2229395	2231017	541	-		Sulfate permease family protein
AB2217	2231079	2231723	215	-		Hypothetical protein
AB2218	2231727	2232347	207	-		Hypothetical protein
AB2219	2232419	2232814	132	+		Hypothetical protein
AB2220	2232814	2234544	577	+		AAA family ATPase
AB2221	2234557	2235345	263	+		Conserved hypothetical protein
AB2222	2235352	2236218	289	+		Conserved hypothetical protein (DUF191 domain protein)
AB2223	2236218	2236997	260	+	*murB*	UDP-N-acetylenolpyruvoylglucosamine reductase
AB2224	2237216	2239483	756	+	*topA*	DNA topoisomerase I
AB2225	2239486	2239995	170	+		Conserved hypothetical protein
AB2226	2239988	2240833	282	+	*bioB*	Biotin synthetase
AB2227	2240862	2241569	236	-		Conserved hypothetical protein
AB2228	2241569	2241811	81	-		Hypothetical protein
AB2229	2241818	2243095	426	-	*eno*	Enolase
AB2230	2243219	2244265	349	-	*recA*	DNA-dependent ATPase, RecA
AB2231	2244369	2244560	64	-		Hypothetical protein
AB2232	2244685	2245674	330	+	*pseB*	UDP GlcNAc dehydratase/reductase PseB, putative
AB2233	2245674	2246801	376	+		DegT/DnrJ/EryC1/StrS aminotransferase
AB2234	2246797	2247492	232	+	*neuA*	Acylneuraminate cytidylyltransferase
AB2235	2247492	2248514	341	+	*neuB*	N-acetylneuraminic acid synthetase
AB2236	2248514	2249533	340	+		Glycosyltransferase
AB2237	2249523	2250383	287	+		Hypothetical protein
AB2238	2250389	2251051	221	+	*flmE*	Flagellin modification protein FlmE
AB2239	2251036	2252154	373	+		ATP-grasp (A) domain protein
AB2240	2252154	2253023	290	+		Conserved hypothetical protein

AB2241	2253047	2253664	206	+		Conserved hypothetical protein
AB2242	2253682	2255709	676	+		Conserved hypothetical protein (DUF115 domain protein)
AB2243	2255762	2256682	307	-	*flaA*	Flagellin
AB2244	2256845	2257765	307	-	*flaB*	Flagellin
AB2245	2258098	2259477	460	+		4Fe-4S ferredoxin, iron-sulfur binding
AB2246	2259594	2261207	538	+	*pyrG*	CTP synthetase
AB2247	2261210	2262775	522	+	*recJ*	Single-stranded DNA-specific exonuclease
AB2248	2262776	2263375	200	-		Hypothetical protein
AB2249	2263383	2264009	209	-		Conserved hypothetical protein
AB2250	2264130	2264666	179	+	*thiJ*	4-methyl-5(beta-hydroxyethyl)-thiazole monophosphate synthesis protein ThiJ
AB2251	2264743	2268303	1187	+	*dnaE*	DNA polymerase III, alpha subunit
AB2252	2268281	2269066	262	+	*surE*	Stationary-phase survival protein SurE
AB2253	2269087	2269353	89	+		Hypothetical protein
AB2254	2269369	2269629	87	-		Conserved hypothetical protein
AB2255	2269635	2270102	156	-	*moaC*	Molybdenum cofactor biosynthesis protein C
AB2256	2270208	2270426	73	+	*rpsU*	30S ribosomal protein S21
	2270931	**2271050**		**-**	***rrnE***	**5S ribosomal RNA**
	2271212	**2274109**		**-**	***rrnE***	**23S ribosomal RNA**
	2274504	**2274576**		**-**		**tRNA-Ala-5 (anticodon: TGC)**
	2274634	**2274707**		**-**		**tRNA-Ile-5 (anticodon: GAT)**
	2274816	**2276327**		**-**	***rrnE***	**16S ribosomal RNA**
AB2257	2276717	2277415	233	+		Conserved hypothetical integral membrane protein
AB2258	2277452	2277856	135	+		Conserved hypothetical protein
AB2259	2277814	2278503	230	-		Conserved hypothetical protein, putative methyltransferase
AB2260	2278590	2278934	115	+	*secG*	Protein-export membrane protein SecG
AB2261	2278998	2279552	185	+	*frr*	Ribosome releasing factor
AB2262	2279552	2280163	204	+	*pyrE*	Orotate phosphoribosyltransferase
AB2263	2280166	2280642	159	+		Conserved hypothetical protein, RDD family
AB2264	2280645	2281724	360	+		Putative major facilitator superfamily transporter
AB2265	2281727	2282689	321	-		CorA-like Mg2+ transporter protein
AB2266	2282703	2283437	245	-		Conserved hypothetical protein (DUF328 domain protein)
AB2267	2283524	2283892	123	-		HHH domain protein, putative competence protein ComEA
AB2268	2283962	2284741	260	-		Conserved hypothetical protein
AB2270	2284914	2286029	372	+		Metallophosphoesterase
AB2271	2286091	2286981	297	-		Hypothetical protein
AB2272	2287009	2289111	701	-		TonB-dependent receptor protein
AB2273	2289208	2290167	320	+		Transcriptional regulator, AraC family

AB2274	2290177	2290587	137	-		Heat shock protein Hsp20
AB2275	2290752	2291189	146	-		Conserved hypothetical protein
AB2276	2291289	2293646	786	-		Methyl-accepting chemotaxis protein
AB2277	2293843	2294982	380	-	*moeB*	Molybdopterin biosynthesis protein
AB2278	2295191	2298556	1122	+		Conserved hypothetical protein, transglutaminase-like domain
AB2279	2298560	2301046	829	+		Conserved hypothetical protein (DUF403/404/407 domain protein)
AB2280	2301052	2301936	295	+		Conserved hypothetical protein, transglutaminase-like domain
AB2281	2301955	2302998	348	-	*cysA*	Sulfate ABC transporter (ATP-binding protein)
AB2282	2303017	2303874	286	-	*cysW*	Sulfate transport system permease protein
AB2283	2303874	2304725	284	-	*cysT*	Sulfate transport system permease protein
AB2284	2304920	2305849	310	-	*cysK2*	Cysteine synthase
AB2285	2305868	2307088	407	-		EAL domain protein
AB2286	2307198	2307464	89	-		Conserved hypothetical protein
AB2287	2307499	2308575	359	-	*sbp*	Sulfate-binding protein precursor
AB2288	2308853	2309308	152	-		Transcriptional regulator, BadM/Rrf2 family
AB2289	2309403	2310332	310	-		Conserved hypothetical protein, putative succinylglutamate desuccinylase/aspartoacylase
AB2290	2310322	2311278	319	-		Conserved hypothetical protein, putative succinylglutamate desuccinylase/aspartoacylase
AB2291	2311278	2311943	222	-		Hypothetical protein
AB2292	2311948	2313309	454	-		Conserved hypothetical protein (DUF404/407 domain protein)
AB2293	2313531	2315342	604	-	*typA*	GTP-binding elongation factor family protein
AB2294	2315612	2316805	398	+		Conserved hypothetical protein, putative transport system permease protein
AB2295	2316819	2317055	79	+		Conserved hypothetical protein, SirA-like protein
AB2296	2317083	2317568	162	-		Conserved hypothetical protein
AB2297	2317581	2317883	101	-		Hypothetical protein
AB2298	2317883	2319466	528	-		Conserved hypothetical protein
AB2299	2319519	2321864	782	-		TonB-dependent receptor protein
AB2300	2321966	2322910	315	-		Sigma factor regulatory protein, FecR/PupR family
AB2301	2322903	2323379	159	-		Sigma factor, ECF family
AB2302	2323547	2326912	1122	+		GGDEF/PAS domain protein
AB2303	2326992	2328614	541	+		Sulfatase
AB2304	2328595	2329308	238	+		PAP2 superfamily protein
AB2305	2329407	2329805	133	+		Cytochrome c-type protein, putative
AB2306	2329818	2330321	168	+		Diheme cytochrome c precursor, putative
AB2307	2330334	2331104	257	+		Cytochrome b, putative
AB2308	2331127	2331447	107	+		Hypothetical protein

AB2309	2331410	2331793	128	+		Hypothetical protein
AB2310	2331789	2332451	221	+		Two-component response regulator
AB2311	2332456	2333643	396	+		Two-component sensor histidine kinase
AB2312	2333644	2334390	249	-		Methyltransferase
AB2313	2334457	2335305	283	-		Transcriptional regulator, AraC family
AB2314	2335320	2336894	525	-		HD_GYP domain response regulator
AB2315	2337020	2337844	275	+	*thyX*	Thymidylate synthase ThyX
AB2316	2337847	2338761	305	+	*glsA*	Glutaminase A
AB2317	2338783	2339397	205	+		Conserved hypothetical membrane protein
AB2318	2339459	2339917	153	+		Conserved hypothetical protein
AB2319	2339935	2340510	192	-	*purN*	Phosphoribosylglycinamide formyltransferase
AB2320	2340561	2341022	154	-	*ruvC*	Crossover junction endodeoxyribonuclease RuvC