

Common Name	Entrez ID	Gene Name	Prediction	Sorted Category
yjeK	948662	Uncharacterized kamA family protein yjeK	['metabolic process']	Down Regulated
dxr	945019	1-deoxy-D-xylulose 5-phosphate reductoisomerase		Temporarily Down Regulated
groL	948665	60 kDa chaperonin		Down Regulated
ribF	949129	Riboflavin biosynthesis protein ribF		Down Regulated
kch	945841	Putative potassium channel protein		Down Regulated
ydhB	945208	Uncharacterized HTH-type transcriptional regulator ydhB	['Transcription', 'RNA related', 'Type of regulation', 'transcription', 'regulation of transcription DNA dependent']	Up Regulated
fepG	945209	Ferric enterobactin transport system permease protein fepG		Ambiguous/Unsorted
ybaA	948863	Uncharacterized protein ybaA	[]	Up Regulated
ydcI	948865	Uncharacterized HTH-type transcriptional regulator ydcI	['Transcription', 'RNA related', 'Type of regulation', 'Genetic unit regulated', 'transcription', 'regulation of transcription DNA dependent']	Up Regulated
btuR	945839	Cob(I)yrinic acid a,c-diamide adenosyltransferase		Down Regulated
hsdS	948867	Type-1 restriction enzyme EcoKI specificity protein		Temporarily Down Regulated
yciK	945838	Uncharacterized oxidoreductase yciK	['DNA repair', 'response to DNA damage stimulus']	Ambiguous/Unsorted
creD	948868	Inner membrane protein creD		Ambiguous/Unsorted
cstA	945213	Carbon starvation protein A		Ambiguous/Unsorted
rbsK	948260	Ribokinase		Down Regulated
ychE	945836	UPF0056 membrane protein yhcE		Temporarily Down Regulated
yjiN	948860	Uncharacterized protein yjiN	['response to antibiotic']	Up Regulated
sugE	948671	Quaternary ammonium compound-resistance protein sugE		Down Regulated
tauD	945021	Alpha-ketoglutarate-dependent taurine dioxygenase		Down Regulated
dinI	945022	DNA-damage-inducible protein I		Temporarily Up Regulated
rcsF	949113	Protein rcsF		Down Regulated
yaeB	949112	UPF0066 protein yaeB		Ambiguous/Unsorted
psd	948673	Phosphatidylserine decarboxylase proenzyme		Ambiguous/Unsorted
poxA	948672	Putative lysyl-tRNA synthetase		Up Regulated
abgR	945831	HTH-type transcriptional regulator abgR		Ambiguous/Unsorted
yqeG	945028	Inner membrane transport protein yqeG		Ambiguous/Unsorted
yhbV	949117	Uncharacterized protein yhbV	['Coenzyme transport and metabolism', 'Energy metabolism carbon', 'Building block biosynthesis', 'ion transport', 'iron ion transport']	Up Regulated
yjeM	948679	Inner membrane transporter yjeM		Up Regulated
yleL	948272	Uncharacterized protein yleL	['Carbohydrate transport and metabolism']	Up Regulated
yjeP	948676	Uncharacterized mscS family protein yjeP	['purine nucleotide biosynthetic process', 'biosynthetic process']	Down Regulated
ilvE	948278	Branched-chain-amino-acid aminotransferase		Down Regulated
ilvM	948279	Acetolactate synthase isozyme 2 small subunit		Down Regulated
tauC	945026	Taurine transport system permease protein tauC		Down Regulated
tauB	945027	Taurine import ATP-binding protein tauB		Down Regulated
ilvD	948277	Dihydroxy-acid dehydratase		Down Regulated
oppA	945830	Periplasmic oligopeptide-binding protein		Down Regulated
thrB	947498	Homoserine kinase		Down Regulated
ylaC	948876	Inner membrane protein ylaC		Up Regulated
ampD	948877	1,6-anhydro-N-acetylmuramyl-L-alanine amidase ampD		Ambiguous/Unsorted
leuS	947497	Leucyl-tRNA synthetase		Temporarily Down Regulated
dkgA	947495	2,5-diketo-D-gluconic acid reductase A		Temporarily Up Regulated
tatE	945228	Sec-independent protein translocase protein tatE		Down Regulated
marR	945825	Multiple antibiotic resistance protein marR		Up Regulated
ybgI	945824	UPF0135 protein ybgI		Ambiguous/Unsorted
dacA	945222	D-alanyl-D-alanine carboxypeptidase dacA		Down Regulated
ahpC	945225	Alkyl hydroperoxide reductase subunit C		Temporarily Up Regulated
yqhC	947491	Uncharacterized HTH-type transcriptional regulator yqhC	['RNA related', 'Type of regulation', 'Genetic unit regulated', 'Protection', 'regulation of transcription DNA dependent']	Up Regulated
dsbG	945224	Thiol:disulfide interchange protein dsbG		Down Regulated
yjiL	948879	Inner membrane transport protein yjiL		Up Regulated
ybeD	945220	UPF0250 protein ybeD		Ambiguous/Unsorted
hsdM	948872	Type I restriction enzyme EcoKI M protein		Down Regulated
fecR	949104	Protein fecR		Ambiguous/Unsorted
tauA	945030	Taurine-binding periplasmic protein		Down Regulated
dsdX	949103	DsdX permease		Up Regulated
fumB	948642	Fumarate hydratase class I, anaerobic		Up Regulated
yail	945033	UPF0178 protein yail		Down Regulated
atpF	948247	ATP synthase subunit b; ATP synthase B chain		Down Regulated
mmnG	948248	tRNA uridine 5-carboxymethylaminomethyl modification enzyme mmnG		Ambiguous/Unsorted
atpG	948243	ATP synthase gamma chain		Down Regulated
atpD	948244	ATP synthase subunit beta		Down Regulated
ptrA	947284	Protease 3		Temporarily Down Regulated
atpC	948245	ATP synthase epsilon chain		Down Regulated
glmU	948246	Bifunctional protein glmU		Down Regulated
recB	947286	Exodeoxyribonuclease V beta chain		Down Regulated

ynfH	945822	Anaerobic dimethyl sulfoxide reductase chain ynfH		Down Regulated
RecD	947287	Exodeoxyribonuclease V alpha chain		Down Regulated
oppB	945823	Oligopeptide transport system permease protein oppB		Down Regulated
fimA	948838	Type-1 fimbrial protein, A chain		Up Regulated
nanM	949106	N-acetylneuraminate epimerase		Up Regulated
glmS	948241	Glucosamine--fructose-6-phosphate aminotransferase [isomerizing]		Down Regulated
argA	947289	Amino-acid acetyltransferase		Down Regulated
atpA	948242	ATP synthase subunit alpha		Down Regulated
Dos	945815	Heme-regulated cyclic di-GMP, cyclic AMP phosphodiesterase,		Temporarily Up Regul
dosP	945815	Heme-regulated cyclic di-GMP, cyclic AMP phosphodiesterase,		Temporarily Up Regul
gpr	947480	Uncharacterized protein yghZ		Temporarily Up Regul
yghZ	947480	Uncharacterized protein yghZ		Temporarily Up Regul
fimH	948847	Protein fimH		Temporarily Down Re
ygiT	945814	Uncharacterized HTH-type transcriptional regulator ygiT	[' Carbon compound utilization', 'metabolic process']	Up Regulated
mqsA	945814	Uncharacterized HTH-type transcriptional regulator ygiT		Up Regulated
gntP	948848	High-affinity gluconate transporter		Up Regulated
flgD	945813	Basal-body rod modification protein flgD		Down Regulated
rfbC	947482	dTDP-4-dehydrorhamnose 3,5-epimerase		Down Regulated
yfdY	948842	Uncharacterized protein yfdY	□	Up Regulated
uidB	947484	ECIAI39_1442; EcHS_A1691; APECO1_699; b1616; ECDH10B_1749; c2008; UTI89_C1804; EcSMS35_1583; EcE24377A_1824; Z2620; ECS88_1662; ECED1_1815; ECUMN_1905; ECH74		Up Regulated
yciU	945819	UPF0263 protein yciU		Down Regulated
rlmH	945239	Ribosomal RNA large subunit methyltransferase H		Temporarily Down Re
mrdB	945238	Rod shape-determining protein rodA		Down Regulated
flhC	947280	Flagellar transcriptional activator flhC		Temporarily Up Regul
ybeB	945237	Uncharacterized protein ybeB	□	Down Regulated
sgcX	948840	Putative sgc region protein sgcX		Up Regulated
fadR	948652	Fatty acid metabolism regulator protein		Down Regulated
psiF	945040	Phosphate starvation-inducible protein psiF		Up Regulated
ygdD	947279	UPF0382 inner membrane protein ygdD		Temporarily Up Regul
yjdC	948650	HTH-type transcriptional regulator yjdC		Temporarily Up Regul
phoR	945044	Sensor protein; Phosphate regulon sensor protein phoR		Temporarily Down Re
aroM	945045	Protein aroM		Temporarily Down Re
asnC	948259	Asparaginyl-tRNA synthetase; Regulatory protein asnC		Down Regulated
fucO	947273	Lactaldehyde reductase		Temporarily Up Regul
csdE	947274	Uncharacterized suffE-like protein ygdK		Ambiguous/Unsorted
yaiE	945048	UPF0345 protein yaiE		Down Regulated
atpH	948254	ATP synthase subunit delta		Down Regulated
aspA	948658	Aspartate ammonia-lyase		Temporarily Up Regul
atpB	948252	ATP synthase subunit a		Down Regulated
fxsA	948657	UPF0716 protein fxsA		Temporarily Up Regul
yjeH	948656	Inner membrane protein yjeH		Down Regulated
atpE	948253	ATP synthase subunit c		Down Regulated
oppC	945810	Oligopeptide transport system permease protein oppC		Down Regulated
rsmG	948250	Ribosomal RNA small subunit methyltransferase G		Down Regulated
groS	948655	10 kDa chaperonin		Down Regulated
uxuR	948849	Uxu operon transcriptional regulator		Ambiguous/Unsorted
thrA	945803	Bifunctional aspartokinase/homoserine dehydrogenase 1		Temporarily Up Regul
oppD	945802	Oligopeptide transport ATP-binding protein oppD		Down Regulated
hoIE	947471	DNA polymerase III subunit theta		Temporarily Down Re
nadD	945248	Nicotinate-nucleotide adenyllyltransferase; Probable nicotinate-nucleotide adenyllyltransferase		Down Regulated
gss	947474	Bifunctional glutathionylspermidine synthetase/amidase		Temporarily Down Re
gsp	947474	Bifunctional glutathionylspermidine synthetase/amidase		Temporarily Down Re
yjiE	948852	Uncharacterized HTH-type transcriptional regulator yjiE	['Transcription', ' RNA related', ' Type of regulation', 'transcription', 'regulation of transcription DNA dependent']	Ambiguous/Unsorted
glcG	947473	Protein glcG		Temporarily Up Regul
yqhA	947479	UPF0114 protein yqhA		Down Regulated
rlpA	945241	Rare lipoprotein A		Down Regulated
mrdA	945240	Penicillin-binding protein 2		Down Regulated
ygdH	947266	UPF0717 protein ygdH		Down Regulated
gudX	947261	Glucarate dehydratase-related protein		Up Regulated
rumB	947260	23S rRNA (uracil-5-)-methyltransferase rumB		Temporarily Down Re
wrbA	947263	Flavoprotein wrbA; Putative flavoprotein wrbA		Temporarily Up Regul
yieE	948226	Uncharacterized protein yieE	['Amino acid transport and metabolism']	Temporarily Down Re
yieF	948225	Uncharacterized protein yieF		Temporarily Down Re
ygbE	947268	Inner membrane protein ygbE		Down Regulated
gadA	948027	Glutamate decarboxylase alpha		Up Regulated

djlC	945253	Uncharacterized J domain-containing protein djlC		Up Regulated
fhuC	945250	Iron(3+)-hydroxamate import ATP-binding protein fhuC		Temporarily Up Regul
serA	945258	D-3-phosphoglycerate dehydrogenase		Down Regulated
adiA	948638	Biodegradative arginine decarboxylase		Up Regulated
dcuS	948639	Sensor protein dcuS		Temporarily Down Re
phoU	948233	Phosphate transport system protein phoU		Down Regulated
melR	948637	Melibiose operon regulatory protein		Up Regulated
glcA	947259	Glycolate permease glcA		Temporarily Up Regul
yhjA	948038	Probable cytochrome c peroxidase		Up Regulated
miaB	945260	(Dimethylallyl)adenosine tRNA methylthiotransferase miaB		Down Regulated
ubif	945261	2-octaprenyl-3-methyl-6-methoxy-1,4-benzoquinol hydroxylase		Up Regulated
yhjE	948032	Inner membrane metabolite transport protein yhjE		Temporarily Up Regul
yhjD	948033	Inner membrane protein yhjD		Temporarily Up Regul
eptA	948629	ECIAI1_4344; E2348C_4442; ECUMN_4646; ECS88_4616; b4114; ECED1_4848; ECIAI39_4538; EC55989_4605; ECDH10B_4306		Ambiguous/Unsorted
yhjC	948035	Uncharacterized HTH-type transcriptional regulator yhjC	['Transcription', 'RNA related', 'Type of regulation', 'transcription', 'regulation of transcription DNA dependent']	Up Regulated
ibpA	948200	Small heat shock protein ibpA		Up Regulated
yecJ	946388	Uncharacterized protein yecJ	[]	Down Regulated
yidX	948202	Uncharacterized protein yidX	['Type of regulation', 'proteolysis', 'signal transduction']	Up Regulated
CYBB	947241	Cytochrome b561		Down Regulated
torZ	946389	Trimethylamine-N-oxide reductase 2		Ambiguous/Unsorted
rumA	947243	23S rRNA (uracil-5-)-methyltransferase rumA		Temporarily Down Re
nudB	946383	Dihydroneopterin triphosphate pyrophosphatase		Down Regulated
recF	948209	DNA replication and repair protein recF		Temporarily Down Re
yecR	946386	Uncharacterized protein yecR	['Inorganic ion transport and metabolism', 'Adaptation to stress', 'iron ion transport']	Down Regulated
cmoB	946387	tRNA (mo5U34)-methyltransferase		Down Regulated
pgm	945271	Phosphoglucomutase		Ambiguous/Unsorted
pitA	948009	Low-affinity inorganic phosphate transporter 1		Down Regulated
seqA	945272	Protein seqA		Temporarily Down Re
tsr	948884	Methyl-accepting chemotaxis protein I		Up Regulated
yhiQ	948005	UPF0341 protein yhiQ		Temporarily Up Regul
rftB	945276	dTDP-glucose 4,6-dehydratase		Down Regulated
erfK	945273	Protein erfK/srfK		Temporarily Up Regul
uspA	948007	Universal stress protein A		Up Regulated
yhiI	948003	Uncharacterized protein yhiI	['Protection']	Up Regulated
yahB	945278	Uncharacterized HTH-type transcriptional regulator yahB	['Transcription', 'RNA related', 'Type of regulation', 'transcription', 'regulation of transcription DNA dependent']	Temporarily Down Re
cusR	945003	Transcriptional regulatory protein cusR		Down Regulated
yael	945002	Phosphodiesterase yael		Down Regulated
opgG	945005	Glucans biosynthesis protein G		Down Regulated
gyrB	948211	DNA gyrase subunit B		Down Regulated
pal	945004	Peptidoglycan-associated lipoprotein		Down Regulated
lacI	945007	Lactose operon repressor		Up Regulated
trmJ	948610	tRNA (cytidine/uridine-2'-O-)-methyltransferase trmJ		Temporarily Down Re
cysI	947231	Sulfite reductase [NADPH] hemoprotein beta-component		Down Regulated
hisQ	947235	Histidine transport system permease protein hisQ		Down Regulated
dnaN	948218	DNA polymerase III subunit beta		Down Regulated
dnaA	948217	Chromosomal replication initiator protein dnaA		Down Regulated
rpmH	948216	50S ribosomal protein L34		Down Regulated
yidC	948214	Inner membrane protein oxaA		Down Regulated
osmY	948895	Osmotically-inducible protein Y		Temporarily Up Regul
asnB	945281	Asparagine synthetase B [glutamine-hydrolyzing]		Down Regulated
fhuF	948891	Ferric iron reductase protein fhuF		Temporarily Up Regul
flhA	946390	Flagellar biosynthesis protein flhA		Down Regulated
ybfF	945288	Esterase ybfF		Ambiguous/Unsorted
nagA	945289	N-acetylglucosamine-6-phosphate deacetylase		Ambiguous/Unsorted
yjiG	948899	5'-nucleotidase yjiG		Temporarily Down Re
mrr	948898	Mrr restriction system protein		Temporarily Up Regul
prfC	948897	Peptide chain release factor 3		Down Regulated
yhjX	948066	Inner membrane protein yhjX		Up Regulated
dppC	948064	Dipeptide transport system permease protein dppC		Down Regulated
valV	946170	c5541; Z2692; UT189_C1856; ECDH10B_1799; b1665; E2348C_tRNA31; ECs5461		Temporarily Down Re
eptB	948068	b3546; ECS88_3965; ECIAI39_4054; EC55989_3997; E2348C_3793; ECED1_4224; ECUMN_4058; ECDH10B_3725; ECIAI1_3705		Temporarily Down Re
yfeA	946864	Uncharacterized protein yfeA	['Signal transduction mechanisms', 'Type of regulation', 'two component signal transduction system phosphorelay', 'regulation of t	Temporarily Down Re
pykF	946179	Pyruvate kinase I; Pyruvate kinase		Temporarily Up Regul
glk	946858	Glucokinase		Up Regulated
lpp	946175	Major outer membrane lipoprotein		Down Regulated

ydhR	946177	Putative monooxygenase ydhR		Down Regulated
ydgA	946172	Protein ydgA		Temporarily Up Regul
ynhG	946174	Uncharacterized protein ynhG	□	Temporarily Up Regul
sufE	946173	Cysteine desulfuration protein sufE		Temporarily Up Regul
gabD	948060	Succinate-semialdehyde dehydrogenase [NADP+]		Temporarily Up Regul
yiaD	948075	Inner membrane lipoprotein yiaD		Temporarily Up Regul
glyQ	948079	Glycyl-tRNA synthetase alpha subunit		Down Regulated
yiaA	948078	Inner membrane protein yiaA		Up Regulated
ptsI	946879	Phosphoenolpyruvate-protein phosphotransferase		Down Regulated
yfeK	946876	Uncharacterized protein yfeK	['Defense mechanisms', 'Primary Active Transporters', 'Protection']	Up Regulated
cysK	946877	Cysteine synthase A; Cysteine synthase		Down Regulated
ydhL	946168	Uncharacterized protein ydhL	['Metabolism of other compounds', 'purine nucleotide biosynthetic process']	Up Regulated
plsX	946165	Fatty acid/phospholipid synthesis protein plsX		Down Regulated
nemA	946164	N-ethylmaleimide reductase		Ambiguous/Unsorted
pdxY	946162	Pyridoxamine kinase		Down Regulated
yiaG	948071	Uncharacterized HTH-type transcriptional regulator yiaG	['RNA related', 'Type of regulation', 'Adaptation to stress', 'transcription', 'regulation of transcription DNA dependent', 'response to']	Temporarily Up Regul
yiaF	948072	Uncharacterized protein yiaF	['Carbohydrate transport and metabolism', 'Carbon compound utilization', 'phosphoenolpyruvate dependent sugar phosphotransfer	Down Regulated
yhjK	948048	c4341; EC55989_3976; ECDH10B_3706; APECO1_2919; ECIA11_3680; b3529; ECIA139_4032; ECED1_4207; ECS88_3943; ECUMN_4036; UTI89_C4061; Z4943; E2348C_3771		Ambiguous/Unsorted
bcsZ	948046	Endoglucanase		Down Regulated
bcsB	948045	Cyclic di-GMP-binding protein		Down Regulated
ybeZ	948044	PhoH-like protein		Temporarily Up Regul
pdxK	946881	Pyridoxine kinase		Up Regulated
kdgK	948041	2-dehydro-3-deoxygluconokinase		Temporarily Up Regul
cysU	946882	Sulfate transport system permease protein cyst		Down Regulated
cysP	946883	Thiosulfate-binding protein		Down Regulated
ptsH	946886	Phosphocarrier protein HPr		Down Regulated
yfeS	946887	Uncharacterized protein yfeS	□	Down Regulated
cysM	946888	Cysteine synthase B; Cysteine synthase		Down Regulated
rsxG	946158	Electron transport complex protein rnfG		Down Regulated
leuE	946157	Leucine efflux protein		Down Regulated
yhjJ	948040	Protein yhjJ		Down Regulated
hdhA	946151	7-alpha-hydroxysteroid dehydrogenase		Temporarily Up Regul
murC	946153	UDP-N-acetylmuramate--L-alanine ligase		Down Regulated
yhjV	948057	Inner membrane transport protein yhjV		Temporarily Down Re
csiR	948055	Uncharacterized HTH-type transcriptional regulator ygaE		Ambiguous/Unsorted
prpE	946891	Propionate--CoA ligase		Up Regulated
cyoC	946897	Cytochrome o ubiquinol oxidase subunit 3		Down Regulated
mntH	946899	Manganese transport protein mntH		Up Regulated
uidA	946149	Beta-glucuronidase		Up Regulated
rsxB	946146	Electron transport complex protein rnfB		Temporarily Down Re
topB	946141	DNA topoisomerase 3		Down Regulated
pntB	946144	NAD(P) transhydrogenase subunit beta		Down Regulated
tqsA	946142	AI-2 transport protein tqsA		Temporarily Down Re
fadL	946820	Long-chain fatty acid transport protein		Temporarily Up Regul
fecE	948819	Fe(3+) dicitrate transport ATP-binding protein fecE		Down Regulated
dnaJ	944753	Chaperone protein dnaJ		Down Regulated
dnaK	944750	Chaperone protein dnaK		Temporarily Up Regul
aroC	946814	Chorismate synthase		Down Regulated
sixA	946815	Phosphohistidine phosphatase sixA		Up Regulated
fecD	946816	Fe(3+) dicitrate transport system permease protein fecD		Down Regulated
insB	944743	Insertion element IS1 2/3 protein insB; Insertion element IS1 2/3/4 protein insA; Insertion element IS1 protein insA; Insertion element IS1 4 protein insB; Insertion element IS1 1/5/6 protein insB		Ambiguous/Unsorted
sspA	944744	Stringent starvation protein A		Down Regulated
nfrA	944741	Bacteriophage N4 adsorption protein A		Ambiguous/Unsorted
efeO	945603	UPF0409 protein ycdO		Temporarily Up Regul
putP	945602	Sodium/proline symporter		Down Regulated
yceA	945601	UPF0176 protein yceA		Down Regulated
ypfG	946828	Uncharacterized protein ypfG	['Transcription', 'RNA related', 'Type of regulation', 'transcription', 'regulation of transcription DNA dependent']	Temporarily Down Re
evgS	946844	Sensor protein evgS; Sensor protein		Temporarily Down Re
BAX	948089	Protein bax		Temporarily Down Re
ydil	946190	Esterase ydil		Down Regulated
malS	948088	Alpha-amylase		Down Regulated
sapB	946191	Peptide transport system permease protein sapB		Temporarily Up Regul
xyIR	948086	Xylose operon regulatory protein		Up Regulated
ygce	946193	Uncharacterized sugar kinase ygce	['Central intermediary metabolism', 'carbohydrate metabolic process']	Temporarily Up Regul
yiaJ	948084	HTH-type transcriptional regulator yiaJ		Ambiguous/Unsorted

ydiH	946194	Uncharacterized protein ydiH	['proteolysis']	Temporarily Down Regulated
trxA	948289	Thioredoxin-1		Temporarily Down Regulated
yafE	946197	Uncharacterized protein yafE	['Amino acid transport and metabolism', 'Building block biosynthesis', 'amino acid biosynthetic process']	Ambiguous/Unsorted
glyS	948080	Glycyl-tRNA synthetase beta subunit		Down Regulated
ilvY	948284	HTH-type transcriptional regulator ilvY		Temporarily Down Regulated
rstA	946199	Transcriptional regulatory protein rstA		Down Regulated
ilvL	948283	IlvGMEDA operon leader peptide		Temporarily Up Regulated
dsdA	946837	D-serine dehydratase; D-serine dehydratase 1		Ambiguous/Unsorted
fecB	946838	Fe(3+) dicitrate-binding periplasmic protein		Temporarily Up Regulated
fecI	946839	Probable RNA polymerase sigma factor fecI; RNA polymerase sigma factor		Up Regulated
yjhP	946851	Uncharacterized protein yjhP	['Replication recombination and repair']	Up Regulated
yfeC	946857	Uncharacterized protein yfeC	[]	Up Regulated
ypeC	946855	Uncharacterized protein ypeC	['Energy production and conversion']	Temporarily Up Regulated
rhlB	948290	ATP-dependent RNA helicase rhlB		Down Regulated
gpp	948291	Guanosine-5'-triphosphate,3'-diphosphate pyrophosphatase		Down Regulated
yjiP	948812	Inner membrane protein yjiP		Ambiguous/Unsorted
rep	948292	ATP-dependent DNA helicase rep		Down Regulated
wzyE	948293	Putative ECA polymerase		Down Regulated
ydhZ	946180	Uncharacterized protein ydhZ	[]	Temporarily Up Regulated
rffH	948299	Glucose-1-phosphate thymidyltransferase; Glucose-1-phosphate thymidyltransferase 2		Down Regulated
sufS	946185	Cysteine desulfurase		Temporarily Up Regulated
ydiK	946183	UPF0118 inner membrane protein ydiK		Ambiguous/Unsorted
insG	948805	Transposase insG for insertion sequence element IS4		Up Regulated
yneE	946188	UPF0187 protein yneE		Down Regulated
wzxE	948294	Protein wzxE		Down Regulated
hyi	946186	Hydroxypyruvate isomerase		Ambiguous/Unsorted
yjhB	948807	Putative metabolite transport protein yjhB		Up Regulated
rffA	948296	Lipopolysaccharide biosynthesis protein rffA		Down Regulated
lpcA	949134	Phosphoheptose isomerase		Ambiguous/Unsorted
acpH	949132	Acyl carrier protein phosphodiesterase		Up Regulated
secD	949133	Protein-export membrane protein secD		Down Regulated
tgt	949130	Queuine tRNA-ribosyltransferase		Down Regulated
malZ	949131	Maltodextrin glucosidase		Down Regulated
puuA	946202	Gamma-glutamylputrescine synthetase		Down Regulated
trpA	946204	Tryptophan synthase alpha chain		Down Regulated
leuD	945642	3-isopropylmalate dehydratase small subunit		Down Regulated
yadD	944781	Uncharacterized protein yadD	['Replication recombination and repair', 'DNA recombination']	Temporarily Up Regulated
ydjM	945644	Inner membrane protein ydjM		Up Regulated
araC	944780	Arabinose operon regulatory protein		Up Regulated
ydiE	946205	Uncharacterized protein ydiE	['Amino acid transport and metabolism', 'Building block biosynthesis', 'metabolic process', 'biosynthetic process', 'aromatic amino acid metabolism']	Up Regulated
flgL	945646	Flagellar hook-associated protein 3		Down Regulated
ydiA	946207	Uncharacterized protein yuaU; Putative phosphotransferase	[]	Ambiguous/Unsorted
ppsR	946207	Uncharacterized protein yuaU; Putative phosphotransferase ydiA		Ambiguous/Unsorted
flgG	945647	Flagellar basal-body rod protein flgG		Down Regulated
baeR	946605	Transcriptional regulatory protein baeR		Up Regulated
ubiG	946607	3-demethylubiquinone-9 3-methyltransferase		Down Regulated
rffE	944789	UDP-N-acetylglucosamine 2-epimerase		Temporarily Down Regulated
ydiB	946200	Quinate/shikimate dehydrogenase		Temporarily Down Regulated
nrdA	946612	Ribonucleoside-diphosphate reductase; Ribonucleoside-diphosphate reductase 1 subunit alpha		Down Regulated
ybiS	945441	Uncharacterized protein ybiS	['phosphoenolpyruvate dependent sugar phosphotransferase system']	Ambiguous/Unsorted
gyrA	946614	DNA gyrase subunit A		Down Regulated
hicB	946001	Uncharacterized HTH-type transcriptional regulator ydcQ		Up Regulated
ydcQ	946001	Uncharacterized HTH-type transcriptional regulator ydcQ	['Coenzyme transport and metabolism']	Up Regulated
fabH	946003	3-oxoacyl-[acyl-carrier-protein] synthase 3		Down Regulated
gltJ	945443	Glutamate/aspartate transport system permease protein gltJ		Down Regulated
ydcR	946004	Uncharacterized HTH-type transcriptional regulator ydcR	[]	Up Regulated
flgF	945639	Flagellar basal-body rod protein flgF		Down Regulated
yceF	945631	Maf-like protein yceF 1; Maf-like protein yceF		Up Regulated
yniC	945632	Phosphatase yniC		Temporarily Down Regulated
tolB	945429	Protein tolB		Down Regulated
ydiU	946219	UPF0061 protein ydiU		Down Regulated
pspD	945635	Phage shock protein D		Up Regulated
folA	944790	Dihydrofolate reductase; Dihydrofolate reductase type 1		Temporarily Up Regulated
flgE	945636	Flagellar hook protein flgE		Down Regulated
yaaH	944792	Inner membrane protein yaaH		Ambiguous/Unsorted

flgN	945634	Flagella synthesis protein flgN		Down Regulated
murE	944791	UDP-N-acetylmuramoyl-L-alanyl-D-glutamate--2,6-diaminopimelate ligase		Down Regulated
aceF	944794	Dihydrodipicolyllysine-residue acetyltransferase component of pyruvate dehydrogenase complex		Down Regulated
setA	944793	Sugar efflux transporter A		Temporarily Down Regulated
leuB	944798	3-isopropylmalate dehydrogenase		Down Regulated
otsB	946406	Trehalose-phosphate phosphatase		Up Regulated
ftsI	944799	Peptidoglycan synthetase ftsI		Down Regulated
yncB	946012	Putative NADP-dependent oxidoreductase yncB		Ambiguous/Unsorted
ycjG	946013	Z2450; ECUMN_1620; ECED1_1533; ECDH10B_1444; b1325; UTI89_C1596; E2348C_1518; ECIAI1_1350; c1797; APECO1_478; ECS88_1467; ECIAI39_1677; EC55989_1489		Temporarily Down Regulated
yccA	946016	Inner membrane protein yccA		Down Regulated
ybiJ	945433	Uncharacterized protein ybiJ		Up Regulated
araB	946017	Ribulokinase		Up Regulated
glnQ	945435	Glutamine transport ATP-binding protein glnQ		Down Regulated
yfcA	946808	UPF0721 transmembrane protein yfcA		Down Regulated
csgC	945623	Putative curli production protein csgC		Down Regulated
yfcl	946804	Uncharacterized protein yfcl	['Cell wall membrane envelope biogenesis', 'amino acid biosynthetic process', 'aromatic amino acid family biosynthetic process']	Down Regulated
ylbG	946803	b0502; ECDH10B_0458		Down Regulated
ribD	945620	Riboflavin biosynthesis protein ribD		Down Regulated
glnP	945621	Glutamine transport system permease protein glnP		Temporarily Down Regulated
dapB	944762	Dihydrodipicolinate reductase		Down Regulated
ileS	944761	Isoleucyl-tRNA synthetase		Down Regulated
hcaD	945427	3-phenylpropionate/cinnamic acid dioxygenase ferredoxin--NAD(+) reductase component		Temporarily Up Regulated
mepA	946812	Penicillin-insensitive murein endopeptidase		Down Regulated
ybiH	945421	Uncharacterized HTH-type transcriptional regulator ybiH	['Defense mechanisms', 'Primary Active Transporters']	Ambiguous/Unsorted
exbB	945420	Biopolymer transport protein exbB		Down Regulated
cyoB	945615	Ubiquinol oxidase subunit 1		Down Regulated
ndk	945611	Nucleoside diphosphate kinase		Temporarily Down Regulated
msyB	945612	Acidic protein msyB		Temporarily Up Regulated
rbbA	947998	Uncharacterized ABC transporter ATP-binding protein yhiH		Temporarily Up Regulated
carB	944775	Carbamoyl-phosphate synthase large chain		Down Regulated
ftsA	944778	Cell division protein ftsA		Down Regulated
nikR	947995	Nickel-responsive regulator		Temporarily Up Regulated
sspB	944774	Stringent starvation protein B		Down Regulated
kefC	944773	Glutathione-regulated potassium-efflux system protein kefC		Ambiguous/Unsorted
rpmD	947797	50S ribosomal protein L30		Down Regulated
secY	947799	Preprotein translocase subunit secY; Preprotein translocase secY subunit		Down Regulated
rplO	947798	50S ribosomal protein L15		Down Regulated
rpsD	947793	30S ribosomal protein S4		Down Regulated
rpsK	947792	30S ribosomal protein S11		Down Regulated
rpsE	947795	30S ribosomal protein S5		Down Regulated
rpoA	947794	DNA-directed RNA polymerase subunit alpha		Down Regulated
rpsM	947791	30S ribosomal protein S13; 30S ribosomal protein		Down Regulated
metC	946240	Cystathionine beta-lyase metC		Down Regulated
ybdG	946243	Uncharacterized protein ybdG		Down Regulated
pspF	945683	Psp operon transcriptional activator		Down Regulated
potD	945682	Spermidine/putrescine-binding periplasmic protein		Down Regulated
fiu	946246	Catecholate siderophore receptor fiu		Temporarily Up Regulated
cobB	945687	NAD-dependent deacetylase		Up Regulated
panD	945686	Aspartate 1-decarboxylase		Down Regulated
nudJ	945689	Phosphatase nudJ		Down Regulated
ybhL	945401	Inner membrane protein ybhL		Temporarily Up Regulated
rplQ	947784	50S ribosomal protein L17		Down Regulated
trkA	947788	Trk system potassium uptake protein trkA		Up Regulated
yhdN	947785	Uncharacterized protein yhdN		Ambiguous/Unsorted
yehQ	946654	ECIAI39_0891; E2348C_2268; APECO1_4427; c2652; ECS88_2265; b2122; Z3295; ECED1_2478; ECUMN_2456; UTI89_C2394; ECDH10B_2277; ECIAI1_2198		Up Regulated
spy	946253	Spheroplast protein Y		Up Regulated
ycfP	945676	UPF0227 protein ycfP		Temporarily Up Regulated
astB	946259	N-succinylarginine dihydrolase		Ambiguous/Unsorted
lptE	946257	LPS-assembly lipoprotein lptE		Down Regulated
lolC	945673	Lipoprotein-releasing system transmembrane protein lolC		Down Regulated
flgB	945678	Flagellar basal-body rod protein flgB		Down Regulated
parE	947501	DNA topoisomerase 4 subunit B		Down Regulated
ybiX	947502	PKHD-type hydroxylase ybiX		Ambiguous/Unsorted
yrdB	947774	Uncharacterized protein yrdB	['Building block biosynthesis', 'purine nucleotide biosynthetic process', 'aromatic amino acid family biosynthetic process']	Temporarily Down Regulated
yrdA	947775	Protein yrdA		Down Regulated

fmt	947779	Methionyl-tRNA formyltransferase		Ambiguous/Unsorted
nlpC	946220	Probable lipoprotein nlpC		Up Regulated
holB	945661	DNA polymerase III subunit delta'		Down Regulated
thrS	946222	Threonyl-tRNA synthetase		Down Regulated
mrp	946627	Protein mrp		Ambiguous/Unsorted
pntA	946628	NAD(P) transhydrogenase subunit alpha		Down Regulated
ycfS	945666	Uncharacterized protein ycfS		Down Regulated
aroH	946229	Phospho-2-dehydro-3-deoxyheptonate aldolase, Trp-sensitive		Down Regulated
infC	946225	Translation initiation factor IF-3		Down Regulated
accC	947761	Biotin carboxylase		Down Regulated
aaeR	947760	HTH-type transcriptional activator aaeR		Up Regulated
yhdV	947767	Uncharacterized protein yhdV	[' Electrochemical potential driven transporters', ' Protection', 'cell cycle', 'cell division']	Up Regulated
acrF	947768	Acriflavine resistance protein F		Up Regulated
yagV	946631	Uncharacterized protein yagV		Up Regulated
yegU	946630	Uncharacterized protein yegU		Down Regulated
yhdY	947764	Inner membrane amino-acid ABC transporter permease protein yhdY		Down Regulated
yceD	945650	Uncharacterized protein yceD		Down Regulated
ydiZ	946232	Uncharacterized protein ydiZ	[' Carbon compound utilization', ' Energy metabolism carbon ', 'translation']	Temporarily Up Regul
yfaA	946618	Uncharacterized protein yfaA	['Replication recombination and repair', ' RNA related', ' Type of regulation']	Ambiguous/Unsorted
rpmF	945657	50S ribosomal protein L32		Down Regulated
ycfH	945656	Uncharacterized deoxyribonuclease ycfH		Temporarily Up Regul
ydjN	946238	Uncharacterized symporter ydjN		Down Regulated
yhcH	947750	Uncharacterized protein yhcH	['Carbohydrate transport and metabolism', 'carbohydrate metabolic process']	Up Regulated
flgK	945648	Flagellar hook-associated protein 1		Down Regulated
fhuE	945649	FhuE receptor		Ambiguous/Unsorted
yegS	946626	Probable lipid kinase yegS; Lipid kinase yegS		Up Regulated
mreD	947756	Rod shape-determining protein mreD		Temporarily Down Re
nanK	947757	N-acetylmannosamine kinase		Temporarily Up Regul
tolA	946625	Protein tolA		Down Regulated
accB	947758	Biotin carboxyl carrier protein of acetyl-CoA carboxylase		Down Regulated
hpt	946624	Hypoxanthine phosphoribosyltransferase		Down Regulated
ccmH	946623	Cytochrome c-type biogenesis protein ccmH		Down Regulated
cyaA	947755	Adenylate cyclase		Temporarily Down Re
nanE	947745	Putative N-acetylmannosamine-6-phosphate 2-epimerase		Up Regulated
aaeA	947748	p-hydroxybenzoic acid efflux pump subunit aaeA		Up Regulated
aaeB	947747	p-hydroxybenzoic acid efflux pump subunit aaeB		Up Regulated
glgS	947533	Glycogen synthesis protein glgS		Up Regulated
hybC	945182	Hydrogenase-2 large chain		Up Regulated
flgI	947534	Flagellar P-ring protein		Down Regulated
yejL	946694	UPF0352 protein yejL		Ambiguous/Unsorted
yqiK	947537	Inner membrane protein yqiK		Up Regulated
rtn	946695	Protein rtn		Temporarily Down Re
nanT	947740	Putative sialic acid transporter; Putative sialic acid transporter 1		Up Regulated
lpxT	946693	Inner membrane protein yeiU		Down Regulated
fepB	947538	Ferrienterobactin-binding periplasmic protein		Ambiguous/Unsorted
yeeN	946493	UPF0082 protein yeeN		Temporarily Down Re
guaA	947334	GMP synthase [glutamine-hydrolyzing]		Down Regulated
rhtC	948317	Threonine efflux protein		Down Regulated
sulA	947335	Cell division inhibitor sulA		Up Regulated
tatB	948319	Sec-independent protein translocase protein tatB homolog; Sec-independent protein translocase protein tatB		Down Regulated
dapE	948313	Succinyl-diaminopimelate desuccinylase		Ambiguous/Unsorted
pldB	948314	Lysophospholipase L2		Temporarily Down Re
shlA	946495	Shikimate transporter		Down Regulated
RhtB	948316	Homoserine/homoserine lactone efflux protein		Down Regulated
yhcG	947739	Uncharacterized protein yhcG	[' Macromolecule degradation']	Down Regulated
glgB	947940	1,4-alpha-glucan-branching enzyme		Down Regulated
metR	948310	HTH-type transcriptional regulator metR		Up Regulated
hemY	948311	Protein hemY		Down Regulated
glgX	947941	Glycogen debranching enzyme		Up Regulated
yeeJ	946498	Uncharacterized protein yeeJ		Up Regulated
ushA	947331	Protein ushA		Down Regulated
yejM	946685	Inner membrane protein yejM		Down Regulated
aroB	947927	3-dehydroquinate synthase		Down Regulated
flgC	946687	Flagellar basal-body rod protein flgC		Down Regulated
nuoM	947731	NADH-quinone oxidoreductase subunit M		Down Regulated

yrbG	947730	Inner membrane protein yrbG		Ambiguous/Unsorted
yejF	946689	Uncharacterized ABC transporter ATP-binding protein yejF		Down Regulated
pgpA	947542	Phosphatidylglycerophosphatase A		Up Regulated
ahpF	947540	Alkyl hydroperoxide reductase subunit F		Down Regulated
kdsD	947734	Arabinose 5-phosphate isomerase		Down Regulated
rtcB	947929	Protein rtcB		Temporarily Up Regul
yggG	945173	Uncharacterized metalloprotease yggG	□	Up Regulated
osmF	946681	Putative osmoprotectant uptake system substrate-binding protein osmF		Temporarily Up Regul
bgIX	946682	Periplasmic beta-glucosidase		Temporarily Down Re
rfaE	947548	Bifunctional protein hldE		Down Regulated
flgM	946684	Negative regulator of flagellin synthesis		Down Regulated
yodA	946480	Metal-binding protein yodA		Up Regulated
zinT	946480	Metal-binding protein yodA		Up Regulated
ygeA	947348	Uncharacterized protein ygeA	□	Up Regulated
hchA	946481	Chaperone protein hchA		Ambiguous/Unsorted
pldA	948307	Phospholipase A1		Down Regulated
yedW	946486	Probable transcriptional regulatory protein yedW		Temporarily Down Re
damX	947930	Protein damX		Down Regulated
rffG	948300	dTDP-glucose 4,6-dehydratase		Down Regulated
glgP	947931	Phosphorylase; Glycogen phosphorylase		Down Regulated
rffM	948301	Probable UDP-N-acetyl-D-mannosaminuronic acid transferase		Down Regulated
yhbJ	947727	UPF0042 protein yhbJ		Down Regulated
glpE	947935	Thiosulfate sulfurtransferase glpE		Temporarily Down Re
glgA	947932	Glycogen synthase		Temporarily Up Regul
gltB	947724	Glutamate synthase [NADPH] large chain		Down Regulated
gltD	947723	Glutamate synthase [NADPH] small chain		Down Regulated
speE	947726	Spermidine synthase		Down Regulated
ampE	946678	Protein ampE		Ambiguous/Unsorted
lptB	947725	Lipopolysaccharide export system ATP-binding protein lptB		Down Regulated
fruK	946676	1-phosphofructokinase		Temporarily Up Regul
secG	947720	Protein-export membrane protein secG		Down Regulated
npr	947914	Phosphocarrier protein NPr		Ambiguous/Unsorted
yeiP	946674	Elongation factor P-like protein		Down Regulated
lptC	947722	Lipopolysaccharide export system protein lptC		Down Regulated
bioH	947916	Carboxylesterase bioH		Down Regulated
fruA	946672	PTS system fructose-specific EIIBC component		Temporarily Up Regul
aes	947514	Acetyl esterase		Up Regulated
araA	947511	L-arabinose isomerase		Up Regulated
lplT	947317	Lysophospholipid transporter lplT		Temporarily Up Regul
kdul	947319	4-deoxy-L-threo-5-hexosulose-uronate ketol-isomerase		Down Regulated
yafC	947507	Uncharacterized HTH-type transcriptional regulator yafC	['Transcription', 'RNA related', 'Type of regulation', 'transcription', 'regulation of transcription DNA dependent']	Up Regulated
rsxE	947509	Electron transport complex protein rnfE		Down Regulated
galR	947314	HTH-type transcriptional regulator galR		Temporarily Down Re
malP	947922	Phosphorylase; Maltodextrin phosphorylase		Down Regulated
malQ	947923	4-alpha-glucanotransferase		Down Regulated
gntT	947924	High-affinity gluconate transporter		Down Regulated
kdsC	947717	3-deoxy-D-manno-octulosonate 8-phosphate phosphatase		Ambiguous/Unsorted
hpf	947718	Probable sigma(54) modulation protein		Down Regulated
pspB	945893	Phage shock protein B		Up Regulated
speD	947719	S-adenosylmethionine decarboxylase proenzyme		Down Regulated
lptA	947920	Lipopolysaccharide export system protein lptA		Down Regulated
speB	947715	Agmatinase		Down Regulated
yeiH	946668	UPF0324 inner membrane protein yeiH; Probable endonuclease 4		Up Regulated
ybjQ	945493	UPF0145 protein ybjQ		Up Regulated
rpoN	947714	RNA polymerase sigma-54 factor		Down Regulated
nfo	946669	Endonuclease 4; Probable endonuclease 4		Down Regulated
yrbD	947712	Uncharacterized protein yrbD	['Amino acid transport and metabolism']	Down Regulated
miaD	947712	Uncharacterized protein yrbD		Down Regulated
ybjS	945495	Uncharacterized protein ybjS	□	Ambiguous/Unsorted
aat	945490	Leucyl/phenylalanyl-tRNA--protein transferase		Down Regulated
nudE	947906	ADP compounds hydrolase nudE		Down Regulated
miaC	947710	Protein yrbC		Down Regulated
yrbC	947710	Protein yrbC		Down Regulated
yohD	946661	Inner membrane protein yohD		Ambiguous/Unsorted
thrC	945198	Threonine synthase		Down Regulated



pbpG	946662	D-alanyl-D-alanine endopeptidase		Ambiguous/Unsorted
ybjD	945498	Uncharacterized protein ybjD	['SOS response']	Temporarily Up Regul
entD	945194	4'-phosphopantetheinyl transferase entD		Temporarily Up Regul
rpmA	945190	50S ribosomal protein L27		Down Regulated
cusA	945191	Cation efflux system protein cusA		Down Regulated
phoP	945697	Transcriptional regulatory protein phoP		Ambiguous/Unsorted
viaC	946460	Uncharacterized N-acetyltransferase viaC	['amino acid biosynthetic process']	Temporarily Down Re
nudF	947519	ADP-ribose pyrophosphatase		Down Regulated
hsiR	947912	Heat shock protein 15		Ambiguous/Unsorted
potC	945691	Spermidine/putrescine transport system permease protein potC		Down Regulated
ymdC	947321	Uncharacterized protein ymdC	[]	Down Regulated
ompR	947913	Transcriptional regulatory protein ompR		Temporarily Up Regul
hflD	945693	ECIAI1_1170; ECS88_1147; ECDH10B_1204; b1132; ECIAI39_2005; ECED1_1276; E2348C_1273; ECUMN_1376; EC55989_1245		Temporarily Down Re
dusB	947707	tRNA-dihydrouridine synthase B		Down Regulated
prmA	947708	Ribosomal protein L11 methyltransferase		Down Regulated
artP	945489	Arginine transport ATP-binding protein artP		Ambiguous/Unsorted
ygiD	947578	Probable O-sialoglycoprotein endopeptidase		Ambiguous/Unsorted
murJ	945487	Virulence factor mviN homolog		Down Regulated
potF	945480	Putrescine-binding periplasmic protein		Temporarily Up Regul
ybjC	945481	Uncharacterized protein ybjC	['Energy production and conversion', 'Translation ribosomal structure and biogenesis', 'Energy metabolism carbon ', 'Building blo	Ambiguous/Unsorted
dnaG	947570	DNA primase		Up Regulated
gmr	945868	Protein gmr		Down Regulated
rimK	945484	Ribosomal protein S6 modification protein		Down Regulated
holA	947573	DNA polymerase III subunit delta		Down Regulated
potI	945485	Putrescine transport system permease protein potI		Temporarily Up Regul
csrD	947702	Uncharacterized protein yhdA		Temporarily Down Re
murA	947703	UDP-N-acetylglucosamine 1-carboxyvinyltransferase		Down Regulated
btuF	947574	Vitamin B12-binding protein		Down Regulated
srlA	947575	Glucitol/sorbitol permease IIC component		Temporarily Up Regul
yhhQ	947984	Inner membrane protein yhhQ		Ambiguous/Unsorted
ymjA	945874	Uncharacterized protein ymjA	['Amino acid transport and metabolism', ' Electrochemical potential driven transporters']	Ambiguous/Unsorted
ribE	946453	6,7-dimethyl-8-ribityllumazine synthase		Down Regulated
yhhS	947982	UPF0226 protein yhhS		Temporarily Down Re
potG	945476	Putrescine transport ATP-binding protein potG		Temporarily Up Regul
tyrR	945879	Transcriptional regulatory protein tyrR		Up Regulated
ftsX	947969	Cell division protein ftsX		Down Regulated
ybjI	945470	Phosphatase ybjI		Up Regulated
ybjJ	945471	Inner membrane protein ybjJ		Temporarily Down Re
ihfA	945472	Integration host factor subunit alpha		Down Regulated
ybjK	945473	Uncharacterized HTH-type transcriptional regulator ybjK	['translation', 'ion transport']	Up Regulated
puuD	945882	Gamma-glutamyl-gamma-aminobutyrate hydrolase		Down Regulated
yhhN	947973	Uncharacterized membrane protein yhhN	[' Energy metabolism carbon ']	Ambiguous/Unsorted
ybaV	945884	Uncharacterized protein ybaV	[]	Up Regulated
pspA	945887	Phage shock protein A		Up Regulated
puuR	945886	HTH-type transcriptional regulator puuR		Ambiguous/Unsorted
ygdR	947304	Uncharacterized lipoprotein ygdR	['Amino acid transport and metabolism', ' Building block biosynthesis', 'amino acid metabolic process']	Temporarily Up Regul
hemD	948587	Uroporphyrinogen-III synthase		Down Regulated
livJ	947971	Leu/Ile/Val-binding protein		Down Regulated
rpoH	947970	RNA polymerase sigma-32 factor; RNA polymerase sigma factor		Up Regulated
ascG	947305	HTH-type transcriptional regulator ascG		Temporarily Down Re
ygiF	947554	Uncharacterized protein ygiF	['Amino acid transport and metabolism']	Temporarily Down Re
ylil	945467	Soluble aldose sugar dehydrogenase ylil		Up Regulated
ygiM	947555	Uncharacterized protein ygiM		Down Regulated
rimO	945465	Ribosomal protein S12 methylthiotransferase rimO		Down Regulated
ylif	945463	Uncharacterized membrane protein ylif	['Signal transduction mechanisms', ' Type of regulation', 'two component signal transduction system phosphorelay ', 'transcription',	Up Regulated
bacA	947551	Undecaprenyl-diphosphatase		Down Regulated
gsiC	945460	Glutathione transport system permease protein gsiC		Ambiguous/Unsorted
gsiD	945461	Glutathione transport system permease protein gsiD		Down Regulated
ribC	945848	Riboflavin synthase alpha chain		Ambiguous/Unsorted
yrbA	947958	Uncharacterized protein yrbA	['Amino acid transport and metabolism', ' Building block biosynthesis', 'amino acid biosynthetic process']	Down Regulated
trpE	945846	Anthranilate synthase component 1		Down Regulated
livM	947966	High-affinity branched-chain amino acid transport system permease protein livM		Temporarily Up Regul
ampG	946438	Protein ampG		Down Regulated
yjcE	948577	Uncharacterized Na(+)/H(+) exchanger yjcE	['rRNA processing']	Down Regulated
livH	947965	High-affinity branched-chain amino acid transport system permease protein livH		Temporarily Up Regul

ydgD	946436	Uncharacterized serine protease ydgD	['response to stress']	Up Regulated
livG	947967	High-affinity branched-chain amino acid transport ATP-binding protein livG		Temporarily Up Regul
livF	947961	High-affinity branched-chain amino acid transport ATP-binding protein livF		Down Regulated
yhhK	947963	Uncharacterized protein yhhK	[' Carbon compound utilization', ' Metabolism of other compounds']	Down Regulated
ybeY	946430	Putative metalloprotease ybeY		Temporarily Up Regul
ghra	946431	Glyoxylate/hydroxypyruvate reductase A		Down Regulated
yjcH	948574	Inner membrane protein yjcH		Ambiguous/Unsorted
gsiA	945457	Glutathione import ATP-binding protein gsiA		Down Regulated
gsiB	945459	Glutathione-binding protein gsiB		Down Regulated
rpoD	947567	RNA polymerase sigma factor rpoD; RNA polymerase sigma factor		Temporarily Down Re
moeA	945454	Molybdopterin biosynthesis protein moeA		Down Regulated
dacC	945455	D-alanyl-D-alanine carboxypeptidase dacC		Temporarily Up Regul
iaaA	945456	Isoaspartyl peptidase		Down Regulated
folC	945451	Bifunctional protein folC		Down Regulated
moeB	945452	Molybdopterin biosynthesis protein moeB		Ambiguous/Unsorted
mug	947560	G/U mismatch-specific DNA glycosylase		Ambiguous/Unsorted
ggT	947947	Gamma-glutamyltranspeptidase		Up Regulated
yciW	945859	Uncharacterized protein yciW	['Lipid transport and metabolism']	Down Regulated
proB	946425	Glutamate 5-kinase		Ambiguous/Unsorted
yjcB	948569	Uncharacterized protein yjcB	[]	Down Regulated
rmb	945864	Exoribonuclease 2		Down Regulated
soxR	948566	Redox-sensitive transcriptional activator soxR		Up Regulated
fecA	946427	Fe(3+) dicitrate transport protein fecA		Down Regulated
soxS	948567	Regulatory protein soxS		Temporarily Up Regul
yrbB	947954	Uncharacterized protein yrbB	['Cell wall membrane envelope biogenesis', ' Macromolecules cellular constituent biosynthesis', 'cell cycle', 'cell division']	Down Regulated
miaB	947954	Uncharacterized protein yrbB		Down Regulated
ugpC	947953	sn-glycerol-3-phosphate import ATP-binding protein ugpC		Temporarily Up Regul
ydfI	945861	Uncharacterized oxidoreductase ydfI	[' Carbon compound utilization']	Temporarily Down Re
yciN	945860	Protein yciN		Temporarily Up Regul
pgpB	945863	Phosphatidylglycerophosphatase B		Down Regulated
topA	945862	DNA topoisomerase 1		Down Regulated
uvrY	946424	Response regulator uvrY		Ambiguous/Unsorted
yjbR	948560	Uncharacterized protein yjbR	['Amino acid transport and metabolism', ' Central intermediary metabolism', 'amino acid biosynthetic process', 'biosynthetic process']	Temporarily Down Re
alr	948564	Alanine racemase, biosynthetic; Alanine racemase		Down Regulated
yjcD	948565	Putative permease yjcD		Temporarily Up Regul
dapF	948364	Diaminopimelate epimerase		Down Regulated
ydgC	945156	Inner membrane protein ydgC		Temporarily Down Re
ydgJ	947164	Uncharacterized oxidoreductase ydgJ	[]	Temporarily Down Re
glnL	948360	Nitrogen regulation protein NR(II); Sensor protein		Down Regulated
glnG	948361	Nitrogen regulation protein NR(I)		Down Regulated
hemN	948362	Oxygen-independent coproporphyrinogen-III oxidase		Down Regulated
feaR	945941	Transcriptional activator feaR		Ambiguous/Unsorted
emrB	947167	Multidrug resistance protein B		Ambiguous/Unsorted
yihI	948363	UPF0241 protein yihI		Up Regulated
luxS	947168	S-ribosylhomocysteine lyase		Down Regulated
iclR	948524	Acetate operon repressor		Down Regulated
yihL	948368	Uncharacterized HTH-type transcriptional regulator yihL	['Amino acid transport and metabolism', ' Carbon compound utilization', ' Central intermediary metabolism', ' Primary Active Transpoc']	Down Regulated
rfbA	945154	Glucose-1-phosphate thymidyltransferase; Glucose-1-phosphate thymidyltransferase 1		Down Regulated
ubiE	948926	Ubiquinone/menaquinone biosynthesis methyltransferase ubiE		Down Regulated
typA	948369	GTP-binding protein typA/BipA; GTP-binding protein typA/bipA		Down Regulated
prfB	947369	Peptide chain release factor 2		Down Regulated
yccJ	948930	Uncharacterized protein yccJ	[' Macromolecules cellular constituent biosynthesis']	Temporarily Up Regul
malY	945937	Protein malY		Temporarily Up Regul
ybgS	945356	Uncharacterized protein ybgS	['Inorganic ion transport and metabolism', ' Electrochemical potential driven transporters', 'ion transport']	Temporarily Up Regul
Cyca	948725	D-serine/D-alanine/glycine transporter		Down Regulated
flkB	948726	FKBP-type 22 kDa peptidyl-prolyl cis-trans isomerase		Down Regulated
ybiO	945935	Uncharacterized mscS family protein ybiO	[]	Temporarily Up Regul
ytfB	948727	Uncharacterized protein ytfB	['Replication recombination and repair', 'DNA recombination', 'DNA integration']	Ambiguous/Unsorted
galE	945354	UDP-glucose 4-epimerase		Ambiguous/Unsorted
rpsR	948721	30S ribosomal protein S18		Down Regulated
priB	948722	Primosomal replication protein n		Down Regulated
fdx	947160	2Fe-2S ferredoxin		Temporarily Down Re
mngB	945359	Alpha-mannosidase mngB		Up Regulated
rpsF	948723	30S ribosomal protein S6		Down Regulated
ygfA	945167	Uncharacterized protein ygfA	['cell cycle', 'cell division']	Up Regulated

dtd	948378	D-tyrosyl-tRNA(Tyr) deacylase		Down Regulated
dbpA	947153	ATP-independent RNA helicase dbpA		Down Regulated
ycfL	948539	Uncharacterized protein ycfL	['Nucleotide transport and metabolism', 'Cell wall membrane envelope biogenesis', ' Building block biosynthesis']	Down Regulated
yfgI	945168	Uncharacterized protein yfgI	['Lipid transport and metabolism', ' Building block biosynthesis']	Temporarily Up Regul
malE	948538	Maltose-binding periplasmic protein		Temporarily Up Regul
malK	948537	Maltose/maltodextrin import ATP-binding protein malK		Down Regulated
ygaC	947156	Uncharacterized protein ygaC	□	Up Regulated
cpdB	948729	ECs5191; ECP_4467; ECSE_4519; EcSMS35_4692; ECUMN_4750; Z5824; EcolC_3793; ECS88_4807; E2348C_4544; EC55989_4773; ECDH10B_4408; ECED1_5072; ECH74115_5730; E		Temporarily Down Re
trkG	945932	Trk system potassium uptake protein trkG		Up Regulated
ascF	947154	PTS system arbutin-, cellobiose-, and salicin-specific EIIBC component		Up Regulated
feaB	945933	Phenylacetaldehyde dehydrogenase		Up Regulated
malF	948532	Maltose transport system permease protein malF		Down Regulated
lysC	948531	Aspartokinase; Lysine-sensitive aspartokinase 3		Down Regulated
pqiA	944999	Paraquat-inducible protein A		Ambiguous/Unsorted
malG	948530	Maltose transport system permease protein malG		Temporarily Up Regul
yjC	948918	Probable phosphoglycerate mutase gpmB		Temporarily Down Re
macB	945164	Macrolide export ATP-binding/permease protein macB		Temporarily Down Re
ybcL	945165	UPF0098 protein ybcL		Up Regulated
yigP	948915	Uncharacterized protein yigP	['protein secretion']	Down Regulated
yjTD	948924	Uncharacterized tRNA/rRNA methyltransferase lasT		Ambiguous/Unsorted
ytfH	948730	Uncharacterized HTH-type transcriptional regulator ytfH	□	Up Regulated
yqeA	947358	Carbamate kinase-like protein yqeA		Temporarily Up Regul
mocA	947356	Uncharacterized protein ygfJ		Temporarily Up Regul
ygfJ	947356	Uncharacterized protein ygfJ	['electron transport']	Temporarily Up Regul
glnA	948370	Glutamine synthetase		Down Regulated
ytfJ	948737	Uncharacterized protein ytfJ	['Energy production and conversion', 'Secondary metabolites biosynthesis transport and catabolism']	Up Regulated
ytfL	948735	UPF0053 inner membrane protein ytfL		Temporarily Down Re
modF	945368	Putative molybdenum transport ATP-binding protein modF		Down Regulated
yaiZ	947355	Uncharacterized protein yaiZ	□	Ambiguous/Unsorted
gltK	947354	Glutamate/aspartate transport system permease protein gltK		Down Regulated
qorB	948731	Uncharacterized oxidoreductase ytfG		Up Regulated
ygeR	947352	Uncharacterized lipoprotein ygeR		Ambiguous/Unsorted
ygbA	947187	Uncharacterized protein ygbA	['Energy production and conversion', ' Primary Active Transporters']	Up Regulated
msrB	947188	Peptide methionine sulfoxide reductase msrB		Ambiguous/Unsorted
fdol	948383	Formate dehydrogenase, cytochrome b556(fdo) subunit		Down Regulated
malM	948547	Maltose operon periplasmic protein		Temporarily Up Regul
allS	945139	HTH-type transcriptional activator allS		Up Regulated
ydjA	945964	Putative NAD(P)H nitroreductase ydjA		Down Regulated
yddB	945961	Uncharacterized protein yddB	['Cell wall membrane envelope biogenesis', 'translation', 'ion transport']	Temporarily Up Regul
hinT	948549	HIT-like protein hinT		Down Regulated
ybdJ	947183	Uncharacterized protein ybdJ	[' Protection', 'ion transport', 'iron ion transport']	Up Regulated
nuoN	945136	NADH-quinone oxidoreductase subunit N		Down Regulated
MltB	947184	Membrane-bound lytic murein transglycosylase B		Temporarily Down Re
lamB	948548	Maltoporin		Down Regulated
frvX	948388	Putative frv operon protein frvX		Ambiguous/Unsorted
yfiL	947106	Uncharacterized protein yfiL	['Replication recombination and repair', 'DNA recombination']	Temporarily Up Regul
norR	947186	Anaerobic nitric oxide reductase transcription regulator norR		Up Regulated
tus	945135	DNA replication terminus site-binding protein		Up Regulated
recN	947105	DNA repair protein recN		Ambiguous/Unsorted
pmrD	945130	Signal transduction protein pmrD		Ambiguous/Unsorted
ffh	947102	Signal recognition particle protein		Temporarily Down Re
rimM	947101	Ribosome maturation factor rimM		Down Regulated
dgkA	948543	Diacylglycerol kinase		Ambiguous/Unsorted
mtn	948542	5'-methylthioadenosine/S-adenosylhomocysteine nucleosidase		Down Regulated
ylaB	948951	Uncharacterized protein ylaB	['Signal transduction mechanisms', ' Type of regulation', 'two component signal transduction system phosphorelay ', 'transcription',	Up Regulated
yibA	948108	Protein yibA		Up Regulated
visC	947389	Protein visC		Down Regulated
efeU	948956	ECUMN_1201; ECIAI39_2139; ECS88_1033; ECDH10B_1089; EC55989_1127; b4490; ECED1_1172; ECIAI1_1062; E2348C_1067		Up Regulated
hypE	947182	Hydrogenase isoenzymes formation protein hypE		Temporarily Up Regul
ubiH	947388	2-octaprenyl-6-methoxyphenol hydroxylase		Down Regulated
ybbO	945337	Uncharacterized oxidoreductase ybbO	□	Down Regulated
fhlA	947181	Formate hydrogenlyase transcriptional activator		Up Regulated
thiL	947387	Thiamine-monophosphate kinase		Down Regulated
lyxK	948101	L-xylulose/3-keto-L-gulonate kinase		Ambiguous/Unsorted
sapF	945335	Peptide transport system ATP-binding protein sapF		Down Regulated

ppa	948748	Inorganic pyrophosphatase		Down Regulated
allR	945333	HTH-type transcriptional repressor allR		Up Regulated
ygfZ	947384	tRNA-modifying protein ygfZ		Temporarily Down Re
selB	948103	Selenocysteine-specific elongation factor		Down Regulated
yihW	948381	Uncharacterized HTH-type transcriptional regulator yihW	['Transcription', ' RNA related', ' Type of regulation', ' Genetic unit regulated', 'transcription', 'regulation of transcription DNA depend	Temporarily Up Regul
ydeN	945957	Uncharacterized sulfatase ydeN	['Signal transduction mechanisms', ' Metabolism of other compounds']	Temporarily Up Regul
cueR	945332	HTH-type transcriptional regulator cueR		Up Regulated
aegA	947383	Protein aegA		Temporarily Up Regul
fdoH	948395	Formate dehydrogenase-O iron-sulfur subunit		Down Regulated
dusA	948558	tRNA-dihydrouridine synthase A		Down Regulated
csrA	947176	Carbon storage regulator		Up Regulated
qorA	948556	Quinone oxidoreductase		Temporarily Up Regul
dnaB	948555	Replicative DNA helicase		Down Regulated
rhaT	948398	L-rhamnose-proton symporter		Up Regulated
mppA	945951	Periplasmic murein peptide-binding protein		Up Regulated
allA	945141	Ureidoglycolate hydrolase		Up Regulated
ThiM	945142	Hydroxyethylthiazole kinase		Temporarily Down Re
dinF	948554	DNA-damage-inducible protein F		Ambiguous/Unsorted
yjbJ	948553	UPF0337 protein yjbJ		Temporarily Up Regul
mtlA	948118	PTS system mannitol-specific EIICBA component		Temporarily Up Regul
mtlR	948116	Mannitol operon repressor		Ambiguous/Unsorted
cydA	945341	Cytochrome d ubiquinol oxidase subunit 1		Up Regulated
mpl	948752	UDP-N-acetylmuramate:L-alanyl-gamma-D-glutamyl-meso-diaminopimelate ligase		Down Regulated
yibK	948119	Uncharacterized tRNA/rRNA methyltransferase yibK		Temporarily Down Re
yibH	948110	Inner membrane protein yibH		Up Regulated
zitB	945348	Zinc transporter zitB		Ambiguous/Unsorted
yceB	947377	Uncharacterized lipoprotein yceB	['electron transport']	Down Regulated
betB	947376	Betaine aldehyde dehydrogenase		Down Regulated
ydhV	948756	Uncharacterized protein ydhV	[' Central intermediary metabolism']	Up Regulated
cydB	945347	Cytochrome d ubiquinol oxidase subunit 2		Ambiguous/Unsorted
fbp	948753	Fructose-1,6-bisphosphatase class 1		Ambiguous/Unsorted
ygfF	947373	Uncharacterized oxidoreductase ygfF	['tricarboxylic acid cycle']	Ambiguous/Unsorted
lysS	947372	Lysyl-tRNA synthetase; Lysyl-tRNA synthetase, heat inducible		Down Regulated
yibF	948113	Uncharacterized GST-like protein yibF	[]	Temporarily Down Re
yddA	945945	Inner membrane ABC transporter ATP-binding protein yddA		Up Regulated
yibJ	948112	b3595; ECDH10B_3776; Z5017		Up Regulated
alkA	947371	DNA-3-methyladenine glycosylase 2		Temporarily Down Re
yobB	948329	Uncharacterized protein yobB	['Replication recombination and repair']	Up Regulated
rluA	946262	Ribosomal large subunit pseudouridine synthase A; Pseudouridine synthase		Ambiguous/Unsorted
ygaH	945111	Uncharacterized protein ygaH	['Transcription', ' RNA related', ' Type of regulation', ' Protection', 'transcription', 'regulation of transcription DNA dependent']	Down Regulated
fre	948325	NAD(P)H-flavin reductase		Down Regulated
fadA	948324	3-ketoacyl-CoA thiolase		Up Regulated
ubiD	948326	3-octaprenyl-4-hydroxybenzoate carboxy-lyase		Ambiguous/Unsorted
tatA	948321	Sec-independent protein translocase protein tatA		Down Regulated
ysgA	948320	Putative carboxymethylenebutenolidase		Down Regulated
patA	947120	Putrescine aminotransferase		Up Regulated
torA	946267	Trimethylamine-N-oxide reductase 1		Up Regulated
apt	945113	Adenine phosphoribosyltransferase		Down Regulated
metE	948323	5-methyltetrahydropteroyltriglutamate--homocysteine methyltransferase		Ambiguous/Unsorted
acrA	945112	Acriflavine resistance protein A		Down Regulated
ybbP	945118	Uncharacterized ABC transporter permease ybbP		Temporarily Down Re
pyrF	947121	Orotidine 5'-phosphate decarboxylase		Down Regulated
rhsD	945116	Protein rhsD		Up Regulated
yjgH	948769	UPF0076 protein yjgH		Up Regulated
secB	948123	Protein-export protein secB		Down Regulated
trpD	945109	Anthranyl synthase component II		Down Regulated
gpsA	948125	Glycerol-3-phosphate dehydrogenase [NAD(P)+]		Down Regulated
moaE	945399	Molybdopterin-converting factor subunit 2		Temporarily Up Regul
pyrB	948767	Aspartate carbamoyltransferase catalytic chain; Aspartate carbamoyltransferase		Down Regulated
rhsA	948120	Protein rhsA		Up Regulated
pepB	948766	Peptidase B		Down Regulated
treR	948760	HTH-type transcriptional regulator treR		Ambiguous/Unsorted
ybhK	945390	UPF0052 protein ybhK		Temporarily Down Re
ycfD	945391	Uncharacterized protein ycfD	[]	Up Regulated
cysE	948126	Serine acetyltransferase		Down Regulated

yibQ	948128	Uncharacterized protein yibQ	['proteolysis']	Temporarily Down Regulated
ybbN	947119	Uncharacterized protein ybbN	['Nucleotide transport and metabolism']	Down Regulated
pepQ	948335	Xaa-Pro dipeptidase		Down Regulated
ynjH	946279	Uncharacterized protein ynjH	['Amino acid transport and metabolism']	Up Regulated
ybbJ	945126	Inner membrane protein ybbJ		Temporarily Up Regulated
ompW	945128	Outer membrane protein W		Temporarily Up Regulated
gcvT	947390	Aminomethyltransferase		Down Regulated
rfaF	948135	ADP-heptose--LPS heptosyltransferase 2		Down Regulated
gcvP	947394	Glycine dehydrogenase [decarboxylating]		Down Regulated
rfaC	948136	Lipopolysaccharide heptosyltransferase 1		Down Regulated
ypdB	947395	Uncharacterized response regulatory protein ypdB	□	Temporarily Up Regulated
rfaD	948134	ADP-L-glycero-D-manno-heptose-6-epimerase		Down Regulated
gcvH	947393	Glycine cleavage system H protein		Down Regulated
yibN	948131	Uncharacterized protein yibN	□	Down Regulated
grxC	948132	Glutaredoxin-3		Down Regulated
argI	948774	Ornithine carbamoyltransferase chain I; Ornithine carbamoyltransferase		Temporarily Down Regulated
rraB	948773	Uncharacterized protein yigD		Up Regulated
yigM	948772	Uncharacterized N-acetyltransferase yigM	□	Temporarily Up Regulated
tdh	948139	L-threonine 3-dehydrogenase		Ambiguous/Unsorted
kbl	948138	2-amino-3-ketobutyrate coenzyme A ligase		Temporarily Up Regulated
uvrD	948347	DNA helicase II		Down Regulated
rdoA	948346	Protein rdoA		Down Regulated
mobA	948349	Molybdopterin-guanine dinucleotide biosynthesis protein A		Temporarily Up Regulated
ybgC	948907	Acyl-CoA thioester hydrolase ybgC		Temporarily Down Regulated
yihD	948348	Protein yihD		Down Regulated
yafD	946286	UPF0294 protein yafD		Up Regulated
ygaW	947147	Uncharacterized protein ygaW	□	Down Regulated
sppA	946281	Protease 4		Down Regulated
nupG	946282	Nucleoside permease nupG		Down Regulated
ygaU	947144	Uncharacterized protein ygaU	□	Ambiguous/Unsorted
trmA	947143	tRNA (uracil-5-)-methyltransferase		Temporarily Down Regulated
yjaG	948501	Uncharacterized protein yjaG	□	Down Regulated
nfi	948502	Endonuclease V		Down Regulated
proW	947145	Glycine betaine/L-proline transport system permease protein proW		Ambiguous/Unsorted
purH	948503	Bifunctional purine biosynthesis protein purH		Down Regulated
ygiS	947140	Putative binding protein ygiS		Temporarily Down Regulated
purD	948504	Phosphoribosylamine--glycine ligase		Down Regulated
zraS	948506	Sensor protein; Sensor protein zraS		Ambiguous/Unsorted
ybjE	947142	Uncharacterized protein ybjE	[' Building block biosynthesis', 'metabolic process']	Temporarily Down Regulated
zraP	948507	Zinc resistance-associated protein		Temporarily Up Regulated
holC	948787	DNA polymerase III subunit chi		Down Regulated
yfcD	946783	Uncharacterized Nudix hydrolase yfcD	['tricarboxylic acid cycle', 'response to antibiotic']	Down Regulated
yqhG	945919	Uncharacterized protein yqhG	['Replication recombination and repair', ' Carbon compound utilization', 'DNA recombination']	Up Regulated
yccU	949008	Uncharacterized protein yccU	□	Temporarily Up Regulated
folX	946781	D-erythro-7,8-dihydroneopterin triphosphate epimerase		Ambiguous/Unsorted
rfe	948789	Undecaprenyl-phosphate alpha-N-acetylglucosaminyl 1-phosphate transferase		Temporarily Down Regulated
rfaY	948145	Lipopolysaccharide core biosynthesis protein rfaY		Down Regulated
yajC	945374	UPF0092 membrane protein yajC		Down Regulated
rfaL	948148	O-antigen ligase		Down Regulated
rpsI	949000	30S ribosomal protein S9		Down Regulated
DeoB	948910	Phosphopentomutase		Temporarily Up Regulated
ybhA	945372	Phosphatase ybhA		Down Regulated
yfcl	946787	Uncharacterized protein yfcl	['Amino acid transport and metabolism', ' Building block biosynthesis', 'amino acid metabolic process', 'aromatic amino acid family biosynthesis']	Up Regulated
radA	948912	DNA repair protein radA		Temporarily Up Regulated
mngR	945371	Mannosyl-D-glycerate transport/metabolism system repressor mngR		Ambiguous/Unsorted
intB	948782	ECDH10B_4464; ECIAI39_4743; UTI89_C4878; b4271; ECED1_5125; EC55989_4829; ECUIN_4803		Temporarily Up Regulated
nadR	948911	Transcriptional regulator nadR		Down Regulated
valS	948785	Valyl-tRNA synthetase		Down Regulated
serB	948913	Phosphoserine phosphatase		Temporarily Down Regulated
yfcH	946784	Epimerase family protein yfcH		Up Regulated
yeaG	946297	Uncharacterized protein yeaG	□	Up Regulated
YigA	948359	Uncharacterized protein yigA		Down Regulated
recR	945100	Recombination protein recR		Down Regulated
yihA	948358	Probable GTP-binding protein engB		Down Regulated
yigB	948357	Uncharacterized protein yigB	□	Down Regulated

ygaV	947136	Probable HTH-type transcriptional regulator ygaV		Up Regulated
tomB	945106	Uncharacterized protein ybaJ		Up Regulated
metA	948513	Homoserine O-succinyltransferase		Temporarily Up Regul
yjaB	948514	Uncharacterized N-acetyltransferase yjaB	□	Up Regulated
dnaX	945105	DNA polymerase III subunit tau		Down Regulated
polA	948356	DNA polymerase I		Down Regulated
ftsK	945102	DNA translocase ftsK		Temporarily Down Re
aceA	948517	Isocitrate lyase		Temporarily Up Regul
pagB	948518	Uncharacterized protein yjbD		Ambiguous/Unsorted
yjbD	948518	Uncharacterized protein yjbD		Ambiguous/Unsorted
xerC	948355	Tyrosine recombinase xerC		Down Regulated
ybaB	945104	UPF0133 protein ybaB		Down Regulated
asr	945103	Acid shock protein		Temporarily Up Regul
dsbA	948353	Thiol:disulfide interchange protein dsbA		Down Regulated
yicC	948154	UPF0701 protein yicC		Down Regulated
idnT	948798	Gnt-II system L-idonate transporter		Ambiguous/Unsorted
purF	946794	Amidophosphoribosyltransferase		Down Regulated
truA	946793	tRNA pseudouridine synthase A		Down Regulated
yjaH	948508	Uncharacterized protein yjaH	['Cell wall membrane envelope biogenesis', 'lipopolysaccharide biosynthetic process']	Down Regulated
pyrE	948157	Orotate phosphoribosyltransferase		Down Regulated
ynaJ	945901	Uncharacterized protein ynaJ	['Replication recombination and repair', 'DNA recombination']	Temporarily Down Re
bioC	945388	Biotin synthesis protein bioC		Down Regulated
slmA	948158	HTH-type protein slmA		Temporarily Down Re
uspE	945904	Universal stress protein E		Temporarily Up Regul
rph	948156	Ribonuclease PH		Temporarily Down Re
folK	948792	2-amino-4-hydroxy-6-hydroxymethylidihydropteridine pyrophosphokinase		Down Regulated
accD	946796	Acetyl-coenzyme A carboxylase carboxyl transferase subunit beta		Down Regulated
ydaM	945909	Uncharacterized protein ydaM		Up Regulated
uxuB	946795	D-mannonate oxidoreductase		Up Regulated
ybhJ	945380	Uncharacterized protein ybhJ	['Energy production and conversion', 'Energy metabolism carbon ', 'glycolysis', 'tricarboxylic acid cycle']	Up Regulated
deoC	948902	Deoxyribose-phosphate aldolase		Down Regulated
dedA	946798	Protein dedA		Down Regulated
deoA	948901	Thymidine phosphorylase		Down Regulated
tolQ	948900	Protein tolQ		Down Regulated
pheT	945382	Phenylalanyl-tRNA synthetase beta chain		Down Regulated
nuoG	946762	NADH-quinone oxidoreductase; NADH-quinone oxidoreductase subunit G		Down Regulated
ydcD	946958	Uncharacterized protein ydcD	['Cell wall membrane envelope biogenesis']	Up Regulated
CARA	949025	Carbamoyl-phosphate synthase small chain		Temporarily Up Regul
yacl	944809	UPF0231 protein yacl		Temporarily Up Regul
nuoA	946764	NADH-quinone oxidoreductase subunit; NADH-quinone oxidoreductase subunit A		Down Regulated
yehU	949027	Inner membrane protein yehU		Ambiguous/Unsorted
mutM	946765	Formamidopyrimidine-DNA glycosylase		Temporarily Up Regul
idi	949020	Isopentenyl-diphosphate Delta-isomerase		Up Regulated
yfbS	946766	Uncharacterized transporter yfbS	□	Temporarily Down Re
yfbU	946767	UPF0304 protein yfbU		Down Regulated
selD	946768	Selenide, water dikinase		Down Regulated
lraA	946769	Probable HTH-type transcriptional regulator lraA		Up Regulated
ftsL	944803	Cell division protein ftsL		Ambiguous/Unsorted
yicI	948169	Alpha-xylosidase		Temporarily Up Regul
fruR	944804	Fructose repressor		Ambiguous/Unsorted
yfdC	944801	Inner membrane protein yfdC		Up Regulated
gltS	948166	Sodium/glutamate symport carrier protein		Ambiguous/Unsorted
ydfJ	944802	b4600; c1969; EchS_A1633; Z2153; E2348C_1663; ECED1_1671; ECDH10B_1674; ECH74115_2159; EC55989_1684; ECS88_1623; EcE24377A_1752; EcSMS35_1621; ECED1_1674; EC		Up Regulated
fkpB	944807	FKBP-type 16 kDa peptidyl-prolyl cis-trans isomerase		Down Regulated
nuoH	946761	NADH-quinone oxidoreductase subunit H		Down Regulated
recG	948162	ATP-dependent DNA helicase recG		Down Regulated
rpoZ	948160	DNA-directed RNA polymerase subunit omega		Temporarily Down Re
trmH	948161	tRNA guanosine-2'-O-methyltransferase		Temporarily Down Re
maeA	946031	NAD-dependent malic enzyme		Down Regulated
ydhF	946960	Oxidoreductase ydhF		Up Regulated
adhP	946036	Alcohol dehydrogenase, propanol-preferring		Temporarily Up Regul
nuoC	946759	NADH-quinone oxidoreductase subunit C/D		Down Regulated
ackA	946775	Acetate kinase		Down Regulated
yfbV	946774	UPF0208 membrane protein yfbV		Up Regulated
ymdA	949012	Uncharacterized protein ymdA	□	Down Regulated

yfbT	946777	Phosphatase yfbT		Down Regulated
pta	946778	Phosphate acetyltransferase		Down Regulated
yicN	948173	Uncharacterized protein yicN	['Carbon compound utilization', 'regulation of transcription']	Temporarily Down Regulated
yicL	948176	Uncharacterized inner membrane transporter yicL	['regulation of cell shape']	Ambiguous/Unsorted
nlpA	948175	Lipoprotein 28		Down Regulated
ygfT	949018	Uncharacterized protein ygfT	['electron transport']	Temporarily Up Regulated
yicH	948171	Uncharacterized protein yicH	['Energy production and conversion']	Up Regulated
lspA	944800	Lipoprotein signal peptidase		Down Regulated
yfgD	946974	Uncharacterized protein yfgD	[]	Temporarily Down Regulated
rhsE	946026	EC55989_0238; b1456		Ambiguous/Unsorted
ymbA	946972	Uncharacterized lipoprotein ymbA	['Amino acid transport and metabolism']	Temporarily Up Regulated
uraA	946978	Uracil permease		Down Regulated
galS	949043	HTH-type transcriptional regulator galS		Temporarily Up Regulated
nuoE	946746	NADH-quinone oxidoreductase subunit E		Down Regulated
yeiB	949044	Uncharacterized protein yeiB	['two component signal transduction system phosphorelay']	Down Regulated
yeiG	949045	S-formylglutathione hydrolase yeiG		Down Regulated
artQ	949046	Arginine transport system permease protein artQ		Down Regulated
dfp	949047	Coenzyme A biosynthesis bifunctional protein coaBC		Down Regulated
menE	946741	2-succinylbenzoate--CoA ligase		Temporarily Up Regulated
gltI	946938	Glutamate/aspartate periplasmic-binding protein		Temporarily Up Regulated
ftsQ	944823	Cell division protein ftsQ		Down Regulated
yadG	944833	Uncharacterized ABC transporter ATP-binding protein yadG		Down Regulated
can	944832	Carbonic anhydrase 2		Down Regulated
gnsb	946054	Protein gnsB		Down Regulated
secM	944831	Secretion monitor		Down Regulated
gcd	944830	Quinoprotein glucose dehydrogenase		Down Regulated
tmcA	946053	Uncharacterized protein ypfl		Ambiguous/Unsorted
ivbL	948181	IlvBN operon leader peptide		Temporarily Up Regulated
nuoB	946738	NADH-quinone oxidoreductase subunit B		Down Regulated
rpmB	946941	50S ribosomal protein L28		Down Regulated
yfaZ	946739	Uncharacterized protein yfaZ	[]	Temporarily Up Regulated
nuoI	946757	NADH-quinone oxidoreductase subunit I		Down Regulated
ubiX	949033	3-octaprenyl-4-hydroxybenzoate carboxy-lyase		Down Regulated
purE	949031	Phosphoribosylaminoimidazole carboxylase catalytic subunit		Down Regulated
yfcE	946755	Phosphodiesterase yfcE		Down Regulated
nuoJ	946756	NADH-quinone oxidoreductase subunit J		Down Regulated
nuoF	946753	NADH-quinone oxidoreductase subunit F		Down Regulated
yeiA	949037	Uncharacterized protein yeiA	['Nucleotide transport and metabolism']	Up Regulated
ppiB	949038	Peptidyl-prolyl cis-trans isomerase B; Peptidyl-prolyl cis-trans isomerase		Down Regulated
nadE	946946	NH(3)-dependent NAD(+) synthetase		Down Regulated
thyA	949035	Thymidylate synthase		Down Regulated
murD	944818	UDP-N-acetylmuramoylalanine--D-glutamate ligase		Down Regulated
surA	944812	Chaperone surA		Down Regulated
murF	944813	UDP-N-acetylmuramoyl-tripeptide--D-alanyl-D-alanine ligase		Down Regulated
mraY	944814	Phospho-N-acetylmuramoyl-pentapeptide-transferase		Down Regulated
wzzE	944815	Lipopolysaccharide biosynthesis protein wzzE		Down Regulated
uidC	944820	Membrane-associated protein uidC		Up Regulated
ddpB	946044	Probable D,D-dipeptide transport system permease protein ddpB		Down Regulated
secA	944821	Protein translocase subunit secA		Down Regulated
ibpB	948192	Small heat shock protein ibpB		Up Regulated
yidE	948193	Putative transport protein yidE		Up Regulated
ypfJ	946956	Uncharacterized protein ypfJ	[]	Temporarily Up Regulated
bamC	946954	Lipoprotein 34		Down Regulated
gcvR	946950	Glycine cleavage system transcriptional repressor		Temporarily Up Regulated
yebQ	946048	Uncharacterized transporter yebQ	[]	Temporarily Down Regulated
yfcN	944847	UPF0115 protein yfcN		Temporarily Down Regulated
ybgJ	945311	Uncharacterized protein ybgJ	[]	Down Regulated
sucC	945312	Succinyl-CoA ligase [ADP-forming] subunit beta		Down Regulated
yadB	944846	Glutamyl-Q tRNA(Asp) synthetase; Insertion element IS150 uncharacterized 14 kDa protein		Ambiguous/Unsorted
hrpB	944845	ATP-dependent RNA helicase hrpB		Temporarily Down Regulated
ybgK	945317	Uncharacterized protein ybgK	[]	Down Regulated
lpxA	944849	Acyl-[acyl-carrier-protein]--UDP-N-acetylglucosamine O-acyltransferase		Down Regulated
yjgR	948978	Uncharacterized protein yjgR	[]	Temporarily Up Regulated
rffD	948977	UDP-N-acetyl-D-mannosamine dehydrogenase		Down Regulated
glpQ	946725	Glycerophosphoryl diester phosphodiesterase		Temporarily Up Regulated

pinR	948973	Putative DNA-invertase from lambdoid prophage Rac		Up Regulated
coaE	949060	Dephospho-CoA kinase		Up Regulated
clcA	946715	H(+)/Cl(-) exchange transporter clcA		Down Regulated
dksA	944850	DnaK suppressor protein		Temporarily Up Regul
sucB	945307	Dihydropyridine-residue succinyltransferase component of 2-oxoglutarate dehydrogenase complex		Down Regulated
hisJ	945309	Histidine-binding periplasmic protein		Temporarily Down Re
lpd	944854	Dihydropyridine dehydrogenase		Down Regulated
HtpX	946076	Probable protease htpX		Ambiguous/Unsorted
ydhC	946077	Inner membrane transport protein ydhC		Down Regulated
rnhB	944852	Ribonuclease HII		Down Regulated
aceE	944834	Pyruvate dehydrogenase E1 component		Down Regulated
lptG	945324	Lipopolysaccharide export system permease protein lptG		Ambiguous/Unsorted
sdhD	945322	Succinate dehydrogenase hydrophobic membrane anchor subunit		Down Regulated
panB	944839	3-methyl-2-oxobutanoate hydroxymethyltransferase		Down Regulated
tolR	945328	Protein tolR		Down Regulated
yjhQ	949059	Uncharacterized N-acetyltransferase yjhQ	['Translation ribosomal structure and biogenesis', 'translation']	Up Regulated
csgA	949055	Major curlin subunit		Up Regulated
glpC	946735	Anaerobic glycerol-3-phosphate dehydrogenase subunit C		Up Regulated
trxB	949054	Thioredoxin reductase		Down Regulated
menC	946734	o-succinylbenzoate synthase		Down Regulated
lpxH	949053	UDP-2,3-diacetylglucosamine hydrolase		Down Regulated
lrp	949051	Leucine-responsive regulatory protein		Down Regulated
cydD	949052	ATP-binding/permease protein cydD		Down Regulated
rluE	945701	Pseudouridine synthase; Ribosomal large subunit pseudouridine synthase E		Down Regulated
hipA	946064	Protein hipA		Temporarily Up Regul
ygbL	947197	Putative aldolase class 2 protein ygbL		Temporarily Up Regul
manA	944840	Mannose-6-phosphate isomerase		Temporarily Down Re
ybgL	945318	UPF0271 protein ybgL		Down Regulated
pphB	947196	Serine/threonine-protein phosphatase 2		Temporarily Up Regul
ygbK	947199	Uncharacterized protein ygbK	['Carbohydrate transport and metabolism']	Up Regulated
ydeJ	946067	Protein ydeJ		Up Regulated
yacH	944868	Uncharacterized protein yacH	['Signal transduction mechanisms', 'Type of regulation', 'signal transduction']	Up Regulated
argP	944867	Chromosome initiation inhibitor		Ambiguous/Unsorted
caiB	948997	Crotonobetainyl-CoA:camitine CoA-transferase		Up Regulated
eco	946700	Ecotin		Down Regulated
symE	949088	Endoribonuclease symE		Up Regulated
ymdB	946987	UPF0189 protein ymdB		Ambiguous/Unsorted
bamB	946982	Lipoprotein yfgL		Down Regulated
der	946983	GTP-binding protein engA		Down Regulated
yfgJ	946984	Uncharacterized protein yfgJ	['Type of regulation']	Ambiguous/Unsorted
cdsA	944876	Phosphatidate cytidyltransferase		Temporarily Down Re
dnaE	944877	DNA polymerase III subunit alpha		Down Regulated
yfgG	946980	Uncharacterized protein yfgG	['Nucleotide transport and metabolism']	Up Regulated
yfgM	946981	UPF0070 protein yfgM		Down Regulated
yaeR	944875	Uncharacterized protein yaeR	[]	Ambiguous/Unsorted
glnH	944872	Glutamine-binding periplasmic protein		Down Regulated
flhE	946094	Flagellar protein flhE		Down Regulated
prc	946096	Tail-specific protease		Down Regulated
bamA	944870	Outer membrane protein assembly factor yaeT		Down Regulated
rseP	944871	Regulator of sigma E protease		Down Regulated
ynfN	946097	Uncharacterized protein ynfN	[]	Up Regulated
osmE	945305	Osmotically-inducible lipoprotein E		Temporarily Up Regul
sucA	945303	2-oxoglutarate dehydrogenase E1 component		Down Regulated
ulaF	948711	L-ribulose-5-phosphate 4-epimerase ulaF		Up Regulated
aer	945301	Aerotaxis receptor		Up Regulated
erpA	944857	Iron-sulfur cluster insertion protein erpA		Up Regulated
yjY	948713	Uncharacterized protein yjY	[]	Temporarily Up Regul
kdpE	945302	KDP operon transcriptional regulatory protein kdpE		Temporarily Up Regul
yciM	944858	Uncharacterized protein yciM	[]	Ambiguous/Unsorted
glpA	946713	Anaerobic glycerol-3-phosphate dehydrogenase subunit A		Up Regulated
menF	946712	Menaquinone-specific isochorismate synthase		Ambiguous/Unsorted
sbcC	949076	Nuclease sbcCD subunit C		Down Regulated
apbE	946711	Thiamine biosynthesis lipoprotein apbE		Temporarily Down Re
lola	948989	Outer-membrane lipoprotein carrier protein		Down Regulated
betA	945716	Choline dehydrogenase		Down Regulated



xdhD	949079	Probable hypoxanthine oxidase xdhD		Up Regulated
flgH	946996	Flagellar L-ring protein		Down Regulated
sseA	946993	3-mercaptopyruvate sulfurtransferase		Temporarily Up Regul
glpT	946704	Glycerol-3-phosphate transporter		Up Regulated
sseB	946994	Protein sseB		Down Regulated
ulaR	948706	HTH-type transcriptional regulator ulaR		Up Regulated
rodZ	946992	Cytoskeleton protein rodZ		Temporarily Down Re
acnB	944864	Aconitate hydratase 2		Down Regulated
yjfP	948707	Esterase yjfP		Ambiguous/Unsorted
yjfN	948709	Uncharacterized protein yjfN	[' Building block biosynthesis', 'ion transport']	Up Regulated
tsf	944866	Elongation factor Ts		Down Regulated
pinQ	946088	Putative DNA-invertase from lambdoid prophage Qin		Up Regulated
yebR	946086	UPF0067 protein yebR		Down Regulated
skp	944861	Chaperone protein skp		Down Regulated
dcp	946084	Peptidyl-dipeptidase dcp		Ambiguous/Unsorted
fabZ	944888	(3R)-hydroxymyristoyl-[acyl-carrier-protein] dehydratase		Down Regulated
yhfY	947888	Uncharacterized protein yhfY	['Replication recombination and repair', ' Carbon compound utilization']	Temporarily Up Regul
yhfX	947889	Uncharacterized protein yhfX	['Replication recombination and repair', ' Carbon compound utilization']	Up Regulated
lpxD	944882	UDP-3-O-[3-hydroxymyristoyl] glucosamine N-acyltransferase		Down Regulated
map	947882	Methionine aminopeptidase		Ambiguous/Unsorted
DHAR	945743	PTS-dependent dihydroxyacetone kinase operon regulatory protein		Up Regulated
yjiX	949090	Uncharacterized protein yjiX	['Signal transduction mechanisms', ' Adaptation to stress', 'response to stress']	Down Regulated
cysG	947880	Siroheme synthase		Down Regulated
umuD	945746	Protein umuD		Up Regulated
minE	945740	Cell division topological specificity factor		Down Regulated
kdsB	945539	3-deoxy-manno-octulosonate cytidyltransferase		Down Regulated
folM	949096	Dihydrofolate reductase folM		Temporarily Up Regul
hupB	949095	DNA-binding protein HU-beta		Ambiguous/Unsorted
rbfA	947685	Ribosome-binding factor A		Down Regulated
ycbC	945546	Uncharacterized protein ycbC	['regulation of cell shape', 'peptidoglycan biosynthetic process']	Ambiguous/Unsorted
infB	947684	Translation initiation factor IF-2		Down Regulated
arnA	947683	Bifunctional polymyxin resistance protein arnA		Up Regulated
mukF	945548	Chromosome partition protein mukF		Down Regulated
nusA	947682	Transcription elongation protein nusA		Down Regulated
smtA	945547	Protein smtA		Down Regulated
uxaB	945542	Altronate oxidoreductase		Up Regulated
ycbB	945541	Uncharacterized protein ycbB	['DNA replication']	Temporarily Up Regul
rimP	947680	b3170		Down Regulated
yegX	945543	Uncharacterized protein yegX	['translation']	Up Regulated
nuoL	945540	NADH-quinone oxidoreductase subunit L		Down Regulated
rlmE	947689	b3179		Down Regulated
yhbY	947688	RNA-binding protein yhbY		Down Regulated
truB	947687	tRNA pseudouridine synthase B		Down Regulated
sufD	944878	Protein sufD		Up Regulated
rpsO	947686	30S ribosomal protein S15		Down Regulated
PabA	947873	Para-aminobenzoate synthase glutamine amidotransferase component II		Ambiguous/Unsorted
metQ	944893	D-methionine-binding lipoprotein metQ		Down Regulated
rpsB	947874	30S ribosomal protein S2		Down Regulated
accA	944895	Acetyl-coenzyme A carboxylase carboxyl transferase subunit alpha		Down Regulated
yejH	945529	Uncharacterized protein yejH	[' Building block biosynthesis', 'amino acid biosynthetic process']	Temporarily Down Re
serC	945527	Phosphoserine aminotransferase		Down Regulated
pnp	947672	Polyribonucleotide nucleotidyltransferase		Down Regulated
yhbQ	947671	UPF0213 protein yhbQ		Up Regulated
deaD	947674	Cold-shock DEAD box protein A		Down Regulated
cmk	945535	Cytidylate kinase		Temporarily Down Re
nlpI	947673	Lipoprotein nlpI		Temporarily Down Re
ihfB	945533	Integration host factor subunit beta		Down Regulated
ycal	945531	Uncharacterized protein ycal	□	Up Regulated
rssA	945725	NTE family protein rssA		Temporarily Down Re
mtr	947675	Tryptophan-specific transport protein		Temporarily Up Regul
yhbW	947677	Uncharacterized protein yhbW	□	Down Regulated
ymgE	945760	UPF0410 protein ymgE		Up Regulated
clpA	945764	ATP-dependent Clp protease ATP-binding subunit clpA		Temporarily Up Regul
pth	945765	Peptidyl-tRNA hydrolase		Ambiguous/Unsorted
fabD	945766	Malonyl CoA-acyl carrier protein transacylase		Down Regulated

ycgV	945767	Uncharacterized protein ycgV	['Amino acid transport and metabolism', ' Building block biosynthesis']	Up Regulated
trpB	945768	Tryptophan synthase beta chain		Down Regulated
rimL	945564	Ribosomal RNA large subunit methyltransferase L		Down Regulated
gst	945758	Glutathione S-transferase		Up Regulated
ycbX	945563	Uncharacterized protein ycbX	[]	Temporarily Down Re
rmf	945567	Ribosome modulation factor		Temporarily Up Regul
gph	947895	Phosphoglycolate phosphatase		Down Regulated
rpe	947896	Ribulose-phosphate 3-epimerase		Down Regulated
yhfZ	947897	Uncharacterized protein yhfZ	['Replication recombination and repair', ' Carbon compound utilization', 'DNA replication']	Up Regulated
dadA	945752	D-amino acid dehydrogenase small subunit		Temporarily Down Re
sufB	945753	Protein sufB		Temporarily Up Regul
mukB	945549	Chromosome partition protein mukB		Down Regulated
ldcA	945756	Muramoyltetrapeptide carboxypeptidase		Temporarily Down Re
treA	945757	Periplasmic trehalase; Putative periplasmic trehalase		Up Regulated
dam	947893	DNA adenine methylase		Down Regulated
trpS	947894	Tryptophanyl-tRNA synthetase		Down Regulated
ompF	945554	Outer membrane protein F		Down Regulated
dhaM	945749	PTS-dependent dihydroxyacetone kinase, phosphotransferase subunit dhaM		Down Regulated
dhaL	945748	PTS-dependent dihydroxyacetone kinase, ADP-binding subunit dhaL		Down Regulated
glmM	947692	Phosphoglucosamine mutase		Down Regulated
aspC	945553	Aspartate aminotransferase		Down Regulated
folP	947691	Dihydropteroate synthase		Down Regulated
ycbW	945552	Uncharacterized protein ycbW	['Nucleotide transport and metabolism', ' Building block biosynthesis']	Ambiguous/Unsorted
dhaK	945747	PTS-dependent dihydroxyacetone kinase, dihydroxyacetone-binding subunit dhaK		Down Regulated
dacB	947693	D-alanyl-D-alanine carboxypeptidase dacB		Down Regulated
ybaN	945558	Inner membrane protein ybaN		Down Regulated
greA	947696	Transcription elongation factor; Transcription elongation factor greA		Down Regulated
yhdJ	947695	Uncharacterized adenine-specific methylase yhdJ		Up Regulated
yhbE	947699	Uncharacterized inner membrane transporter yhbE	[' Type of regulation']	Down Regulated
ycbL	945551	Uncharacterized protein ycbL	[]	Temporarily Down Re
mukE	945550	Chromosome partition protein mukE		Down Regulated
pyrC	945787	Dihydroorotase		Down Regulated
yjiM	945789	Uncharacterized protein yjiM	[]	Up Regulated
ychA	945784	Protein sirB1		Down Regulated
yeeO	946506	Uncharacterized transporter yeeO	[]	Temporarily Up Regul
hisF	946516	Imidazole glycerol phosphate synthase subunit hisF		Down Regulated
agaA	947646	ECED1_3799; EC55989_3555; E2348C_3421; ECUMN_3619; ECIAI1_3285; ECDH10B_3308; ECIAI39_3636; b3135; ECS88_3523		Ambiguous/Unsorted
garP	947642	Probable galactarate transporter		Temporarily Up Regul
yeeR	946512	Inner membrane protein yeeR		Down Regulated
dmsC	945502	Anaerobic dimethyl sulfoxide reductase chain C		Up Regulated
rihA	945503	Pyrimidine-specific ribonucleoside hydrolase rihA		Down Regulated
cydC	945504	ATP-binding/permease protein cydC		Temporarily Up Regul
grxB	946926	Glutaredoxin-2		Temporarily Up Regul
yfiH	947089	UPF0124 protein yfiH		Down Regulated
hemA	945777	Glutamyl-tRNA reductase		Temporarily Down Re
ycgM	946115	Uncharacterized protein ycgM	[]	Ambiguous/Unsorted
aroF	947084	Phospho-2-dehydro-3-deoxyheptonate aldolase, Tyr-sensitive		Down Regulated
lolB	945775	Outer-membrane lipoprotein lolB		Down Regulated
ispE	945774	4-diphosphocytidyl-2-C-methyl-D-erythritol kinase		Down Regulated
bamD	947086	UPF0169 lipoprotein yfiO		Down Regulated
agp	945773	Glucose-1-phosphatase		Up Regulated
prs	945772	Ribose-phosphate pyrophosphokinase		Down Regulated
rluD	947087	Pseudouridine synthase; Ribosomal large subunit pseudouridine synthase D		Ambiguous/Unsorted
cysB	945771	HTH-type transcriptional regulator cysB		Ambiguous/Unsorted
ychM	945770	Putative sulfate transporter ychM		Ambiguous/Unsorted
agaR	947636	Putative aga operon transcriptional repressor		Up Regulated
yhaV	947638	Uncharacterized protein yhaV		Up Regulated
cbl	946502	HTH-type transcriptional regulator cbl		Down Regulated
nac	946501	Nitrogen assimilation regulatory protein nac		Down Regulated
efeB	946500	Peroxidase ycdB		Down Regulated
pheA	947081	P-protein		Down Regulated
pheL	947080	Phe operon leader peptide		Up Regulated
yfeZ	946918	Inner membrane protein yfeZ		Down Regulated
uxuA	947082	Mannonate dehydratase		Temporarily Up Regul
ypeA	946917	Acetyltransferase ypeA		Down Regulated

bisC	946915	Biotin sulfoxide reductase		Down Regulated
yfeX	946913	Uncharacterized protein yfeX	[' Building block biosynthesis']	Temporarily Down Re
pflA	945517	Pyruvate formate-lyase 1-activating enzyme		Temporarily Up Regul
ypjD	947098	Inner membrane protein ypjD		Down Regulated
trpC	945519	Tryptophan biosynthesis protein trpCF		Down Regulated
rspB	946127	Starvation-sensing protein rspB		Up Regulated
rplS	947096	50S ribosomal protein L19		Down Regulated
sufC	946128	Probable ATP-dependent transporter sufC		Temporarily Up Regul
trmD	947099	tRNA (guanine-N(1)-)-methyltransferase		Down Regulated
ydhK	946528	Uncharacterized transporter ydhK	[' Type of regulation']	Temporarily Down Re
sbcB	946529	Exodeoxyribonuclease I		Temporarily Down Re
hisD	946531	Histidinol dehydrogenase		Temporarily Up Regul
yraL	947664	UPF0011 protein yraL		Ambiguous/Unsorted
rsml	947664	UPF0011 protein yraL		Ambiguous/Unsorted
yadE	946536	Uncharacterized protein yadE	['Cell wall membrane envelope biogenesis', 'lipopolysaccharide biosynthetic process']	Up Regulated
yraQ	947668	UPF0718 protein yraQ		Up Regulated
yajO	946903	Uncharacterized oxidoreductase yajO	[]	Temporarily Up Regul
ycaK	945520	Uncharacterized NAD(P)H oxidoreductase ycaK	['amino acid transport']	Up Regulated
yajG	945521	Uncharacterized lipoprotein yajG	['Posttranslational modification protein turnover chaperones', ' Electrochemical potential driven transporters']	Down Regulated
yraN	947662	UPF0102 protein yraN		Down Regulated
yraM	947663	Uncharacterized protein yraM	['DNA replication']	Down Regulated
ivy	946530	Inhibitor of vertebrate lysozyme		Temporarily Up Regul
ycaP	945525	UPF0702 transmembrane protein ycaP		Ambiguous/Unsorted
hcr	947660	NADH oxidoreductase hcr		Up Regulated
diaA	947661	DnaA initiator-associating protein diaA		Down Regulated
rsxC	946137	Electron transport complex protein rnfC		Down Regulated
rhmT	945796	Inner membrane transport protein yfaV		Ambiguous/Unsorted
yfaV	945796	Inner membrane transport protein yfaV		Ambiguous/Unsorted
yafS	944903	Uncharacterized protein yafS	['DNA replication']	Down Regulated
serS	945506	Seryl-tRNA synthetase		Temporarily Down Re
rarA	945505	Replication-associated recombination protein A		Down Regulated
ychN	945794	Protein ychN		Temporarily Up Regul
dkgB	944901	2,5-diketo-D-gluconic acid reductase B		Up Regulated
yafJ	944906	Putative glutamine amidotransferase yafJ		Ambiguous/Unsorted
queA	944905	S-adenosylmethionine:tRNA ribosyltransferase-isomerase		Down Regulated
cobU	946519	Bifunctional adenosylcobalamin biosynthesis protein cobU		Up Regulated
ynfD	946133	Uncharacterized protein ynfD	['Energy production and conversion', ' Electrochemical potential driven transporters', 'response to stress']	Up Regulated
rsxD	946134	Electron transport complex protein rnfD		Down Regulated
chaB	945792	Cation transport regulator chaB		Temporarily Up Regul
chaA	945790	Calcium/proton antiporter		Down Regulated
poxB	946132	Pyruvate dehydrogenase [cytochrome]		Up Regulated
mreC	947655	Rod shape-determining protein mreC		Down Regulated
hisA	946521	1-(5-phosphoribosyl)-5-[(5-phosphoribosylamino)methylideneamino] imidazole-4-carboxamide isomerase		Down Regulated
cobS	946520	Cobalamin synthase		Temporarily Up Regul
yraJ	947656	Uncharacterized outer membrane usher protein yraJ	['Amino acid transport and metabolism', 'Coenzyme transport and metabolism', ' Central intermediary metabolism', 'translation']	Up Regulated
yeeE	946526	UPF0394 inner membrane protein yeeE		Down Regulated
yraH	947658	Uncharacterized fimbrial-like protein yraH	[]	Up Regulated
hslJ	946525	Heat shock protein hslJ		Temporarily Up Regul
yafK	944910	Uncharacterized protein yafK	[]	Temporarily Down Re
ycaD	945515	Uncharacterized MFS-type transporter ycaD	['translation']	Temporarily Up Regul
yhgE	947651	Uncharacterized protein yhgE	[]	Temporarily Up Regul
focA	945513	Type-1 fimbrial protein, C chain; Probable formate transporter 1		Temporarily Down Re
hisC	946551	Histidinol-phosphate aminotransferase		Down Regulated
hisB	946552	Histidine biosynthesis bifunctional protein hisB		Down Regulated
mutL	948691	DNA mismatch repair protein mutL		Temporarily Down Re
yjeT	948696	Uncharacterized protein yjeT	['Posttranslational modification protein turnover chaperones', 'purine nucleotide biosynthetic process']	Temporarily Down Re
rplJ	948490	50S ribosomal protein L10		Down Regulated
hflK	948698	Protein hflK		Down Regulated
yjfC	948699	Uncharacterized protein yjfC	['electron transport', 'metabolic process']	Up Regulated
exuT	947601	Hexuronate transporter		Up Regulated
rplE	947800	50S ribosomal protein L5		Down Regulated
rpsN	947801	30S ribosomal protein S14		Down Regulated
rpsH	947802	30S ribosomal protein S8		Down Regulated
umuC	946359	Protein umuC		Up Regulated
rplF	947803	50S ribosomal protein L6		Down Regulated

ptrB	946358	Protease 2		Ambiguous/Unsorted
yoaB	946357	UPF0076 protein yoaB		Down Regulated
pphA	946356	Serine/threonine-protein phosphatase 1		Up Regulated
cdh	948410	CDP-diacylglycerol pyrophosphatase		Temporarily Down Re
pdxJ	947039	Pyridoxine 5'-phosphate synthase		Temporarily Down Re
pdxA	944919	4-hydroxythreonine-4-phosphate dehydrogenase		Down Regulated
cyoD	944918	Cytochrome o ubiquinol oxidase protein cyoD		Down Regulated
yebW	946354	Uncharacterized protein yebW	□	Up Regulated
queC	947034	Queuosine biosynthesis protein queC		Up Regulated
pfkA	948412	6-phosphofructokinase; 6-phosphofructokinase isozyme 1		Down Regulated
fieF	948413	Ferrous-iron efflux pump fieF		Temporarily Down Re
fpr	948414	Ferredoxin--NADP reductase		Temporarily Down Re
uspD	948415	Universal stress protein D		Temporarily Up Regul
yjiS	948416	UPF0381 protein yjiS		Temporarily Up Regul
hemE	948497	Uroporphyrinogen decarboxylase		Down Regulated
yebO	946350	Uncharacterized protein yebO	□	Down Regulated
yjiR	948417	Uncharacterized protein yjiR	['Amino acid transport and metabolism', ' Building block biosynthesis']	Up Regulated
hupA	948499	DNA-binding protein HU-alpha		Down Regulated
menA	948418	1,4-dihydroxy-2-naphthoate octaprenyltransferase		Down Regulated
nudC	948498	NADH pyrophosphatase		Ambiguous/Unsorted
yafQ	944911	Uncharacterized protein yafQ		Up Regulated
flu	946540	Antigen 43		Down Regulated
frdC	948680	Fumarate reductase subunit C		Temporarily Up Regul
zapA	947404	Cell division protein zapA		Temporarily Up Regul
yeeX	946541	UPF0265 protein yeeX		Ambiguous/Unsorted
hfq	948689	Protein hfq		Down Regulated
sbmC	946546	DNA gyrase inhibitory protein		Temporarily Up Regul
hisL	946547	His operon leader peptide		Ambiguous/Unsorted
hflX	948688	GTP-binding protein hflX		Down Regulated
hisG	946549	ATP phosphoribosyltransferase		Down Regulated
hisH	946544	Imidazole glycerol phosphate synthase subunit hisH		Down Regulated
yeeA	946545	Inner membrane protein yeeA		Up Regulated
ygbJ	947200	Uncharacterized oxidoreductase ygbJ	□	Up Regulated
rpmI	946349	50S ribosomal protein L35		Down Regulated
rsmF	946348	Ribosomal RNA small subunit methyltransferase F		Temporarily Down Re
rplL	948489	50S ribosomal protein L7/L12		Down Regulated
yeeD	946539	UPF0033 protein yeeD		Temporarily Up Regul
dsbB	946344	Disulfide bond formation protein B		Down Regulated
yebV	946347	Uncharacterized protein yebV	['Replication recombination and repair']	Up Regulated
yoaH	946346	UPF0181 protein yoaH		Down Regulated
yfiC	947047	ECED1_3006; c3099; E2348C_2852; ECIAI1_2689; APECO1_3956; ECS88_2749; ECDH10B_2743; ECUMN_2898; ECIAI39_2780; UTI89_C2897; EC55989_2864; pC15-1a_066; Z3857; b25		Ambiguous/Unsorted
rplK	948484	50S ribosomal protein L11		Down Regulated
rplA	948483	50S ribosomal protein L1		Down Regulated
rimA	946340	b1822		Ambiguous/Unsorted
cpxR	948404	Transcriptional regulatory protein cpxR		Down Regulated
yobD	946343	UPF0266 membrane protein yobD		Down Regulated
rhtA	947045	Inner membrane transporter rhtA		Temporarily Up Regul
ygbM	947207	Protein ygbM		Temporarily Up Regul
manZ	946342	Mannose permease IID component		Temporarily Up Regul
rpoB	948488	DNA-directed RNA polymerase subunit beta		Down Regulated
bolA	947043	Protein bolA		Temporarily Up Regul
dinB	944922	DNA polymerase IV		Ambiguous/Unsorted
nusG	948485	Transcription antitermination protein nusG		Temporarily Down Re
yjiM	948406	Protein yjiM		Down Regulated
lepB	947040	Signal peptidase I		Down Regulated
pgk	947414	Phosphoglycerate kinase		Down Regulated
mscS	947416	Small-conductance mechanosensitive channel		Down Regulated
cpsG	946574	Phosphomannomutase		Temporarily Down Re
fbaA	947415	Fructose-bisphosphate aldolase class 2		Down Regulated
ugd	946571	UDP-glucose 6-dehydrogenase		Temporarily Up Regul
argO	947418	Arginine exporter protein argO		Up Regulated
rpoE	947050	RNA polymerase sigma factor; RNA polymerase sigma-E factor		Up Regulated
rplD	947818	50S ribosomal protein L4		Down Regulated
rplC	947817	50S ribosomal protein L3		Down Regulated
yggF	947410	Uncharacterized protein yggF	['Replication recombination and repair', ' Central intermediary metabolism', 'DNA recombination']	Temporarily Down Re

yhaH	947617	Inner membrane protein yhaH		Temporarily Up Regul
hslU	948430	ATP-dependent hsl protease ATP-binding subunit hslU		Down Regulated
yebC	946379	UPF0082 protein yebC		Down Regulated
ruvC	946378	Crossover junction endodeoxyribonuclease ruvC		Down Regulated
rplB	947820	50S ribosomal protein L2		Down Regulated
metF	948432	Methylenetetrahydrofolate reductase; 5,10-methylenetetrahydrofolate reductase		Temporarily Up Regul
surE	947211	Multifunctional protein surE		Down Regulated
yciS	944936	Inner membrane protein yciS		Down Regulated
ruvB	946371	Holliday junction ATP-dependent DNA helicase ruvB		Temporarily Down Re
truD	947214	tRNA pseudouridine synthase D		Down Regulated
rseB	947054	Sigma-E factor regulatory protein rseB		Temporarily Down Re
rseA	947053	Sigma-E factor negative regulatory protein		Ambiguous/Unsorted
metB	948434	Cystathionine gamma-synthase		Down Regulated
znuA	946375	High-affinity zinc uptake system protein znuA		Ambiguous/Unsorted
ydeA	947218	UPF0401 protein yubL; Probable sugar efflux transporter; Sugar efflux transporter		Up Regulated
metJ	948435	Met repressor		Temporarily Up Regul
srmB	947055	ATP-dependent RNA helicase srmB		Down Regulated
rsmA	944939	b0051		Down Regulated
cysN	947219	Sulfate adenyltransferase subunit 1		Down Regulated
yciH	947058	Uncharacterized protein yciH	['Translation ribosomal structure and biogenesis', 'translation']	Down Regulated
nagE	945292	PTS system N-acetylglucosamine-specific EIICBA component		Up Regulated
ycfQ	947425	Uncharacterized HTH-type transcriptional regulator ycfQ	[]	Up Regulated
FldA	945293	Flavodoxin-1		Down Regulated
rdgB	947429	Nucleoside-triphosphatase; Nucleoside-triphosphatase rdgB		Down Regulated
insE	944952	Transposase insE for insertion sequence IS3A/B/C/D/E/fA/fB; Transposase insE for insertion sequence IS3		Up Regulated
fur	945295	Ferric uptake regulation protein		Ambiguous/Unsorted
entE	947426	Enterobactin synthetase component E		Temporarily Up Regul
ybaO	945091	Uncharacterized HTH-type transcriptional regulator ybaO	[' Metabolism of other compounds']	Up Regulated
rpmC	947807	50S ribosomal protein L29		Down Regulated
rplP	947806	50S ribosomal protein L16		Down Regulated
rpmJ	947805	50S ribosomal protein L36 2; 50S ribosomal protein L36; 50S ribosomal protein L36 1		Down Regulated
yegH	946566	UPF0053 protein yegH		Ambiguous/Unsorted
rplR	947804	50S ribosomal protein L18		Down Regulated
murR	946568	b2427		Down Regulated
tktA	947420	Transketolase 1		Down Regulated
rplN	947809	50S ribosomal protein L14		Down Regulated
rpsQ	947808	30S ribosomal protein S17		Down Regulated
marA	947613	Multiple antibiotic resistance protein marA		Up Regulated
yqjF	947608	Inner membrane protein yqjF		Up Regulated
eda	946367	KHG/KDPG aldolase		Down Regulated
glpF	948422	Glycerol uptake facilitator protein		Up Regulated
zapB	948420	Cell division protein zapB		Up Regulated
purT	946368	Phosphoribosylglycinamide formyltransferase 2		Down Regulated
rplV	947813	50S ribosomal protein L22		Down Regulated
rpsC	947814	30S ribosomal protein S3		Down Regulated
rpsS	947811	30S ribosomal protein S19		Down Regulated
cysC	947221	Adenyl-sulfate kinase		Down Regulated
hslV	948429	ATP-dependent protease hslV		Down Regulated
eamB	947065	Cysteine/O-acetylserine efflux protein		Temporarily Up Regul
ybgF	947227	Uncharacterized protein ybgF		Down Regulated
cytR	948427	HTH-type transcriptional repressor cytR		Down Regulated
exoX	946361	Exodeoxyribonuclease 10		Down Regulated
selU	947063	tRNA 2-selenouridine synthase		Up Regulated
maa	945096	Maltose O-acetyltransferase		Up Regulated
pagP	946360	Protein crcA		Up Regulated
kgpP	947069	Alpha-ketoglutarate permease		Temporarily Up Regul
yebF	946363	Protein yebF		Up Regulated
adk	945097	Adenylate kinase		Down Regulated
edd	946362	Phosphogluconate dehydratase		Temporarily Down Re
hha	945098	Hemolysin expression-modulating protein		Up Regulated
yfiD	947068	Autonomous glycyl radical cofactor		Temporarily Down Re
insF	944948	Transposase insF for insertion sequence IS3A/B/C/D/E/fA		Up Regulated
ung	947067	Uracil-DNA glycosylase		Down Regulated
htpG	945099	Chaperone protein htpG		Down Regulated
glpK	948423	Glycerol kinase		Up Regulated

yebG	946364	Uncharacterized protein yebG	['Translation ribosomal structure and biogenesis', 'Replication recombination and repair']	Up Regulated
glpX	948424	Fructose-1,6-bisphosphatase class 2		Temporarily Up Regul
yfiF	947066	Uncharacterized tRNA/rRNA methyltransferase yfiF	[]	Down Regulated
speA	947432	Biosynthetic arginine decarboxylase; Arginine decarboxylase		Down Regulated
vacJ	945582	Lipoprotein vacJ		Down Regulated
mlaA	945582	Lipoprotein vacJ		Down Regulated
CHIA	947837	Probable bifunctional chitinase/lysozyme		Up Regulated
mpaA	945969	Protein mpaA		Up Regulated
tufA	947838	Elongation factor Tu 2; Elongation factor Tu; Elongation factor Tu 1		Down Regulated
bfr	947839	Bacterioferritin		Up Regulated
cyoA	945080	Ubiquinol oxidase subunit 2		Down Regulated
yfaL	946595	Uncharacterized protein yfaL		Up Regulated
dtpA	947436	Tripeptide permease tppB		Ambiguous/Unsorted
tppB	947436	Tripeptide permease tppB		Ambiguous/Unsorted
cof	945089	HMP-PP phosphatase		Ambiguous/Unsorted
mdlB	945088	Multidrug resistance-like ATP-binding protein mdlB		Temporarily Down Re
glnK	945087	Nitrogen regulatory protein P-II 2		Down Regulated
yjiO	948451	Uncharacterized HTH-type transcriptional regulator yjiO	[' RNA related', ' Type of regulation', ' Genetic unit regulated', 'regulation of transcription DNA dependent']	Down Regulated
lon	945085	ATP-dependent protease La		Ambiguous/Unsorted
clpX	945083	ATP-dependent Clp protease ATP-binding subunit clpX		Ambiguous/Unsorted
argC	948455	N-acetyl-gamma-glutamyl-phosphate reductase		Temporarily Down Re
ykgA	944956	UTI89_C0322; ECS88_0301; APECO1_1693; E2348C_0262; c0416; ECIAI39_0385; ECIAI1_0298; ECUMN_0338; b0300; EC55989_0303; Z0376; ECDH10B_0289		Ambiguous/Unsorted
ycfJ	945977	Uncharacterized protein ycfJ	[]	Temporarily Up Regul
argE	948456	Acetylornithine deacetylase		Down Regulated
ydcU	945976	Inner membrane ABC transporter permease protein ydcU		Temporarily Up Regul
rpmG	946318	50S ribosomal protein L33		Down Regulated
ppc	948457	Phosphoenolpyruvate carboxylase		Down Regulated
fusA	947847	Elongation factor G		Down Regulated
yjiP	948458	E2348C_4267; ECUMN_4486; ECED1_4660; b3955; ECDH10B_4143; ECIAI1_4163; EC55989_4437; Z5513; ECS88_4410; UTI89_C4546; c4914; ECIAI39_3034		Down Regulated
rpsG	947846	30S ribosomal protein S7		Down Regulated
yeaQ	946311	UPF0410 protein yeaQ		Temporarily Up Regul
yeaY	946312	Uncharacterized lipoprotein yeaY	['Cell wall membrane envelope biogenesis', 'metabolic process']	Up Regulated
yggE	947442	UPF0301 protein yggE		Down Regulated
ompA	945571	Outer membrane protein A		Temporarily Up Regul
cusS	945978	Sensor kinase cusS; Sensor protein		Down Regulated
rplM	947828	50S ribosomal protein L13		Down Regulated
ydbK	946587	Probable pyruvate-flavodoxin oxidoreductase		Up Regulated
tehB	945979	Tellurite resistance protein tehB		Temporarily Down Re
gspB	947826	Protein pioO		Ambiguous/Unsorted
hspQ	945578	Heat shock protein hspQ		Temporarily Up Regul
asmA	946582	Protein asmA		Down Regulated
trmI	947448	tRNA (guanine-N(7)-)-methyltransferase		Up Regulated
mgsA	945574	Methylglyoxal synthase		Ambiguous/Unsorted
yggW	947446	Oxygen-independent coproporphyrinogen-III oxidase-like protein yggW		Down Regulated
mutY	947447	A/G-specific adenine glycosylase		Down Regulated
scpA	945576	Protein sbm		Up Regulated
gshB	947445	Glutathione synthetase		Temporarily Down Re
iscU	947002	NifU-like protein		Temporarily Up Regul
LeuC	945076	3-isopropylmalate dehydratase large subunit		Down Regulated
gldA	948440	Glycerol dehydrogenase		Ambiguous/Unsorted
puuC	947003	Gamma-glutamyl-gamma-aminobutyraldehyde dehydrogenase		Down Regulated
ydbC	945980	Putative oxidoreductase ydbC		Ambiguous/Unsorted
hcaR	947000	Hca operon transcriptional activator		Down Regulated
yccS	947001	Inner membrane protein yccS		Down Regulated
puuB	945072	Gamma-glutamylputrescine oxidoreductase		Down Regulated
clpS	948443	ATP-dependent Clp protease adapter protein clpS		Up Regulated
ompX	944967	Outer membrane protein X		Up Regulated
yahN	944968	Uncharacterized membrane protein yahN		Up Regulated
tesB	945074	Acyl-CoA thioesterase 2		Temporarily Up Regul
yahM	944969	Uncharacterized protein yahM	[]	Temporarily Up Regul
emrE	948442	Multidrug transporter emrE		Up Regulated
cyoE	945073	Protoheme IX farnesyltransferase		Down Regulated
ydcA	945986	Uncharacterized protein ydcA	['Energy production and conversion', ' Energy production transport', ' Macromolecules cellular constituent biosynthesis', 'electron t	Up Regulated
yoaA	946305	Probable ATP-dependent helicase yoaA		Down Regulated
yhcN	947835	Uncharacterized protein yhcN	['Transcription', ' Building block biosynthesis', ' RNA related', ' Type of regulation', 'DNA recombination', 'transcription', 'regulation of	Up Regulated

thiB	946306	Thiamine-binding periplasmic protein		Temporarily Up Regul
hemX	948446	Putative uroporphyrinogen-III C-methyltransferase		Down Regulated
yeaL	946307	Uncharacterized protein yeaL	□	Temporarily Down Re
flgA	946300	Flagella basal body P-ring formation protein flgA		Down Regulated
mipA	946301	MitA-interacting protein		Down Regulated
ydeM	945981	Anaerobic sulfatase-maturing enzyme homolog ydeM		Up Regulated
iscS	947004	Cysteine desulfurase		Ambiguous/Unsorted
yeaE	946302	Uncharacterized protein yeaE		Temporarily Down Re
ydfK	947451	Uncharacterized protein ydfK	□	Up Regulated
yggN	947453	Uncharacterized protein yggN	[' Central intermediary metabolism']	Ambiguous/Unsorted
solA	944983	N-methyl-L-tryptophan oxidase		Down Regulated
flgJ	947456	Peptidoglycan hydrolase flgJ		Down Regulated
betI	944981	HTH-type transcriptional regulator betI		Up Regulated
prpR	944987	Propionate catabolism operon regulatory protein		Up Regulated
frmR	944986	Transcriptional repressor frmR		Down Regulated
ycdX	948477	Putative hydrolase ycdX		Down Regulated
sdaA	946331	L-serine dehydratase 1		Up Regulated
murB	948470	UDP-N-acetylenolpyruvoylglucosamine reductase		Down Regulated
manY	946332	Mannose permease IIC component		Temporarily Down Re
yncJ	945990	Uncharacterized protein yncJ	□	Ambiguous/Unsorted
qseE	947013	Putative sensor-like histidine kinase yfhK; Sensor protein		Down Regulated
glrK	947013	Putative sensor-like histidine kinase yfhK; Sensor protein		Down Regulated
panE	945065	2-dehydropantoate 2-reductase		Up Regulated
yebY	947014	Uncharacterized protein yebY	['translation']	Down Regulated
nudL	946330	Uncharacterized Nudix hydrolase nudL		Up Regulated
yoaE	946335	UPF0053 inner membrane protein yoaE		Temporarily Down Re
yheU	947863	UPF0270 protein yheU		Temporarily Down Re
trg	945995	Methyl-accepting chemotaxis protein III		Up Regulated
glnB	947016	Nitrogen regulatory protein P-II 1		Ambiguous/Unsorted
xseB	945069	Exodeoxyribonuclease 7 small subunit		Ambiguous/Unsorted
degS	947865	Protease degS		Down Regulated
pepT	946333	Peptidase T		Ambiguous/Unsorted
argD	947864	Succinylornithine transaminase; Acetylornithine/succinyldiaminopimelate aminotransferase		Ambiguous/Unsorted
manX	946334	PTS system mannose-specific EIIAB component		Ambiguous/Unsorted
cspC	946339	Cold shock-like protein cspC		Down Regulated
crp	947867	Catabolite gene activator		Temporarily Down Re
rimL	945998	Ribosomal-protein-serine acetyltransferase		Up Regulated
coaA	948479	Pantothenate kinase		Temporarily Down Re
ydcH	945997	Uncharacterized protein ydcH	[' Channel type Transporters']	Temporarily Up Regul
tsgA	947869	Protein tsgA		Ambiguous/Unsorted
yobF	946338	Uncharacterized protein yobF	[' RNA related', ' Type of regulation', ' Adaptation to stress', 'transcription', 'regulation of transcription DNA dependent']	Down Regulated
yhdH	947848	Putative quinone oxidoreductase yhdH		Temporarily Up Regul
slyX	947849	Protein slyX		Temporarily Up Regul
yggA	947462	Uncharacterized protein yggA	□	Up Regulated
prpB	944990	Methylisocitrate lyase		Up Regulated
torS	945595	Sensor protein torS; Sensor protein		Temporarily Down Re
frmB	944991	S-formylglutathione hydrolase frmB		Temporarily Down Re
cbpM	945597	Chaperone modulatory protein cbpM		Up Regulated
codB	944994	Cytosine permease		Down Regulated
glcC	947466	Glc operon transcriptional activator		Temporarily Up Regul
proY	945050	Proline-specific permease proY		Temporarily Down Re
frmA	944988	S-(hydroxymethyl)glutathione dehydrogenase		Down Regulated
argH	948463	Argininosuccinate lyase		Ambiguous/Unsorted
sthA	948461	Soluble pyridine nucleotide transhydrogenase		Down Regulated
nusB	945054	N utilization substance protein B homolog; N utilization substance protein B		Down Regulated
oxyR	948462	Hydrogen peroxide-inducible genes activator		Temporarily Up Regul
glyA	947022	Serine hydroxymethyltransferase		Down Regulated
yphH	947023	Uncharacterized protein yphH	['Carbohydrate transport and metabolism', 'Transcription', 'carbohydrate metabolic process']	Ambiguous/Unsorted
murG	946321	UDP-N-acetylglucosamine--N-acetylmuramyl-(pentapeptide) pyrophosphoryl-undecaprenol N-acetylglucosamine transferase		Down Regulated
mdh	947854	Malate dehydrogenase		Ambiguous/Unsorted
ftsW	946322	Cell division protein ftsW		Temporarily Down Re
yajR	945058	Inner membrane transport protein yajR		Up Regulated
ddlB	946324	D-alanine--D-alanine ligase B		Down Regulated
yheO	947851	Uncharacterized protein yheO	['protein folding']	Down Regulated
yfhR	945059	Uncharacterized protein yfhR	□	Ambiguous/Unsorted

kefG	947857	Glutathione-regulated potassium-efflux system ancillary protein kefG	Up Regulated
yheS	947856	Uncharacterized ABC transporter ATP-binding protein yheS []	Temporarily Down Re
rnd	946328	Ribonuclease D	Ambiguous/Unsorted