Accession	Name	Description
TIGR00001	rpmI_bact	ribosomal protein bL35
TIGR00002	S16	ribosomal protein bS16
TIGR00006	TIGR00006	16S rRNA (cytosine(1402)-N(4))-methyltransferase
TIGR00007	TIGR00007	1-(5-phosphoribosyl)-5-[(5-phosphoribosylamino)methylideneamino]imidazole-4-carboxamide isomerase
TIGR00008	infA	translation initiation factor IF-1
TIGR00009	L28	ribosomal protein bL28
TIGR00012	L29	ribosomal protein uL29
TIGR00014	arsC	arsenate reductase (glutaredoxin)
TIGR00016	ackA	acetate kinase
TIGR00017	cmk	cytidylate kinase
TIGR00018	panC	pantoate--beta-alanine ligase
TIGR00019	prfA	peptide chain release factor 1
TIGR00020	prfB	peptide chain release factor 2
TIGR00021	rpiA	ribose 5-phosphate isomerase A
TIGR00023	TIGR00023	acyl-phosphate glycerol 3-phosphate acyltransferase
TIGR00029	S20	ribosomal protein bS20
TIGR00030	S21p	ribosomal protein bS21
TIGR00031	UDP-GALP_mutase	UDP-galactopyranose mutase
TIGR00032	argG	argininosuccinate synthase
TIGR00033	aroC	chorismate synthase
TIGR00034	aroFGH	3-deoxy-7-phosphoheptulonate synthase
TIGR00036	dapB	4-hydroxy-tetrahydrodipicolinate reductase
TIGR00038	efp	translation elongation factor P
TIGR00041	DTMP_kinase	dTMP kinase
TIGR00042	TIGR00042	non-canonical purine NTP pyrophosphatase, RdgB/HAM1 family
TIGR00043	TIGR00043	rRNA maturation RNase YbeY
TIGR00048	rRNA_mod_RlmN	23S rRNA (adenine(2503)-C(2))-methyltransferase
TIGR00054	TIGR00054	RIP metalloprotease RseP
TIGR00055	uppS	di-trans,poly-cis-decaprenylcistransferase
TIGR00057	TIGR00057	tRNA threonylcarbamoyl adenosine modification protein, Sua5/YciO/YrdC/YwlC family
TIGR00059	L17	ribosomal protein bL17
TIGR00060	L18_bact	ribosomal protein uL18
TIGR00061	L21	ribosomal protein bL21
TIGR00062	L27	ribosomal protein bL27

TIGR00063	folE	GTP cyclohydrolase I
TIGR00064	ftsY	signal recognition particle-docking protein FtsY
TIGR00065	ftsZ	cell division protein FtsZ
TIGR00066	g_glut_trans	gamma-glutamyltransferase
TIGR00067	glut_race	glutamate racemase
TIGR00068	glyox_I	lactoylglutathione lyase
TIGR00070	hisG	ATP phosphoribosyltransferase
TIGR00071	hisT_truA	tRNA pseudouridine(38-40) synthase
TIGR00073	hypB	hydrogenase accessory protein HypB
TIGR00074	hypC_hupF	hydrogenase assembly chaperone HypC/HupF
TIGR00075	hypD	hydrogenase expression/formation protein HypD
TIGR00077	lspA	signal peptidase II
TIGR00078	nadC	nicotinate-nucleotide diphosphorylase (carboxylating)
TIGR00079	pept_deformyl	peptide deformylase
TIGR00080	pimt	protein-L-isoaspartate O-methyltransferase
TIGR00081	purC	phosphoribosylaminoimidazolesuccinocarboxamide synthase
TIGR00082	rbfA	ribosome-binding factor A
TIGR00083	ribF	riboflavin biosynthesis protein RibF
TIGR00084	ruvA	Holliday junction DNA helicase RuvA
TIGR00086	smpB	SsrA-binding protein
TIGR00087	surE	5'/3'-nucleotidase SurE
TIGR00088	trmD	tRNA (guanine(37)-N(1))-methyltransferase
TIGR00090	rsfS_iojap_ybeB	ribosome silencing factor
TIGR00091	TIGR00091	tRNA (guanine-N(7)-)-methyltransferase
TIGR00095	TIGR00095	16S rRNA (guanine(966)-N(2))-methyltransferase RsmD
TIGR00096	TIGR00096	16S rRNA (cytidine(1402)-2'-O)-methyltransferase
TIGR00100	hypA	hydrogenase nickel insertion protein HypA
TIGR00101	ureG	urease accessory protein UreG
TIGR00103	DNA_YbaB_EbfC	DNA-binding protein, YbaB/EbfC family
TIGR00104	tRNA_TsaA	tRNA-Thr(GGU) m(6)t(6)A37 methyltransferase TsaA
TIGR00105	L31	ribosomal protein bL31
TIGR00107	deoD	purine nucleoside phosphorylase
TIGR00109	hemH	ferrochelatase
TIGR00110	ilvD	dihydroxy-acid dehydratase
TIGR00112	proC	pyrroline-5-carboxylate reductase
TIGR00113	queA	S-adenosylmethionine:tRNA ribosyltransferase-isomerase

TIGR00114	lumazine-synth	6,7-dimethyl-8-ribityllumazine synthase
TIGR00115	tig	trigger factor
TIGR00116	tsf	translation elongation factor Ts
TIGR00117	acnB	aconitate hydratase 2
TIGR00118	acolac_lg	acetolactate synthase, large subunit, biosynthetic type
TIGR00119	acolac_sm	acetolactate synthase, small subunit
TIGR00120	ArgJ	glutamate N-acetyltransferase/amino-acid acetyltransferase
TIGR00123	cbiM	cobalamin biosynthesis protein CbiM
TIGR00124	cit_ly_ligase	[citrate (pro-3S)-lyase] ligase
TIGR00126	deoC	deoxyribose-phosphate aldolase
TIGR00127	nadp_idh_euk	isocitrate dehydrogenase, NADP-dependent
TIGR00128	fabD	malonyl CoA-acyl carrier protein transacylase
TIGR00129	fdhD_narQ	formate dehydrogenase family accessory protein FdhD
TIGR00131	gal_kin	galactokinase
TIGR00132	gatA	aspartyl/glutamyl-tRNA(Asn/Gln) amidotransferase, A subunit
TIGR00133	gatB	aspartyl/glutamyl-tRNA(Asn/Gln) amidotransferase, B subunit
TIGR00135	gatC	aspartyl/glutamyl-tRNA(Asn/Gln) amidotransferase, C subunit
TIGR00136	gidA	tRNA uridine 5-carboxymethylaminomethyl modification enzyme GidA
TIGR00137	gid_trmFO	tRNA:m(5)U-54 methyltransferase
TIGR00138	rsmG_gidB	16S rRNA (guanine(527)-N(7))-methyltransferase RsmG
TIGR00140	hupD	hydrogenase expression/formation protein
TIGR00142	hycI	hydrogenase maturation peptidase HycI
TIGR00143	hypF	carbamoyltransferase HypF
TIGR00150	T6A_YjeE	tRNA threonylcarbamoyl adenosine modification protein YjeE
TIGR00152	TIGR00152	dephospho-CoA kinase
TIGR00154	ispE	4-(cytidine 5'-diphospho)-2-C-methyl-D-erythritol kinase
TIGR00157	TIGR00157	ribosome small subunit-dependent GTPase A
TIGR00158	L9	ribosomal protein bL9
TIGR00160	MGSA	methylglyoxal synthase
TIGR00163	PS_decarb	phosphatidylserine decarboxylase
TIGR00165	S18	ribosomal protein bS18

TIGR00166	S6	ribosomal protein bS6
TIGR00168	infC	translation initiation factor IF-3
TIGR00169	leuB	3-isopropylmalate dehydrogenase
TIGR00172	maf	septum formation protein Maf
TIGR00173	menD	2-succinyl-5-enolpyruvyl-6-hydroxy-3-cyclohexene-1-carboxylic-acid synthase
TIGR00174	miaA	tRNA dimethylallyltransferase
TIGR00176	mobB	molybdopterin-guanine dinucleotide biosynthesis protein B
TIGR00178	monomer_idh	isocitrate dehydrogenase, NADP-dependent
TIGR00179	murB	UDP-N-acetylenolpyruvoylglucosamine reductase
TIGR00181	pepF	oligoendopeptidase F
TIGR00182	plsX	fatty acid/phospholipid synthesis protein PlsX
TIGR00183	prok_nadp_idh	isocitrate dehydrogenase, NADP-dependent
TIGR00184	purA	adenylosuccinate synthase
TIGR00185	tRNA_yibK_trmL	tRNA (cytidine(34)-2'-O)-methyltransferase
TIGR00187	ribE	riboflavin synthase, alpha subunit
TIGR00188	rnpA	ribonuclease P protein component
TIGR00189	tesB	acyl-CoA thioesterase II
TIGR00190	thiC	phosphomethylpyrimidine synthase
TIGR00191	thrB	homoserine kinase
TIGR00195	exoDNase_III	exodeoxyribonuclease III
TIGR00198	cat_per_HPI	catalase/peroxidase HPI
TIGR00202	csrA	carbon storage regulator
TIGR00203	cydB	cytochrome d ubiquinol oxidase, subunit II
TIGR00204	dxs	1-deoxy-D-xylulose-5-phosphate synthase
TIGR00205	fliE	flagellar hook-basal body complex protein FliE
TIGR00206	fliF	flagellar M-ring protein FliF
TIGR00207	fliG	flagellar motor switch protein FliG
TIGR00208	fliS	flagellar protein FliS
TIGR00209	galT_1	galactose-1-phosphate uridylyltransferase
TIGR00210	gltS	sodium/glutamate symporter
TIGR00212	hemC	hydroxymethylbilane synthase
TIGR00214	lipB	lipoyl(octanoyl) transferase
TIGR00215	lpxB	lipid-A-disaccharide synthase
TIGR00216	ispH_lytB	4-hydroxy-3-methylbut-2-enyl diphosphate reductase
TIGR00217	malQ	4-alpha-glucanotransferase
TIGR00218	manA	mannose-6-phosphate isomerase, class I
TIGR00219	mreC	rod shape-determining protein MreC

TIGR00220	mscL	large conductance mechanosensitive channel protein
TIGR00221	nagA	N-acetylglucosamine-6-phosphate deacetylase
TIGR00222	panB	3-methyl-2-oxobutanoate hydroxymethyltransferase
TIGR00223	panD	aspartate 1-decarboxylase
TIGR00224	pckA	phosphoenolpyruvate carboxykinase (ATP)
TIGR00228	ruvC	crossover junction endodeoxyribonuclease RuvC
TIGR00230	sfsA	sugar fermentation stimulation protein
TIGR00232	tktlase_bact	transketolase
TIGR00233	trpS	tryptophan--tRNA ligase
TIGR00234	tyrS	tyrosine--tRNA ligase
TIGR00235	udk	uridine kinase
TIGR00236	wecB	UDP-N-acetylglucosamine 2-epimerase
TIGR00237	xseA	exodeoxyribonuclease VII, large subunit
TIGR00239	2oxo_dh_E1	oxoglutarate dehydrogenase (succinyl-transferring), E1 component
TIGR00240	ATCase_reg	aspartate carbamoyltransferase, regulatory subunit
TIGR00242	TIGR00242	division/cell wall cluster transcriptional repressor MraZ
TIGR00243	Dxr	1-deoxy-D-xylulose 5-phosphate reductoisomerase
TIGR00244	TIGR00244	transcriptional regulator NrdR
TIGR00246	tRNA_RlmH_YbeA	rRNA large subunit m3Psi methyltransferase RlmH
TIGR00249	sixA	phosphohistidine phosphatase SixA
TIGR00256	TIGR00256	D-tyrosyl-tRNA(Tyr) deacylase
TIGR00260	thrC	threonine synthase
TIGR00262	trpA	tryptophan synthase, alpha subunit
TIGR00263	trpB	tryptophan synthase, beta subunit
TIGR00273	TIGR00273	iron-sulfur cluster-binding protein
TIGR00274	TIGR00274	N-acetylmuramic acid 6-phosphate etherase
TIGR00276	TIGR00276	epoxyqueuosine reductase
TIGR00278	TIGR00278	putative membrane protein insertion efficiency factor
TIGR00281	TIGR00281	segregation and condensation protein B
TIGR00287	cas1	CRISPR-associated endonuclease Cas1
TIGR00302	TIGR00302	phosphoribosylformylglycinamidine synthase, purS protein
TIGR00312	cbiD	cobalamin biosynthesis protein CbiD
TIGR00313	cobQ	cobyric acid synthase CobQ
TIGR00317	cobS	cobalamin 5'-phosphate synthase
TIGR00325	lpxC	UDP-3-O-[3-hydroxymyristoyl] N-acetylglucosamine

		deacetylase
TIGR00326	eubact_ribD	riboflavin biosynthesis protein RibD
TIGR00328	flhB	flagellar biosynthetic protein FlhB
TIGR00330	glpX	fructose-1,6-bisphosphatase, class II
TIGR00331	hrcA	heat-inducible transcription repressor HrcA
TIGR00333	nrdI	nrdI protein
TIGR00334	5S_RNA_mat_M5	ribonuclease M5
TIGR00337	PyrG	CTP synthase
TIGR00338	serB	phosphoserine phosphatase SerB
TIGR00343	TIGR00343	pyridoxal 5'-phosphate synthase, synthase subunit Pdx1
TIGR00344	alaS	alanine--tRNA ligase
TIGR00347	bioD	dethiobiotin synthase
TIGR00351	narI	respiratory nitrate reductase, gamma subunit
TIGR00353	nrfE	cytochrome c-type biogenesis protein CcmF
TIGR00355	purH	phosphoribosylaminoimidazolecarboxamide formyltransferase/IMP cyclohydrolase
TIGR00359	cello_pts_IIC	PTS system, cellobiose-specific IIC component
TIGR00361	ComEC_Rec2	DNA internalization-related competence protein ComEC/Rec2
TIGR00362	DnaA	chromosomal replication initiator protein DnaA
TIGR00364	TIGR00364	queuosine biosynthesis protein QueC
TIGR00365	TIGR00365	monothiol glutaredoxin, Grx4 family
TIGR00372	cas4	CRISPR-associated protein Cas4
TIGR00378	cax	calcium/proton exchanger
TIGR00379	cobB	cobyrinic acid a,c-diamide synthase
TIGR00380	cobD	cobalamin biosynthesis protein CobD
TIGR00382	clpX	ATP-dependent Clp protease, ATP-binding subunit ClpX
TIGR00383	corA	magnesium and cobalt transport protein CorA
TIGR00387	glcD	glycolate oxidase, subunit GlcD
TIGR00389	glyS_dimeric	glycine--tRNA ligase
TIGR00390	hslU	ATP-dependent protease HslVU, ATPase subunit
TIGR00392	ileS	isoleucine--tRNA ligase
TIGR00396	leuS_bact	leucine--tRNA ligase
TIGR00402	napF	ferredoxin-type protein NapF
TIGR00406	prmA	ribosomal protein L11 methyltransferase
TIGR00408	proS_fam_I	proline--tRNA ligase
TIGR00409	proS_fam_II	proline--tRNA ligase
TIGR00414	serS	serine--tRNA ligase

TIGR00416	sms	DNA repair protein RadA
TIGR00417	speE	spermidine synthase
TIGR00418	thrS	threonine--tRNA ligase
TIGR00419	tim	triose-phosphate isomerase
TIGR00420	trmU	tRNA (5-methylaminomethyl-2-thiouridylate)-methyltransferase
TIGR00422	valS	valine--tRNA ligase
TIGR00430	Q_tRNA_tgt	tRNA-guanine transglycosylase
TIGR00431	TruB	tRNA pseudouridine(55) synthase
TIGR00433	bioB	biotin synthase
TIGR00435	cysS	cysteine--tRNA ligase
TIGR00436	era	GTP-binding protein Era
TIGR00438	rrmJ	ribosomal RNA large subunit methyltransferase J
TIGR00439	ftsX	putative protein insertion permease FtsX
TIGR00440	glnS	glutamine--tRNA ligase
TIGR00441	gmhA	phosphoheptose isomerase
TIGR00442	hisS	histidine--tRNA ligase
TIGR00443	hisZ_biosyn_reg	ATP phosphoribosyltransferase, regulatory subunit
TIGR00445	mraY	phospho-N-acetylmuramoyl-pentapeptide-transferase
TIGR00447	pth	aminoacyl-tRNA hydrolase
TIGR00450	mnmE_trmE_thdF	tRNA modification GTPase TrmE
TIGR00452	TIGR00452	tRNA (mo5U34)-methyltransferase
TIGR00456	argS	arginine--tRNA ligase
TIGR00457	asnS	asparagine--tRNA ligase
TIGR00459	aspS_bact	aspartate--tRNA ligase
TIGR00460	fmt	methionyl-tRNA formyltransferase
TIGR00461	gcvP	glycine dehydrogenase
TIGR00462	genX	EF-P lysine aminoacylase GenX
TIGR00464	gltX_bact	glutamate--tRNA ligase
TIGR00465	ilvC	ketol-acid reductoisomerase
TIGR00466	kdsB	3-deoxy-D-manno-octulosonate cytidylyltransferase
TIGR00468	pheS	phenylalanine--tRNA ligase, alpha subunit
TIGR00472	pheT_bact	phenylalanine--tRNA ligase, beta subunit
TIGR00473	pssA	CDP-diacylglycerol-serine O-phosphatidyltransferase
TIGR00474	selA	L-seryl-tRNA(Sec) selenium transferase
TIGR00475	selB	selenocysteine-specific translation elongation factor
TIGR00476	selD	selenide, water dikinase
TIGR00477	tehB	tellurite resistance protein TehB

TIGR00479	rumA	23S rRNA (uracil-5-)-methyltransferase RumA
TIGR00482	TIGR00482	nicotinate (nicotinamide) nucleotide adenylyltransferase
TIGR00484	EF-G	translation elongation factor G
TIGR00485	EF-Tu	translation elongation factor Tu
TIGR00487	IF-2	translation initiation factor IF-2
TIGR00492	alr	alanine racemase
TIGR00493	clpP	ATP-dependent Clp endopeptidase, proteolytic subunit ClpP
TIGR00496	frr	ribosome recycling factor
TIGR00497	hsdM	type I restriction-modification system, M subunit
TIGR00498	lexA	repressor LexA
TIGR00499	lysS_bact	lysine--tRNA ligase
TIGR00500	met_pdase_I	methionine aminopeptidase, type I
TIGR00502	nagB	glucosamine-6-phosphate deaminase
TIGR00503	prfC	peptide chain release factor 3
TIGR00504	pyro_pdase	pyroglutamyl-peptidase I
TIGR00508	bioA	adenosylmethionine-8-amino-7-oxononanoate transaminase
TIGR00510	lipA	lipoyl synthase
TIGR00512	salvage_mtnA	S-methyl-5-thioribose-1-phosphate isomerase
TIGR00513	accA	acetyl-CoA carboxylase, carboxyl transferase, alpha subunit
TIGR00514	accC	acetyl-CoA carboxylase, biotin carboxylase subunit
TIGR00515	accD	acetyl-CoA carboxylase, carboxyl transferase, beta subunit
TIGR00517	acyl_carrier	acyl carrier protein
TIGR00518	alaDH	alanine dehydrogenase
TIGR00521	coaBC_dfp	phosphopantothenoylcysteine decarboxylase / phosphopantothenate--cysteine ligase
TIGR00525	folB	dihydroneopterin aldolase
TIGR00527	gcvH	glycine cleavage system H protein
TIGR00528	gcvT	glycine cleavage system T protein
TIGR00531	BCCP	acetyl-CoA carboxylase, biotin carboxyl carrier protein
TIGR00532	HMG_CoA_R_NAD	hydroxymethylglutaryl-CoA reductase, degradative
TIGR00534	OpcA	glucose-6-phosphate dehydrogenase assembly protein OpcA
TIGR00538	hemN	oxygen-independent coproporphyrinogen III oxidase
TIGR00544	lgt	prolipoprotein diacylglyceryl transferase

TIGR00546	lnt	apolipoprotein N-acyltransferase
TIGR00547	lolA	outer membrane lipoprotein carrier protein LolA
TIGR00548	lolB	outer membrane lipoprotein LolB
TIGR00549	mevalon_kin	mevalonate kinase
TIGR00550	nadA	quinolinate synthetase complex, A subunit
TIGR00551	nadB	L-aspartate oxidase
TIGR00553	pabB	aminodeoxychorismate synthase, component I
TIGR00554	panK_bact	pantothenate kinase
TIGR00555	panK_eukar	pantothenate kinase
TIGR00557	pdxA	4-hydroxythreonine-4-phosphate dehydrogenase PdxA
TIGR00558	pdxH	pyridoxamine 5'-phosphate oxidase
TIGR00559	pdxJ	pyridoxine 5'-phosphate synthase
TIGR00560	pgsA	CDP-diacylglycerol--glycerol-3-phosphate 3-phosphatidyltransferase
TIGR00561	pntA	NAD(P)(+) transhydrogenase (AB-specific), alpha subunit
TIGR00562	proto_IX_ox	protoporphyrinogen oxidase
TIGR00563	rsmB	16S rRNA (cytosine(967)-C(5))-methyltransferase
TIGR00564	trpE_most	anthranilate synthase component I
TIGR00565	trpE_proteo	anthranilate synthase component I
TIGR00568	alkb	alkylated DNA repair protein AlkB
TIGR00575	dnlj	DNA ligase, NAD-dependent
TIGR00577	fpg	DNA-formamidopyrimidine glycosylase
TIGR00580	mfd	transcription-repair coupling factor
TIGR00581	moaC	molybdenum cofactor biosynthesis protein C
TIGR00593	pola	DNA polymerase I
TIGR00595	priA	primosomal protein N'
TIGR00609	recB	exodeoxyribonuclease V, beta subunit
TIGR00612	ispG_gcpE	4-hydroxy-3-methylbut-2-en-1-yl diphosphate synthase
TIGR00613	reco	DNA repair protein RecO
TIGR00615	recR	recombination protein RecR
TIGR00628	ung	uracil-DNA glycosylase
TIGR00634	recN	DNA repair protein RecN
TIGR00635	ruvB	Holliday junction DNA helicase RuvB
TIGR00639	PurN	phosphoribosylglycinamide formyltransferase
TIGR00642	mmCoA_mut_beta	methylmalonyl-CoA mutase, small subunit
TIGR00643	recG	ATP-dependent DNA helicase RecG
TIGR00644	recJ	single-stranded-DNA-specific exonuclease RecJ

TIGR00647	DNA_bind_WhiA	DNA-binding protein WhiA
TIGR00648	recU	recombination protein U
TIGR00651	pta	phosphate acetyltransferase
TIGR00652	DapF	diaminopimelate epimerase
TIGR00653	GlnA	glutamine synthetase, type I
TIGR00655	PurU	formyltetrahydrofolate deformylase
TIGR00656	asp_kin_monofn	aspartate kinase, monofunctional class
TIGR00658	orni_carb_tr	ornithine carbamoyltransferase
TIGR00663	dnan	DNA polymerase III, beta subunit
TIGR00664	DNA_III_psi	DNA polymerase III, psi subunit
TIGR00665	DnaB	replicative DNA helicase
TIGR00666	PBP4	D-alanyl-D-alanine carboxypeptidase/D-alanyl-D-alanine-endopeptidase
TIGR00667	aat	leucyl/phenylalanyl-tRNA--protein transferase
TIGR00668	apaH	bis(5'-nucleosyl)-tetraphosphatase (symmetrical)
TIGR00669	asnA	aspartate--ammonia ligase
TIGR00670	asp_carb_tr	aspartate carbamoyltransferase
TIGR00672	cdh	CDP-diacylglycerol diphosphatase
TIGR00673	cynS	cyanase
TIGR00674	dapA	4-hydroxy-tetrahydrodipicolinate synthase
TIGR00676	fadh2	methylenetetrahydrofolate reductase [NAD(P)H]
TIGR00679	hpr-ser	HPr(Ser) kinase/phosphatase
TIGR00680	kdpA	K+-transporting ATPase, A subunit
TIGR00681	kdpC	K+-transporting ATPase, C subunit
TIGR00682	lpxK	tetraacyldisaccharide 4'-kinase
TIGR00683	nanA	N-acetylneuraminate lyase
TIGR00684	narJ	nitrate reductase molybdenum cofactor assembly chaperone
TIGR00685	T6PP	trehalose-phosphatase
TIGR00687	pyridox_kin	pyridoxal kinase
TIGR00690	rpoZ	DNA-directed RNA polymerase, omega subunit
TIGR00692	tdh	L-threonine 3-dehydrogenase
TIGR00695	uxuA	mannonate dehydratase
TIGR00700	GABAtrnsam	4-aminobutyrate transaminase
TIGR00705	SppA_67K	signal peptide peptidase SppA, 67K type
TIGR00708	cobA	cob(I)yrinic acid a,c-diamide adenosyltransferase
TIGR00713	hemL	glutamate-1-semialdehyde-2,1-aminomutase
TIGR00714	hscB	Fe-S protein assembly co-chaperone HscB
TIGR00715	precor6x_red	precorrin-6x reductase
TIGR00716	rnhC	ribonuclease HIII

TIGR00717	rpsA	ribosomal protein bS1
TIGR00718	sda_alpha	L-serine dehydratase, iron-sulfur-dependent, alpha subunit
TIGR00719	sda_beta	L-serine dehydratase, iron-sulfur-dependent, beta subunit
TIGR00720	sda_mono	L-serine ammonia-lyase
TIGR00731	bL25_bact_ctc	ribosomal protein bL25, Ctc-form
TIGR00732	dprA	DNA protecting protein DprA
TIGR00739	yajC	preprotein translocase, YajC subunit
TIGR00740	TIGR00740	tRNA (cmo5U34)-methyltransferase
TIGR00746	arcC	carbamate kinase
TIGR00749	glk	glucokinase
TIGR00750	lao	LAO/AO transport system ATPase
TIGR00751	menA	1,4-dihydroxy-2-naphthoate octaprenyltransferase
TIGR00753	undec_PP_bacA	undecaprenyl-diphosphatase UppP
TIGR00754	bfr	bacterioferritin
TIGR00755	ksgA	ribosomal RNA small subunit methyltransferase A
TIGR00759	aceE	pyruvate dehydrogenase (acetyl-transferring), homodimeric type
TIGR00760	araD	L-ribulose-5-phosphate 4-epimerase
TIGR00763	lon	endopeptidase La
TIGR00764	lon_rel	putative ATP-dependent protease
TIGR00766	TIGR00766	inner membrane protein YhjD
TIGR00767	rho	transcription termination factor Rho
TIGR00780	ccoN	cytochrome c oxidase, cbb3-type, subunit I
TIGR00781	ccoO	cytochrome c oxidase, cbb3-type, subunit II
TIGR00782	ccoP	cytochrome c oxidase, cbb3-type, subunit III
TIGR00794	kup	potassium uptake protein
TIGR00796	livcs	branched-chain amino acid transport system II carrier protein
TIGR00809	secB	protein-export chaperone SecB
TIGR00810	secG	preprotein translocase, SecG subunit
TIGR00832	acr3	arsenical-resistance protein
TIGR00838	argH	argininosuccinate lyase
TIGR00839	aspA	aspartate ammonia-lyase
TIGR00847	ccoS	cytochrome oxidase maturation protein, cbb3-type
TIGR00855	L12	ribosomal protein bL12
TIGR00856	pyrC_dimer	dihydroorotase, homodimeric type
TIGR00858	bioF	8-amino-7-oxononanoate synthase
TIGR00871	zwf	glucose-6-phosphate dehydrogenase

TIGR00872	gnd_rel	6-phosphogluconate dehydrogenase (decarboxylating)
TIGR00873	gnd	6-phosphogluconate dehydrogenase (decarboxylating)
TIGR00874	talAB	transaldolase
TIGR00875	fsa_talC_mipB	fructose-6-phosphate aldolase
TIGR00876	tal_mycobact	transaldolase
TIGR00908	2A0305	ethanolamine permease
TIGR00922	nusG	transcription termination/antitermination factor NusG
TIGR00928	purB	adenylosuccinate lyase
TIGR00936	ahcY	adenosylhomocysteinase
TIGR00938	thrB_alt	homoserine kinase
TIGR00945	tatC	twin arginine-targeting protein translocase TatC
TIGR00952	S15_bact	ribosomal protein uS15
TIGR00959	ffh	signal recognition particle protein
TIGR00962	atpA	ATP synthase F1, alpha subunit
TIGR00963	secA	preprotein translocase, SecA subunit
TIGR00964	secE_bact	preprotein translocase, SecE subunit
TIGR00965	dapD	2,3,4,5-tetrahydropyridine-2,6-dicarboxylate N-succinyltransferase
TIGR00967	3a0501s007	preprotein translocase, SecY subunit
TIGR00970	leuA_yeast	2-isopropylmalate synthase
TIGR00973	leuA_bact	2-isopropylmalate synthase
TIGR00977	citramal_synth	citramalate synthase
TIGR00979	fumC_II	fumarate hydratase, class II
TIGR00981	rpsL_bact	ribosomal protein uS12
TIGR00987	himA	integration host factor, alpha subunit
TIGR00988	hip	integration host factor, beta subunit
TIGR00997	ispZ	intracellular septation protein A
TIGR01001	metA	homoserine O-succinyltransferase
TIGR01009	rpsC_bact	ribosomal protein uS3
TIGR01011	rpsB_bact	ribosomal protein uS2
TIGR01015	hmgA	homogentisate 1,2-dioxygenase
TIGR01017	rpsD_bact	ribosomal protein uS4
TIGR01021	rpsE_bact	ribosomal protein uS5
TIGR01022	rpmJ_bact	ribosomal protein bL36
TIGR01023	rpmG_bact	ribosomal protein bL33
TIGR01024	rplS_bact	ribosomal protein bL19
TIGR01029	rpsG_bact	ribosomal protein uS7

TIGR01030	rpmH_bact	ribosomal protein bL34
TIGR01031	rpmF_bact	ribosomal protein bL32
TIGR01032	rplT_bact	ribosomal protein bL20
TIGR01034	metK	methionine adenosyltransferase
TIGR01035	hemA	glutamyl-tRNA reductase
TIGR01036	pyrD_sub2	dihydroorotate dehydrogenase (fumarate)
TIGR01039	atpD	ATP synthase F1, beta subunit
TIGR01044	rplV_bact	ribosomal protein uL22
TIGR01047	nspC	carboxynorspermidine decarboxylase
TIGR01048	lysA	diaminopimelate decarboxylase
TIGR01049	rpsJ_bact	ribosomal protein uS10
TIGR01050	rpsS_bact	ribosomal protein uS19
TIGR01051	topA_bact	DNA topoisomerase I
TIGR01055	parE_Gneg	DNA topoisomerase IV, B subunit
TIGR01058	parE_Gpos	DNA topoisomerase IV, B subunit
TIGR01059	gyrB	DNA gyrase, B subunit
TIGR01060	eno	phosphopyruvate hydratase
TIGR01061	parC_Gpos	DNA topoisomerase IV, A subunit
TIGR01062	parC_Gneg	DNA topoisomerase IV, A subunit
TIGR01063	gyrA	DNA gyrase, A subunit
TIGR01064	pyruv_kin	pyruvate kinase
TIGR01066	rplM_bact	ribosomal protein uL13
TIGR01067	rplN_bact	ribosomal protein uL14
TIGR01068	thioredoxin	thioredoxin
TIGR01070	mutS1	DNA mismatch repair protein MutS
TIGR01071	rplO_bact	ribosomal protein uL15
TIGR01072	murA	UDP-N-acetylglucosamine 1-carboxyvinyltransferase
TIGR01073	pcrA	ATP-dependent DNA helicase PcrA
TIGR01074	rep	ATP-dependent DNA helicase Rep
TIGR01075	uvrD	DNA helicase II
TIGR01078	arcA	arginine deiminase
TIGR01079	rplX_bact	ribosomal protein uL24
TIGR01081	mpl	UDP-N-acetylmuramate:L-alanyl-gamma-D-glutamyl-meso-diaminopimelate ligase
TIGR01082	murC	UDP-N-acetylmuramate--L-alanine ligase
TIGR01083	nth	endonuclease III
TIGR01084	mutY	A/G-specific adenine glycosylase
TIGR01086	fucA	L-fuculose phosphate aldolase
TIGR01087	murD	UDP-N-acetylmuramoylalanine--D-glutamate ligase
TIGR01088	aroQ	3-dehydroquinate dehydratase, type II

TIGR01089	fucI	L-fucose isomerase
TIGR01090	apt	adenine phosphoribosyltransferase
TIGR01091	upp	uracil phosphoribosyltransferase
TIGR01099	galU	UTP--glucose-1-phosphate uridylyltransferase
TIGR01102	yscR	type III secretion apparatus protein, YscR/HrcR family
TIGR01103	fliP	flagellar biosynthetic protein FliP
TIGR01104	V_PPase	V-type H(+)-translocating pyrophosphatase
TIGR01105	galF	regulatory protein GalF
TIGR01108	oadA	oxaloacetate decarboxylase alpha subunit
TIGR01110	mdcA	malonate decarboxylase, alpha subunit
TIGR01118	lacA	galactose-6-phosphate isomerase, LacA subunit
TIGR01119	lacB	galactose-6-phosphate isomerase, LacB subunit
TIGR01120	rpiB	ribose 5-phosphate isomerase B
TIGR01121	D_amino_aminoT	D-amino-acid transaminase
TIGR01122	ilvE_I	branched-chain amino acid aminotransferase
TIGR01123	ilvE_II	branched-chain amino acid aminotransferase
TIGR01124	ilvA_2Cterm	threonine ammonia-lyase, biosynthetic
TIGR01125	TIGR01125	ribosomal protein S12 methylthiotransferase RimO
TIGR01127	ilvA_1Cterm	threonine ammonia-lyase
TIGR01128	holA	DNA polymerase III, delta subunit
TIGR01131	ATP_synt_6_or_A	ATP synthase F0, A subunit
TIGR01132	pgm	phosphoglucomutase, alpha-D-glucose phosphate-specific
TIGR01133	murG	undecaprenyldiphospho-muramoylpentapeptide beta-N-acetylglucosaminyltransferase
TIGR01134	purF	amidophosphoribosyltransferase
TIGR01135	glmS	glutamine-fructose-6-phosphate transaminase (isomerizing)
TIGR01137	cysta_beta	cystathionine beta-synthase
TIGR01138	cysM	cysteine synthase B
TIGR01139	cysK	cysteine synthase A
TIGR01140	L_thr_O3P_dcar	threonine-phosphate decarboxylase
TIGR01141	hisC	histidinol-phosphate transaminase
TIGR01142	purT	phosphoribosylglycinamide formyltransferase 2
TIGR01144	ATP_synt_b	ATP synthase F0, B subunit
TIGR01145	ATP_synt_delta	ATP synthase F1, delta subunit
TIGR01146	ATPsyn_F1gamma	ATP synthase F1, gamma subunit
TIGR01163	rpe	ribulose-phosphate 3-epimerase
TIGR01164	rplP_bact	ribosomal protein uL16

TIGR01169	rplA_bact	ribosomal protein uL1
TIGR01171	rplB_bact	ribosomal protein uL2
TIGR01172	cysE	serine O-acetyltransferase
TIGR01173	glmU	UDP-N-acetylglucosamine diphosphorylase/glucosamine-1-phosphate N-acetyltransferase
TIGR01174	ftsA	cell division protein FtsA
TIGR01176	fum_red_Fp	fumarate reductase (quinol), flavoprotein subunit
TIGR01178	ade	adenine deaminase
TIGR01179	galE	UDP-glucose 4-epimerase GalE
TIGR01181	dTDP_gluc_dehyt	dTDP-glucose 4,6-dehydratase
TIGR01196	edd	phosphogluconate dehydratase
TIGR01202	bchC	chlorophyll synthesis pathway protein BchC
TIGR01203	HGPRTase	hypoxanthine phosphoribosyltransferase
TIGR01207	rmlA	glucose-1-phosphate thymidylyltransferase
TIGR01208	rmlA_long	glucose-1-phosphate thymidylyltransferase
TIGR01214	rmlD	dTDP-4-dehydrorhamnose reductase
TIGR01215	minE	cell division topological specificity factor MinE
TIGR01216	ATP_synt_epsi	ATP synthase F1, epsilon subunit
TIGR01217	ac_ac_CoA_syn	acetoacetate-CoA ligase
TIGR01220	Pmev_kin_Gr_pos	phosphomevalonate kinase
TIGR01221	rmlC	dTDP-4-dehydrorhamnose 3,5-epimerase
TIGR01222	minC	septum site-determining protein MinC
TIGR01224	hutI	imidazolonepropionase
TIGR01225	hutH	histidine ammonia-lyase
TIGR01227	hutG	formimidoylglutamase
TIGR01228	hutU	urocanate hydratase
TIGR01229	rocF_arginase	arginase
TIGR01230	agmatinase	agmatinase
TIGR01231	lacC	tagatose-6-phosphate kinase
TIGR01232	lacD	tagatose 1,6-diphosphate aldolase
TIGR01233	lacG	6-phospho-beta-galactosidase
TIGR01234	L-ribulokinase	ribulokinase
TIGR01235	pyruv_carbox	pyruvate carboxylase
TIGR01236	D1pyr5carbox1	1-pyrroline-5-carboxylate dehydrogenase
TIGR01237	D1pyr5carbox2	putative delta-1-pyrroline-5-carboxylate dehydrogenase
TIGR01239	galT_2	galactose-1-phosphate uridylyltransferase
TIGR01240	mevDPdecarb	diphosphomevalonate decarboxylase
TIGR01246	dapE_proteo	succinyl-diaminopimelate desuccinylase

TIGR01249	pro_imino_pep_1	prolyl aminopeptidase
TIGR01252	acetolac_decarb	alpha-acetolactate decarboxylase
TIGR01255	pyr_form_ly_1	formate acetyltransferase
TIGR01260	ATP_synt_c	ATP synthase F0, C subunit
TIGR01262	maiA	maleylacetoacetate isomerase
TIGR01263	4HPPD	4-hydroxyphenylpyruvate dioxygenase
TIGR01266	fum_ac_acetase	fumarylacetoacetase
TIGR01267	Phe4hydrox_mono	phenylalanine-4-hydroxylase
TIGR01273	speA	arginine decarboxylase
TIGR01280	xseB	exodeoxyribonuclease VII, small subunit
TIGR01292	TRX_reduct	thioredoxin-disulfide reductase
TIGR01296	asd_B	aspartate-semialdehyde dehydrogenase
TIGR01298	RNaseT	ribonuclease T
TIGR01302	IMP_dehydrog	inosine-5'-monophosphate dehydrogenase
TIGR01305	GMP_reduct_1	guanosine monophosphate reductase
TIGR01306	GMP_reduct_2	guanosine monophosphate reductase
TIGR01307	pgm_bpd_ind	phosphoglycerate mutase (2,3-diphosphoglycerate-independent)
TIGR01308	rpmD_bact	ribosomal protein uL30
TIGR01311	glycerol_kin	glycerol kinase
TIGR01312	XylB	xylulokinase
TIGR01314	gntK_FGGY	gluconate kinase
TIGR01320	mal_quin_oxido	malate dehydrogenase (acceptor)
TIGR01321	TrpR	trp operon repressor
TIGR01324	cysta_beta_ly_B	cystathionine beta-lyase
TIGR01325	O_suc_HS_sulf	O-succinylhomoserine sulfhydrylase
TIGR01327	PGDH	phosphoglycerate dehydrogenase
TIGR01331	bisphos_cysQ	3'(2'),5'-bisphosphate nucleotidase
TIGR01341	aconitase_1	aconitate hydratase 1
TIGR01344	malate_syn_A	malate synthase A
TIGR01345	malate_syn_G	malate synthase G
TIGR01346	isocit_lyase	isocitrate lyase
TIGR01347	sucB	dihydrolipoyllysine-residue succinyltransferase, E2 component of oxoglutarate dehydrogenase (succinyl-transferring) complex
TIGR01348	PDHac_trf_long	dihydrolipoyllysine-residue acetyltransferase
TIGR01349	PDHac_trf_mito	pyruvate dehydrogenase complex dihydrolipoamide acetyltransferase
TIGR01350	lipoamide_DH	dihydrolipoyl dehydrogenase
TIGR01354	cyt_deam_tetra	cytidine deaminase

TIGR01355	cyt_deam_dimer	cytidine deaminase
TIGR01356	aroA	3-phosphoshikimate 1-carboxyvinyltransferase
TIGR01357	aroB	3-dehydroquinate synthase
TIGR01358	DAHP_synth_II	3-deoxy-7-phosphoheptulonate synthase
TIGR01362	KDO8P_synth	3-deoxy-8-phosphooctulonate synthase
TIGR01364	serC_1	phosphoserine transaminase
TIGR01366	serC_3	putative phosphoserine aminotransferase
TIGR01371	met_syn_B12ind	5-methyltetrahydropteroyltriglutamate--homocysteine S-methyltransferase
TIGR01378	thi_PPkinase	thiamine pyrophosphokinase
TIGR01379	thiL	thiamine-phosphate kinase
TIGR01380	glut_syn	glutathione synthase
TIGR01388	rnd	ribonuclease D
TIGR01389	recQ	ATP-dependent DNA helicase RecQ
TIGR01390	CycNucDiestase	2',3'-cyclic-nucleotide 2'-phosphodiesterase
TIGR01392	homoserO_Ac_trn	homoserine O-acetyltransferase
TIGR01393	lepA	elongation factor 4
TIGR01394	TypA_BipA	GTP-binding protein TypA/BipA
TIGR01395	FlgC	flagellar basal-body rod protein FlgC
TIGR01396	FlgB	flagellar basal-body rod protein FlgB
TIGR01397	fliM_switch	flagellar motor switch protein FliM
TIGR01398	FlhA	flagellar biosynthesis protein FlhA
TIGR01400	fliR	flagellar biosynthetic protein FliR
TIGR01401	fliR_like_III	type III secretion apparatus protein SpaR/YscT/HrcT
TIGR01402	fliQ	flagellar biosynthetic protein FliQ
TIGR01405	polC_Gram_pos	DNA polymerase III, alpha subunit, Gram-positive type
TIGR01406	dnaQ_proteo	DNA polymerase III, epsilon subunit
TIGR01410	tatB	twin arginine-targeting protein translocase TatB
TIGR01416	Rieske_proteo	ubiquinol-cytochrome c reductase, iron-sulfur subunit
TIGR01418	PEP_synth	phosphoenolpyruvate synthase
TIGR01419	nitro_reg_IIA	PTS IIA-like nitrogen-regulatory protein PtsN
TIGR01421	gluta_reduc_1	glutathione-disulfide reductase
TIGR01422	phosphonatase	phosphonoacetaldehyde hydrolase
TIGR01424	gluta_reduc_2	glutathione-disulfide reductase
TIGR01428	HAD_type_II	haloacid dehalogenase, type II
TIGR01430	aden_deam	adenosine deaminase
TIGR01432	QOXA	cytochrome aa3 quinol oxidase, subunit II
TIGR01433	CyoA	ubiquinol oxidase, subunit II

TIGR01434	glu_cys_ligase	glutamate--cysteine ligase
TIGR01436	glu_cys_lig_pln	glutamate--cysteine ligase
TIGR01447	recD	exodeoxyribonuclease V, alpha subunit
TIGR01449	PGP_bact	phosphoglycolate phosphatase, bacterial
TIGR01450	recC	exodeoxyribonuclease V, gamma subunit
TIGR01455	glmM	phosphoglucosamine mutase
TIGR01461	greB	transcription elongation factor GreB
TIGR01464	hemE	uroporphyrinogen decarboxylase
TIGR01465	cobM_cbiF	precorrin-4 C11-methyltransferase
TIGR01467	cobI_cbiL	precorrin-2 C(20)-methyltransferase
TIGR01472	gmd	GDP-mannose 4,6-dehydratase
TIGR01473	cyoE_ctaB	protoheme IX farnesyltransferase
TIGR01474	ubiA_proteo	4-hydroxybenzoate polyprenyl transferase
TIGR01479	GMP_PMI	mannose-1-phosphate guanylyltransferase/mannose-6-phosphate isomerase
TIGR01481	ccpA	catabolite control protein A
TIGR01496	DHPS	dihydropteroate synthase
TIGR01497	kdpB	K+-transporting ATPase, B subunit
TIGR01498	folK	2-amino-4-hydroxy-6-hydroxymethyldihydropteridine diphosphokinase
TIGR01504	glyox_carbo_lig	glyoxylate carboligase
TIGR01505	tartro_sem_red	2-hydroxy-3-oxopropionate reductase
TIGR01510	coaD_prev_kdtB	pantetheine-phosphate adenylyltransferase
TIGR01511	ATPase-IB1_Cu	copper-translocating P-type ATPase
TIGR01512	ATPase-IB2_Cd	cadmium-translocating P-type ATPase
TIGR01514	NAPRTase	nicotinate phosphoribosyltransferase
TIGR01515	branching_enzym	1,4-alpha-glucan branching enzyme
TIGR01517	ATPase-IIB_Ca	calcium-translocating P-type ATPase, PMCA-type
TIGR01518	g3p_cytidyltrns	glycerol-3-phosphate cytidylyltransferase
TIGR01520	FruBisAldo_II_A	fructose-bisphosphate aldolase, class II
TIGR01521	FruBisAldo_II_B	fructose-bisphosphate aldolase, class II, Calvin cycle subtype
TIGR01523	ATPase-IID_K-Na	potassium/sodium efflux P-type ATPase, fungal-type
TIGR01524	ATPase-IIIB_Mg	magnesium-translocating P-type ATPase
TIGR01529	argR_whole	arginine repressor
TIGR01532	E4PD_g-proteo	erythrose-4-phosphate dehydrogenase
TIGR01533	lipo_e_P4	5'-nucleotidase, lipoprotein e(P4) family
TIGR01534	GAPDH-I	glyceraldehyde-3-phosphate dehydrogenase, type I
TIGR01536	asn_synth_AEB	asparagine synthase (glutamine-hydrolyzing)

TIGR01553	formate-DH-alph	formate dehydrogenase-N alpha subunit
TIGR01562	FdhE	formate dehydrogenase accessory protein FdhE
TIGR01573	cas2	CRISPR-associated endonuclease Cas2
TIGR01574	miaB-methiolase	tRNA-i(6)A37 thiotransferase enzyme MiaB
TIGR01575	rimI	ribosomal-protein-alanine acetyltransferase
TIGR01580	narG	nitrate reductase, alpha subunit
TIGR01582	FDH-beta	formate dehydrogenase, beta subunit
TIGR01583	formate-DH-gamm	formate dehydrogenase, gamma subunit
TIGR01584	citF	citrate lyase, alpha subunit
TIGR01588	citE	citrate (pro-3S)-lyase, beta subunit
TIGR01591	Fdh-alpha	formate dehydrogenase, alpha subunit
TIGR01608	citD	citrate lyase acyl carrier protein
TIGR01632	L11_bact	ribosomal protein uL11
TIGR01660	narH	nitrate reductase, beta subunit
TIGR01682	moaD	molybdopterin converting factor, subunit 1
TIGR01683	thiS	thiamine biosynthesis protein ThiS
TIGR01688	dltC	D-alanine--poly(phosphoribitol) ligase, subunit 2
TIGR01691	enolase-ppase	2,3-diketo-5-methylthio-1-phosphopentane phosphatase
TIGR01692	HIBADH	3-hydroxyisobutyrate dehydrogenase
TIGR01693	UTase_glnD	protein-P-II uridylyltransferase
TIGR01694	MTAP	methylthioadenosine phosphorylase
TIGR01695	murJ_mviN	murein biosynthesis integral membrane protein MurJ
TIGR01696	deoB	phosphopentomutase
TIGR01700	PNPH	purine nucleoside phosphorylase I, inosine and guanosine-specific
TIGR01703	hybrid_clust	hydroxylamine reductase
TIGR01704	MTA/SAH-Nsdase	MTA/SAH nucleosidase
TIGR01706	NAPA	periplasmic nitrate reductase, large subunit
TIGR01707	gspI	type II secretion system protein I
TIGR01708	typeII_sec_gspH	type II secretion system protein H
TIGR01709	typeII_sec_gspL	type II secretion system protein L
TIGR01710	typeII_sec_gspG	type II secretion system protein G
TIGR01711	gspJ	type II secretion system protein J
TIGR01713	typeII_sec_gspC	type II secretion system protein C
TIGR01717	AMP-nucleosdse	AMP nucleosidase
TIGR01718	Uridine-psphlse	uridine phosphorylase
TIGR01722	MMSDH	methylmalonate-semialdehyde dehydrogenase (acylating)

TIGR01734	D-ala-DACP-lig	D-alanine--poly(phosphoribitol) ligase, subunit 1
TIGR01735	FGAM_synt	phosphoribosylformylglycinamidine synthase
TIGR01736	FGAM_synth_II	phosphoribosylformylglycinamidine synthase II
TIGR01737	FGAM_synth_I	phosphoribosylformylglycinamidine synthase I
TIGR01738	bioH	pimelyl-[acyl-carrier protein] methyl ester esterase
TIGR01743	purR_Bsub	pur operon repressor PurR
TIGR01744	XPRTase	xanthine phosphoribosyltransferase
TIGR01745	asd_gamma	aspartate-semialdehyde dehydrogenase
TIGR01748	rhaA	L-rhamnose isomerase
TIGR01749	fabA	beta-hydroxyacyl-(acyl-carrier-protein) dehydratase FabA
TIGR01750	fabZ	beta-hydroxyacyl-(acyl-carrier-protein) dehydratase FabZ
TIGR01752	flav_long	flavodoxin
TIGR01753	flav_short	flavodoxin
TIGR01755	flav_wrbA	NAD(P)H:quinone oxidoreductase, type IV
TIGR01763	MalateDH_bact	malate dehydrogenase, NAD-dependent
TIGR01771	L-LDH-NAD	L-lactate dehydrogenase
TIGR01772	MDH_euk_gproteo	malate dehydrogenase, NAD-dependent
TIGR01773	GABAperm	GABA permease
TIGR01779	TonB-B12	TonB-dependent vitamin B12 receptor
TIGR01788	Glu-decarb-GAD	glutamate decarboxylase
TIGR01792	urease_alph	urease, alpha subunit
TIGR01798	cit_synth_I	citrate (Si)-synthase
TIGR01804	BADH	betaine-aldehyde dehydrogenase
TIGR01806	CM_mono2	putative chorismate mutase
TIGR01810	betA	choline dehydrogenase
TIGR01814	kynureninase	kynureninase
TIGR01816	sdhA_forward	succinate dehydrogenase, flavoprotein subunit
TIGR01818	ntrC	nitrogen regulation protein NR(I)
TIGR01819	F420_cofD	2-phospho-L-lactate transferase
TIGR01822	2am3keto_CoA	glycine C-acetyltransferase
TIGR01828	pyru_phos_dikin	pyruvate, phosphate dikinase
TIGR01830	3oxo_ACP_reduc	3-oxoacyl-[acyl-carrier-protein] reductase
TIGR01832	kduD	2-deoxy-D-gluconate 3-dehydrogenase
TIGR01835	HMG-CoA-S_prok	hydroxymethylglutaryl-CoA synthase
TIGR01848	PHA_reg_PhaR	polyhydroxyalkanoate synthesis repressor PhaR
TIGR01850	argC	N-acetyl-gamma-glutamyl-phosphate reductase
TIGR01852	lipid_A_lpxA	acyl-[acyl-carrier-protein]-UDP-N-acetylglucosamine O-acyltransferase

TIGR01853	lipid_A_lpxD	UDP-3-O-[3-hydroxymyristoyl] glucosamine N-acyltransferase LpxD
TIGR01854	lipid_A_lpxH	UDP-2,3-diacylglucosamine diphosphatase
TIGR01855	IMP_synth_hisH	imidazole glycerol phosphate synthase, glutamine amidotransferase subunit
TIGR01858	tag_bisphos_ald	class II aldolase, tagatose bisphosphate family
TIGR01859	fruc_bis_ald_	fructose-1,6-bisphosphate aldolase, class II
TIGR01868	casD_Cas5e	CRISPR-associated protein Cas5/CasD, subtype I-E/ECOLI
TIGR01873	cas_CT1978	CRISPR-associated endoribonuclease Cas2, subtype I-E/ECOLI
TIGR01882	peptidase-T	peptidase T
TIGR01885	Orn_aminotrans	ornithine--oxo-acid transaminase
TIGR01890	N-Ac-Glu-synth	amino-acid N-acetyltransferase
TIGR01892	AcOrn-deacetyl	acetylornithine deacetylase (ArgE)
TIGR01907	casE_Cse3	CRISPR-associated protein Cas6/Cse3/CasE, subtype I-E/ECOLI
TIGR01916	F420_cofE	coenzyme F420-0:L-glutamate ligase
TIGR01923	menE	O-succinylbenzoate-CoA ligase
TIGR01924	rsbW_low_gc	anti-sigma B factor
TIGR01927	menC_gamma/gm+	o-succinylbenzoate synthase
TIGR01928	menC_lowGC/arch	o-succinylbenzoate synthase
TIGR01929	menB	naphthoate synthase
TIGR01931	cysJ	sulfite reductase [NADPH] flavoprotein, alpha-component
TIGR01932	hflC	HflC protein
TIGR01933	hflK	HflK protein
TIGR01936	nqrA	NADH:ubiquinone oxidoreductase, Na(+)-translocating, A subunit
TIGR01937	nqrB	NADH:ubiquinone oxidoreductase, Na(+)-translocating, B subunit
TIGR01938	nqrC	NADH:ubiquinone oxidoreductase, Na(+)-translocating, C subunit
TIGR01939	nqrD	NADH:ubiquinone oxidoreductase, Na(+)-translocating, D subunit
TIGR01940	nqrE	NADH:ubiquinone oxidoreductase, Na(+)-translocating, E subunit
TIGR01941	nqrF	NADH:ubiquinone oxidoreductase, Na(+)-translocating, F subunit
TIGR01950	SoxR	redox-sensitive transcriptional activator SoxR
TIGR01951	nusB	transcription antitermination factor NusB

TIGR01955	RfaH	transcription elongation factor/antiterminator RfaH
TIGR01959	nuoF_fam	NADH oxidoreductase (quinone), F subunit
TIGR01966	RNasePH	ribonuclease PH
TIGR01967	DEAH_box_HrpA	RNA helicase HrpA
TIGR01968	minD_bact	septum site-determining protein MinD
TIGR01970	DEAH_box_HrpB	ATP-dependent helicase HrpB
TIGR01973	NuoG	NADH dehydrogenase (quinone), G subunit
TIGR01975	isoAsp_dipep	beta-aspartyl peptidase
TIGR01978	sufC	FeS assembly ATPase SufC
TIGR01980	sufB	FeS assembly protein SufB
TIGR01981	sufD	FeS assembly protein SufD
TIGR01982	UbiB	2-polyprenylphenol 6-hydroxylase
TIGR01983	UbiG	3-demethylubiquinone-9 3-O-methyltransferase
TIGR01984	UbiH	2-polyprenyl-6-methoxyphenol 4-hydroxylase
TIGR01990	bPGM	beta-phosphoglucomutase
TIGR01991	HscA	Fe-S protein assembly chaperone HscA
TIGR01994	SUF_scaf_2	SUF system FeS assembly protein, NifU family
TIGR01997	sufA_proteo	FeS assembly scaffold SufA
TIGR02006	IscS	cysteine desulfurase IscS
TIGR02007	fdx_isc	ferredoxin, 2Fe-2S type, ISC system
TIGR02010	IscR	iron-sulfur cluster assembly transcription factor IscR
TIGR02011	IscA	iron-sulfur cluster assembly protein IscA
TIGR02012	tigrfam_recA	protein RecA
TIGR02013	rpoB	DNA-directed RNA polymerase, beta subunit
TIGR02017	hutG_amidohyd	N-formylglutamate deformylase
TIGR02018	his_ut_repres	histidine utilization repressor
TIGR02022	hutF	formiminoglutamate deiminase
TIGR02027	rpoA	DNA-directed RNA polymerase, alpha subunit
TIGR02033	D-hydantoinase	dihydropyrimidinase
TIGR02035	D_Ser_am_lyase	D-serine ammonia-lyase
TIGR02036	dsdC	D-serine deaminase transcriptional activator
TIGR02038	protease_degS	periplasmic serine peptidase DegS
TIGR02041	CysI	sulfite reductase (NADPH) hemoprotein, beta-component
TIGR02043	ZntR	Zn(II)-responsive transcriptional regulator
TIGR02044	CueR	Cu(I)-responsive transcriptional regulator
TIGR02057	PAPS_reductase	phosphoadenosine phosphosulfate reductase
TIGR02062	RNase_B	exoribonuclease II
TIGR02063	RNase_R	ribonuclease R
TIGR02067	his_9_HisN	histidinol-phosphatase

TIGR02070	mono_pep_trsgly	monofunctional biosynthetic peptidoglycan transglycosylase
TIGR02071	PBP_1b	penicillin-binding protein 1B
TIGR02072	BioC	malonyl-acyl carrier protein O-methyltransferase BioC
TIGR02073	PBP_1c	penicillin-binding protein 1C
TIGR02075	pyrH_bact	UMP kinase
TIGR02079	THD1	threonine dehydratase
TIGR02080	O_succ_thio_ly	O-succinylhomoserine (thiol)-lyase
TIGR02081	metW	methionine biosynthesis protein MetW
TIGR02082	metH	methionine synthase
TIGR02085	meth_trns_rumB	23S rRNA (uracil-5-)-methyltransferase RumB
TIGR02089	TTC	tartrate dehydrogenase
TIGR02091	glgC	glucose-1-phosphate adenylyltransferase
TIGR02100	glgX_debranch	glycogen debranching enzyme GlgX
TIGR02105	III_needle	type III secretion apparatus needle protein
TIGR02106	cyd_oper_ybgT	cyd operon protein YbgT
TIGR02108	PQQ_syn_pqqB	coenzyme PQQ biosynthesis protein B
TIGR02109	PQQ_syn_pqqE	coenzyme PQQ biosynthesis enzyme PqqE
TIGR02111	PQQ_syn_pqqC	coenzyme PQQ biosynthesis protein C
TIGR02112	cyd_oper_ybgE	cyd operon protein YbgE
TIGR02115	potass_kdpF	K+-transporting ATPase, F subunit
TIGR02116	toxin_Txe_YoeB	addiction module toxin, Txe/YoeB family
TIGR02120	GspF	type II secretion system protein F
TIGR02124	hypE	hydrogenase expression/formation protein HypE
TIGR02125	CytB-hydogenase	Ni/Fe-hydrogenase, b-type cytochrome subunit
TIGR02127	pyrF_sub2	orotidine 5'-phosphate decarboxylase
TIGR02134	transald_staph	transaldolase
TIGR02135	phoU_full	phosphate transport system regulatory protein PhoU
TIGR02143	trmA_only	tRNA (uracil(54)-C(5))-methyltransferase
TIGR02150	IPP_isom_1	isopentenyl-diphosphate delta-isomerase
TIGR02151	IPP_isom_2	isopentenyl-diphosphate delta-isomerase, type 2
TIGR02152	D_ribokin_bact	ribokinase
TIGR02154	PhoB	phosphate regulon transcriptional regulatory protein PhoB
TIGR02155	PA_CoA_ligase	phenylacetate-CoA ligase
TIGR02159	PA_CoA_Oxy4	phenylacetate-CoA oxygenase, PaaJ subunit
TIGR02162	torC	trimethylamine-N-oxide reductase c-type cytochrome TorC

TIGR02164	torA	trimethylamine-N-oxide reductase TorA
TIGR02168	SMC_prok_B	chromosome segregation protein SMC
TIGR02170	thyX	thymidylate synthase, flavin-dependent
TIGR02176	pyruv_ox_red	pyruvate:ferredoxin (flavodoxin) oxidoreductase
TIGR02181	GRX_bact	glutaredoxin 3
TIGR02182	GRXB	glutaredoxin, GrxB family
TIGR02183	GRXA	glutaredoxin, GrxA family
TIGR02188	Ac_CoA_lig_AcsA	acetate--CoA ligase
TIGR02191	RNaseIII	ribonuclease III
TIGR02193	heptsyl_trn_I	lipopolysaccharide heptosyltransferase I
TIGR02195	heptsyl_trn_II	lipopolysaccharide heptosyltransferase II
TIGR02197	heptose_epim	ADP-glyceromanno-heptose 6-epimerase
TIGR02201	heptsyl_trn_III	putative lipopolysaccharide heptosyltransferase III
TIGR02203	MsbA_lipidA	lipid A export permease/ATP-binding protein MsbA
TIGR02205	septum_zipA	cell division protein ZipA
TIGR02208	lipid_A_msbB	lipid A biosynthesis (KDO)2-(lauroyl)-lipid IVA acyltransferase
TIGR02209	ftsL_broad	cell division protein FtsL
TIGR02210	rodA_shape	rod shape-determining protein RodA
TIGR02211	LolD_lipo_ex	lipoprotein releasing system, ATP-binding protein
TIGR02213	lolE_release	lipoprotein releasing system, transmembrane protein LolE
TIGR02223	ftsN	cell division protein FtsN
TIGR02224	recomb_XerC	tyrosine recombinase XerC
TIGR02225	recomb_XerD	tyrosine recombinase XerD
TIGR02227	sigpep_I_bact	signal peptidase I
TIGR02248	mutH_TIGR	DNA mismatch repair endonuclease MutH
TIGR02254	YjjG/YfnB	noncanonical pyrimidine nucleotidase, YjjG family
TIGR02257	cobalto_cobN	cobaltochelatase, CobN subunit
TIGR02258	2_5_ligase	2'-5' RNA ligase
TIGR02272	gentisate_1_2	gentisate 1,2-dioxygenase
TIGR02273	16S_RimM	16S rRNA processing protein RimM
TIGR02274	dCTP_deam	deoxycytidine triphosphate deaminase
TIGR02275	DHB_AMP_lig	(2,3-dihydroxybenzoyl)adenylate synthase
TIGR02278	PaaN-DH	phenylacetic acid degradation protein paaN
TIGR02280	PaaB1	phenylacetate degradation probable enoyl-CoA hydratase PaaB
TIGR02282	MltB	lytic murein transglycosylase B
TIGR02286	PaaD	phenylacetic acid degradation protein PaaD
TIGR02296	HpaC	4-hydroxyphenylacetate 3-monooxygenase,

		reductase component
TIGR02297	HpaA	4-hydroxyphenylacetate catabolism regulatory protein HpaA
TIGR02298	HpaD_Fe	3,4-dihydroxyphenylacetate 2,3-dioxygenase
TIGR02299	HpaE	5-carboxymethyl-2-hydroxymuconate semialdehyde dehydrogenase
TIGR02310	HpaB-2	4-hydroxyphenylacetate 3-monooxygenase, oxygenase component
TIGR02311	HpaI	2,4-dihydroxyhept-2-ene-1,7-dioic acid aldolase
TIGR02312	HpaH	2-oxo-hepta-3-ene-1,7-dioic acid hydratase
TIGR02316	propion_prpE	propionate--CoA ligase
TIGR02317	prpB	methylisocitrate lyase
TIGR02318	phosphono_phnM	phosphonate metabolism protein PhnM
TIGR02322	phosphon_PhnN	phosphonate metabolism protein/1,5-bisphosphokinase (PRPP-forming) PhnN
TIGR02323	CP_lyasePhnK	phosphonate C-P lyase system protein PhnK
TIGR02324	CP_lyasePhnL	phosphonate C-P lyase system protein PhnL
TIGR02325	C_P_lyase_phnF	phosphonate metabolism transcriptional regulator PhnF
TIGR02326	transamin_PhnW	2-aminoethylphosphonate--pyruvate transaminase
TIGR02329	propionate_PrpR	propionate catabolism operon regulatory protein PrpR
TIGR02330	prpD	2-methylcitrate dehydratase
TIGR02332	HpaX	4-hydroxyphenylacetate permease
TIGR02333	2met_isocit_dHY	2-methylisocitrate dehydratase, Fe/S-dependent
TIGR02334	prpF	probable AcnD-accessory protein PrpF
TIGR02337	HpaR	homoprotocatechuate degradation operon regulator, HpaR
TIGR02348	GroEL	chaperonin GroL
TIGR02349	DnaJ_bact	chaperone protein DnaJ
TIGR02350	prok_dnaK	chaperone protein DnaK
TIGR02351	thiH	thiazole biosynthesis protein ThiH
TIGR02352	thiamin_ThiO	glycine oxidase ThiO
TIGR02355	moeB	molybdopterin synthase sulfurylase MoeB
TIGR02356	adenyl_thiF	thiazole biosynthesis adenylyltransferase ThiF
TIGR02360	pbenz_hydroxyl	4-hydroxybenzoate 3-monooxygenase
TIGR02363	dhaK1	dihydroxyacetone kinase, DhaK subunit
TIGR02365	dha_L_ycgS	dihydroxyacetone kinase, L subunit
TIGR02380	ECA_wecA	undecaprenyl-phosphate alpha-N-acetylglucosaminyl 1-phosphatetransferase
TIGR02381	cspD	cold shock domain protein CspD

TIGR02382	wecD_rffC	TDP-D-fucosamine acetyltransferase
TIGR02383	Hfq	RNA chaperone Hfq
TIGR02386	rpoC_TIGR	DNA-directed RNA polymerase, beta' subunit
TIGR02392	rpoH_proteo	alternative sigma factor RpoH
TIGR02394	rpoS_proteo	RNA polymerase sigma factor RpoS
TIGR02395	rpoN_sigma	RNA polymerase sigma-54 factor
TIGR02397	dnaX_nterm	DNA polymerase III, subunit gamma and tau
TIGR02400	trehalose_OtsA	alpha,alpha-trehalose-phosphate synthase (UDP-forming)
TIGR02401	trehalose_TreY	malto-oligosyltrehalose synthase
TIGR02402	trehalose_TreZ	malto-oligosyltrehalose trehalohydrolase
TIGR02403	trehalose_treC	alpha,alpha-phosphotrehalase
TIGR02404	trehalos_R_Bsub	trehalose operon repressor
TIGR02405	trehalos_R_Ecol	trehalose operon repressor
TIGR02412	pepN_strep_liv	aminopeptidase N
TIGR02414	pepN_proteo	aminopeptidase N
TIGR02418	acolac_catab	acetolactate synthase, catabolic
TIGR02420	dksA	RNA polymerase-binding protein DksA
TIGR02422	protocat_beta	protocatechuate 3,4-dioxygenase, beta subunit
TIGR02423	protocat_alph	protocatechuate 3,4-dioxygenase, alpha subunit
TIGR02425	decarb_PcaC	4-carboxymuconolactone decarboxylase
TIGR02426	protocat_pcaB	3-carboxy-cis,cis-muconate cycloisomerase
TIGR02427	protocat_pcaD	3-oxoadipate enol-lactonase
TIGR02430	pcaF	3-oxoadipyl-CoA thiolase
TIGR02435	CobG	precorrin-3B synthase
TIGR02437	FadB	fatty oxidation complex, alpha subunit FadB
TIGR02440	FadJ	fatty oxidation complex, alpha subunit FadJ
TIGR02445	fadA	acetyl-CoA C-acyltransferase FadA
TIGR02446	FadI	acetyl-CoA C-acyltransferase FadI
TIGR02473	flagell_FliJ	flagellar export protein FliJ
TIGR02475	CobW	cobalamin biosynthesis protein CobW
TIGR02476	BluB	5,6-dimethylbenzimidazole synthase
TIGR02482	PFKA_ATP	6-phosphofructokinase
TIGR02487	NrdD	anaerobic ribonucleoside-triphosphate reductase
TIGR02488	flgG_G_neg	flagellar basal-body rod protein FlgG
TIGR02490	flgF	flagellar basal-body rod protein FlgF
TIGR02491	NrdG	anaerobic ribonucleoside-triphosphate reductase activating protein
TIGR02492	flgK_ends	flagellar hook-associated protein FlgK
TIGR02493	PFLA	pyruvate formate-lyase 1-activating enzyme

TIGR02499	HrpE_YscL_not	type III secretion apparatus protein, HrpE/YscL family
TIGR02500	type_III_yscD	type III secretion apparatus protein, YscD/HrpQ family
TIGR02504	NrdJ_Z	ribonucleoside-diphosphate reductase, adenosylcobalamin-dependent
TIGR02506	NrdE_NrdA	ribonucleoside-diphosphate reductase, alpha subunit
TIGR02516	type_III_yscC	type III secretion outer membrane pore, YscC/HrcC family
TIGR02517	type_II_gspD	type II secretion system protein D
TIGR02521	type_IV_pilW	type IV pilus biogenesis/stability protein PilW
TIGR02523	type_IV_pilV	type IV pilus modification protein PilV
TIGR02528	EutP	ethanolamine utilization protein, EutP
TIGR02533	type_II_gspE	type II secretion system protein E
TIGR02538	type_IV_pilB	type IV-A pilus assembly ATPase PilB
TIGR02541	flagell_FlgJ	flagellar rod assembly protein/muramidase FlgJ
TIGR02544	III_secr_YscJ	type III secretion apparatus lipoprotein, YscJ/HrcJ family
TIGR02546	III_secr_ATP	type III secretion apparatus H+-transporting two-sector ATPase
TIGR02547	casA_cse1	CRISPR type I-E/ECOLI-associated protein CasA/Cse1
TIGR02548	casB_cse2	CRISPR type I-E/ECOLI-associated protein CasB/Cse2
TIGR02550	flagell_flgL	flagellar hook-associated protein 3
TIGR02551	SpaO_YscQ	type III secretion apparatus protein, YscQ/HrcQ family
TIGR02552	LcrH_SycD	type III secretion low calcium response chaperone LcrH/SycD
TIGR02568	LcrE	type III secretion regulator YopN/LcrE/InvE/MxiC
TIGR02571	ComEB	ComE operon protein 2
TIGR02607	antidote_HigA	addiction module antidote protein, HigA family
TIGR02614	ftsW	cell division protein FtsW
TIGR02622	CDP_4_6_dhtase	CDP-glucose 4,6-dehydratase
TIGR02623	G1P_cyt_trans	glucose-1-phosphate cytidylyltransferase
TIGR02624	rhamnu_1P_ald	rhamnulose-1-phosphate aldolase
TIGR02625	YiiL_rotase	L-rhamnose mutarotase
TIGR02627	rhamnulo_kin	rhamnulokinase
TIGR02628	fuculo_kin_coli	L-fuculokinase
TIGR02630	xylose_isom_A	xylose isomerase
TIGR02636	galM_Leloir	galactose mutarotase
TIGR02638	lactal_redase	lactaldehyde reductase

TIGR02639	ClpA	ATP-dependent Clp protease ATP-binding subunit ClpA
TIGR02643	T_phosphoryl	thymidine phosphorylase
TIGR02648	rep_term_tus	DNA replication terminus site-binding protein
TIGR02651	RNase_Z	ribonuclease Z
TIGR02665	molyb_mobA	molybdenum cofactor guanylyltransferase
TIGR02666	moaA	molybdenum cofactor biosynthesis protein A
TIGR02667	moaB_proteo	molybdenum cofactor biosynthesis protein B
TIGR02673	FtsE	cell division ATP-binding protein FtsE
TIGR02690	resist_ArsH	arsenical resistance protein ArsH
TIGR02691	arsC_pI258_fam	arsenate reductase (thioredoxin)
TIGR02692	tRNA_CCA_actino	CCA tRNA nucleotidyltransferase
TIGR02705	nudix_YtkD	nucleoside triphosphatase YtkD
TIGR02713	allophanate_hyd	allophanate hydrolase
TIGR02720	pyruv_oxi_spxB	pyruvate oxidase
TIGR02721	ycfN_thiK	thiamine kinase
TIGR02727	MTHFS_bact	5-formyltetrahydrofolate cyclo-ligase
TIGR02729	Obg_CgtA	Obg family GTPase CgtA
TIGR02745	ccoG_rdxA_fixG	cytochrome c oxidase accessory protein CcoG
TIGR02748	GerC3_HepT	heptaprenyl diphosphate synthase component II
TIGR02772	Ku_bact	Ku protein
TIGR02773	addB_Gpos	helicase-exonuclease AddAB, AddB subunit
TIGR02776	NHEJ_ligase_prk	DNA ligase D
TIGR02785	addA_Gpos	helicase-exonuclease AddAB, AddA subunit
TIGR02787	codY_Gpos	GTP-sensing transcriptional pleiotropic repressor CodY
TIGR02793	nikR	nickel-responsive transcriptional regulator NikR
TIGR02794	tolA_full	protein TolA
TIGR02795	tol_pal_ybgF	tol-pal system protein YbgF
TIGR02796	tolQ	protein TolQ
TIGR02797	exbB	tonB-system energizer ExbB
TIGR02799	thio_ybgC	tol-pal system-associated acyl-CoA thioesterase
TIGR02800	propeller_TolB	Tol-Pal system beta propeller repeat protein TolB
TIGR02801	tolR	protein TolR
TIGR02802	Pal_lipo	peptidoglycan-associated lipoprotein
TIGR02803	ExbD_1	TonB system transport protein ExbD
TIGR02810	agaZ_gatZ	D-tagatose-bisphosphate aldolase, class II, non-catalytic subunit
TIGR02812	fadR_gamma	fatty acid metabolism transcriptional regulator FadR
TIGR02818	adh_III_F_hyde	S-(hydroxymethyl)glutathione dehydrogenase/class

		III alcohol dehydrogenase
TIGR02821	fghA_ester_D	S-formylglutathione hydrolase
TIGR02842	CyoC	cytochrome o ubiquinol oxidase, subunit III
TIGR02843	CyoB	cytochrome o ubiquinol oxidase, subunit I
TIGR02847	CyoD	cytochrome o ubiquinol oxidase subunit IV
TIGR02866	CoxB	cytochrome c oxidase, subunit II
TIGR02882	QoxB	cytochrome aa3 quinol oxidase, subunit I
TIGR02891	CtaD_CoxA	cytochrome c oxidase, subunit I
TIGR02897	QoxC	cytochrome aa3 quinol oxidase, subunit III
TIGR02901	QoxD	cytochrome aa3 quinol oxidase, subunit IV
TIGR02918	TIGR02918	accessory Sec system glycosylation protein GtfA
TIGR02919	TIGR02919	accessory Sec system glycosyltransferase GtfB
TIGR02939	RpoE_Sigma70	RNA polymerase sigma factor RpoE
TIGR02941	Sigma_B	RNA polymerase sigma-B factor
TIGR02951	DMSO_dmsB	dimethylsulfoxide reductase, chain B
TIGR02955	TMAO_TorT	TMAO reductase system periplasmic protein TorT
TIGR02956	TMAO_torS	TMAO reductase sytem sensor TorS
TIGR02961	allantoicase	allantoicase
TIGR02962	hdxy_isourate	hydroxyisourate hydrolase
TIGR02963	xanthine_xdhA	xanthine dehydrogenase, small subunit
TIGR02964	xanthine_xdhC	xanthine dehydrogenase accessory protein XdhC
TIGR02965	xanthine_xdhB	xanthine dehydrogenase, molybdopterin binding subunit
TIGR02966	phoR_proteo	phosphate regulon sensor kinase PhoR
TIGR02967	guan_deamin	guanine deaminase
TIGR02968	succ_dehyd_anc	succinate dehydrogenase, hydrophobic membrane anchor protein
TIGR02970	succ_dehyd_cytB	succinate dehydrogenase, cytochrome b556 subunit
TIGR02974	phageshock_pspF	psp operon transcriptional activator
TIGR02998	RraA_entero	regulator of ribonuclease activity A
TIGR03002	outer_YhbN_LptA	lipopolysaccharide transport periplasmic protein LptA
TIGR03010	sulf_tusC_dsrF	sulfur relay protein TusC/DsrF
TIGR03023	WcaJ_sugtrans	undecaprenyl-phosphate glucose phosphotransferase
TIGR03036	trp_2_3_diox	tryptophan 2,3-dioxygenase
TIGR03064	sortase_srtB	sortase, SrtB family
TIGR03072	release_prfH	putative peptide chain release factor H
TIGR03081	metmalonyl_epim	methylmalonyl-CoA epimerase
TIGR03130	malonate_delta	malonate decarboxylase acyl carrier protein

TIGR03131	malonate_mdcH	malonate decarboxylase, epsilon subunit
TIGR03132	malonate_mdcB	triphosphoribosyl-dephospho-CoA synthase MdcB
TIGR03133	malonate_beta	biotin-independent malonate decarboxylase, beta subunit
TIGR03134	malonate_gamma	biotin-independent malonate decarboxylase, gamma subunit
TIGR03135	malonate_mdcG	malonate decarboxylase holo-[acyl-carrier-protein] synthase
TIGR03137	AhpC	peroxiredoxin
TIGR03138	QueF	queuine synthase
TIGR03139	QueF-II	7-cyano-7-deazaguanine reductase
TIGR03140	AhpF	alkyl hydroperoxide reductase subunit F
TIGR03144	cytochr_II_ccsB	cytochrome c-type biogenesis protein CcsB
TIGR03146	cyt_nit_nrfB	cytochrome c nitrite reductase, pentaheme subunit
TIGR03148	cyt_nit_nrfD	cytochrome c nitrite reductase, NrfD subunit
TIGR03149	cyt_nit_nrfC	cytochrome c nitrite reductase, Fe-S protein
TIGR03150	fabF	beta-ketoacyl-acyl-carrier-protein synthase II
TIGR03156	GTP_HflX	GTP-binding protein HflX
TIGR03160	cobT_DBIPRT	nicotinate-nucleotide--dimethylbenzimidazole phosphoribosyltransferase
TIGR03162	ribazole_cobC	alpha-ribazole phosphatase
TIGR03167	tRNA_sel_U_synt	tRNA 2-selenouridine synthase
TIGR03175	AllD	ureidoglycolate dehydrogenase
TIGR03176	AllC	allantoate amidohydrolase
TIGR03177	pilus_cpaB	Flp pilus assembly protein CpaB
TIGR03178	allantoinase	allantoinase
TIGR03181	PDH_E1_alph_x	pyruvate dehydrogenase (acetyl-transferring) E1 component, alpha subunit
TIGR03182	PDH_E1_alph_y	pyruvate dehydrogenase (acetyl-transferring) E1 component, alpha subunit
TIGR03215	ac_ald_DH_ac	acetaldehyde dehydrogenase (acetylating)
TIGR03217	4OH_2_O_val_ald	4-hydroxy-2-oxovalerate aldolase
TIGR03220	catechol_dmpE	2-oxopent-4-enoate hydratase
TIGR03221	muco_delta	muconolactone delta-isomerase
TIGR03234	OH-pyruv-isom	hydroxypyruvate isomerase
TIGR03239	GarL	2-dehydro-3-deoxyglucarate aldolase
TIGR03240	arg_catab_astD	succinylglutamate-semialdehyde dehydrogenase
TIGR03241	arg_catab_astB	succinylarginine dihydrolase
TIGR03242	arg_catab_astE	succinylglutamate desuccinylase
TIGR03244	arg_catab_AstA	arginine N-succinyltransferase
TIGR03247	glucar-dehydr	glucarate dehydratase

TIGR03248	galactar-dH20	galactarate dehydratase
TIGR03254	oxalate_oxc	oxalyl-CoA decarboxylase
TIGR03263	guanyl_kin	guanylate kinase
TIGR03284	thym_sym	thymidylate synthase
TIGR03292	PhnH_redo	phosphonate C-P lyase system protein PhnH
TIGR03293	PhnG_redo	phosphonate C-P lyase system protein PhnG
TIGR03300	assembly_YfgL	outer membrane assembly lipoprotein YfgL
TIGR03303	OM_YaeT	outer membrane protein assembly complex, YaeT protein
TIGR03307	PhnP	phosphonate metabolism protein PhnP
TIGR03319	RNase_Y	ribonuclease Y
TIGR03328	salvage_mtnB	methylthioribulose-1-phosphate dehydratase
TIGR03330	SAM_DCase_Bsu	S-adenosylmethionine decarboxylase proenzyme
TIGR03331	SAM_DCase_Eco	S-adenosylmethionine decarboxylase proenzyme
TIGR03345	VI_ClpV1	type VI secretion ATPase, ClpV1 family
TIGR03346	chaperone_ClpB	ATP-dependent chaperone protein ClpB
TIGR03356	BGL	beta-galactosidase
TIGR03365	Bsubt_queE	7-cyano-7-deazaguanosine (preQ0) biosynthesis protein QueE
TIGR03367	queuosine_QueD	queuosine biosynthesis protein QueD
TIGR03369	cellulose_bcsE	cellulose biosynthesis protein BcsE
TIGR03371	cellulose_yhjQ	cellulose synthase operon protein YhjQ
TIGR03372	putres_am_tran	putrescine aminotransferase
TIGR03374	ABALDH	1-pyrroline dehydrogenase
TIGR03377	glycerol3P_GlpA	glycerol-3-phosphate dehydrogenase, anaerobic, A subunit
TIGR03378	glycerol3P_GlpB	glycerol-3-phosphate dehydrogenase, anaerobic, B subunit
TIGR03379	glycerol3P_GlpC	glycerol-3-phosphate dehydrogenase, anaerobic, C subunit
TIGR03380	agmatine_aguA	agmatine deiminase
TIGR03381	agmatine_aguB	N-carbamoylputrescine amidase
TIGR03384	betaine_BetI	transcriptional repressor BetI
TIGR03385	CoA_CoA_reduc	CoA-disulfide reductase
TIGR03391	FeS_syn_CsdE	cysteine desulfurase, sulfur acceptor subunit CsdE
TIGR03392	FeS_syn_CsdA	cysteine desulfurase, catalytic subunit CsdA
TIGR03395	sphingomy	sphingomyelin phosphodiesterase
TIGR03399	RNA_3prim_cycl	RNA 3'-phosphate cyclase
TIGR03402	FeS_nifS	cysteine desulfurase NifS
TIGR03412	iscX_yfhJ	FeS assembly protein IscX

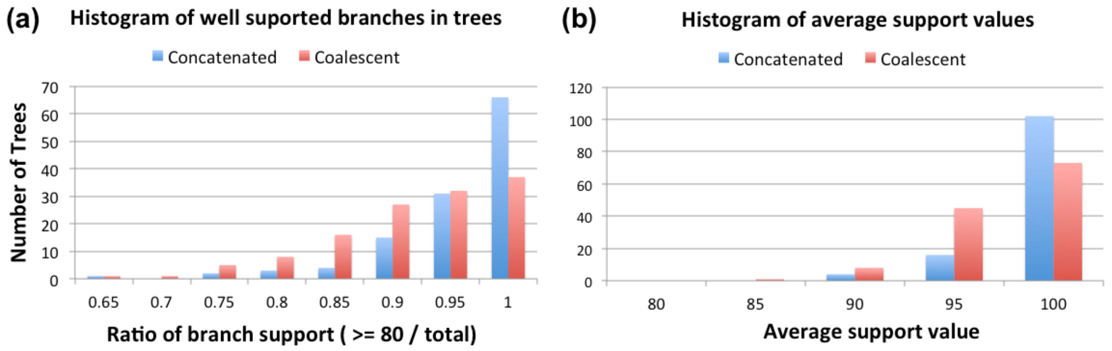
TIGR03413	GSH_gloB	hydroxyacylglutathione hydrolase
TIGR03420	DnaA_homol_Hda	DnaA regulatory inactivator Hda
TIGR03421	FeS_CyaY	iron donor protein CyaY
TIGR03423	pbp2_mrdA	penicillin-binding protein 2
TIGR03426	shape_MreD	rod shape-determining protein MreD
TIGR03438	egtD_ergothio	dimethylhistidine N-methyltransferase
TIGR03461	pabC_Proteo	aminodeoxychorismate lyase
TIGR03465	HpnD	squalene synthase HpnD
TIGR03493	cellullose_BcsF	celllulose biosynthesis operon protein BcsF/YhjT
TIGR03496	FliI_clade1	flagellar protein export ATPase FliI
TIGR03499	FlhF	flagellar biosynthesis protein FlhF
TIGR03500	FliO_TIGR	flagellar biosynthetic protein FliO
TIGR03528	2_3_DAP_am_ly	diaminopropionate ammonia-lyase
TIGR03532	DapD_Ac	2,3,4,5-tetrahydropyridine-2,6-dicarboxylate N-acetyltransferase
TIGR03533	L3_gln_methyl	protein-(glutamine-N5) methyltransferase, ribosomal protein L3-specific
TIGR03534	RF_mod_PrmC	protein-(glutamine-N5) methyltransferase, release factor-specific
TIGR03538	DapC_gpp	succinyldiaminopimelate transaminase
TIGR03565	alk_sulf_monoox	alkanesulfonate monooxygenase, FMNH(2)-dependent
TIGR03566	FMN_reduc_MsuE	FMN reductase
TIGR03567	FMN_reduc_SsuE	FMN reductase
TIGR03568	NeuC_NnaA	UDP-N-acetyl-D-glucosamine 2-epimerase, UDP-hydrolysing
TIGR03591	polynuc_phos	polyribonucleotide nucleotidyltransferase
TIGR03594	GTPase_EngA	ribosome-associated GTPase EngA
TIGR03596	GTPase_YlqF	ribosome biogenesis GTP-binding protein YlqF
TIGR03597	GTPase_YqeH	ribosome biogenesis GTPase YqeH
TIGR03598	GTPase_YsxC	ribosome biogenesis GTP-binding protein YsxC
TIGR03610	RutC	pyrimidine utilization protein C
TIGR03611	RutD	pyrimidine utilization protein D
TIGR03614	RutB	pyrimidine utilization protein B
TIGR03625	L3_bact	50S ribosomal protein uL3
TIGR03631	uS13_bact	ribosomal protein uS13
TIGR03632	uS11_bact	ribosomal protein uS11
TIGR03635	uS17_bact	ribosomal protein uS17
TIGR03652	FeS_repair_RIC	iron-sulfur cluster repair di-iron protein
TIGR03654	L6_bact	ribosomal protein uL6

TIGR03692	ATP_dep_HslV	ATP-dependent protease HslVU, peptidase subunit
TIGR03695	menH_SHCHC	2-succinyl-6-hydroxy-2,4-cyclohexadiene-1-carboxylate synthase
TIGR03702	lip_kinase_YegS	lipid kinase YegS
TIGR03703	plsB	glycerol-3-phosphate O-acyltransferase
TIGR03705	poly_P_kin	polyphosphate kinase 1
TIGR03707	PPK2_P_aer	polyphosphate kinase 2
TIGR03711	acc_sec_asp3	accessory Sec system protein Asp3
TIGR03712	acc_sec_asp2	accessory Sec system protein Asp2
TIGR03713	acc_sec_asp1	accessory Sec system protein Asp1
TIGR03723	T6A_TsaD_YgjD	tRNA threonylcarbamoyl adenosine modification protein TsaD
TIGR03725	T6A_YeaZ	tRNA threonylcarbamoyl adenosine modification protein YeaZ
TIGR03800	PLP_synth_Pdx2	pyridoxal 5'-phosphate synthase, glutaminase subunit Pdx2
TIGR03814	Gln_ase	glutaminase A
TIGR03818	MotA1	flagellar motor stator protein MotA
TIGR03821	EFP_modif_epmB	EF-P beta-lysylation protein EpmB
TIGR03823	FliZ	flagellar regulatory protein FliZ
TIGR03824	FlgM_jcvi	flagellar biosynthesis anti-sigma factor FlgM
TIGR03828	pfkB	1-phosphofructokinase
TIGR03838	queuosine_YadB	glutamyl-queuosine tRNA(Asp) synthetase
TIGR03859	PQQ_PqqD	coenzyme PQQ biosynthesis protein PqqD
TIGR03926	T7_EssB	type VII secretion protein EssB
TIGR03927	T7SS_EssA_Firm	type VII secretion protein EssA
TIGR03928	T7_EssCb_Firm	type VII secretion protein EssC
TIGR03937	PgaC_IcaA	poly-beta-1,6 N-acetyl-D-glucosamine synthase
TIGR03938	deacetyl_PgaB	poly-beta-1,6-N-acetyl-D-glucosamine N-deacetylase PgaB
TIGR03939	PGA_TPR_OMP	poly-beta-1,6 N-acetyl-D-glucosamine export porin PgaA
TIGR03940	PGA_PgaD	poly-beta-1,6-N-acetyl-D-glucosamine biosynthesis protein PgaD
TIGR03942	sulfatase_rSAM	anaerobic sulfatase maturase
TIGR03944	dehyd_SbnB_fam	2,3-diaminopropionate biosynthesis protein SbnB
TIGR03945	PLP_SbnA_fam	2,3-diaminopropionate biosynthesis protein SbnA
TIGR03951	Fe_III_red_FhuF	siderophore-iron reductase FhuF
TIGR03953	rplD_bact	50S ribosomal protein uL4
TIGR03998	thiol_BshC	bacillithiol biosynthesis cysteine-adding enzyme BshC

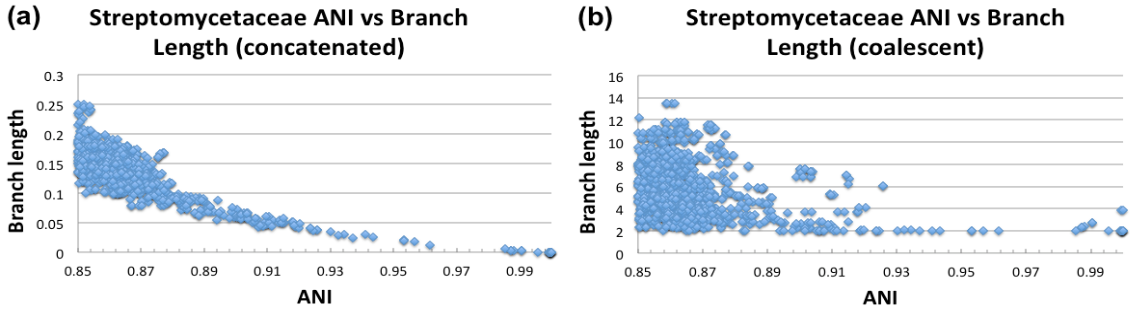
TIGR03999	thiol_BshA	N-acetyl-alpha-D-glucosaminyl L-malate synthase BshA
TIGR04000	thiol_BshB2	bacillithiol biosynthesis deacetylase BshB2
TIGR04004	WcaM	colanic acid biosynthesis protein WcaM
TIGR04005	wcaL	colanic acid biosynthesis glycosyltransferase WcaL
TIGR04007	wcaI	colanic acid biosynthesis glycosyltransferase WcaI
TIGR04008	WcaF	colanic acid biosynthesis acetyltransferase WcaF
TIGR04009	wcaE	colanic acid biosynthesis glycosyltransferase WcaE
TIGR04010	WcaD	putative colanic acid polymerase WcaD
TIGR04015	WcaC	colanic acid biosynthesis glycosyltransferase WcaC
TIGR04016	WcaB	colanic acid biosynthesis acetyltransferase WcaB
TIGR04017	WcaA	colanic acid biosynthesis glycosyltransferase WcaA
TIGR04091	LTA_dltB	D-alanyl-lipoteichoic acid biosynthesis protein DltB
TIGR04092	LTA_DltD	D-alanyl-lipoteichoic acid biosynthesis protein DltD
TIGR04239	rhombo_GlpG	rhomboid family protease GlpG
TIGR04265	bac_cardiolipin	cardiolipin synthase
TIGR04274	hypoxanDNAglyco	DNA-deoxyinosine glycosylase
TIGR04306	salvage_TenA	thiaminase II
TIGR04316	dhbA_paeA	2,3-dihydro-2,3-dihydroxybenzoate dehydrogenase
TIGR04322	rSAM_QueE_Ecoli	putative 7-cyano-7-deazaguanosine (preQ0) biosynthesis protein QueE
TIGR04365	spare_glycyl	autonomous glycyl radical cofactor GrcA
TIGR04377	myo_inos_iolD	3,5/4-trihydroxycyclohexa-1,2-dione hydrolase
TIGR04378	myo_inos_iolB	5-deoxy-glucuronate isomerase
TIGR04379	myo_inos_iolE	myo-inosose-2 dehydratase
TIGR04380	myo_inos_iolG	inositol 2-dehydrogenase
TIGR04416	group_II_RT_mat	group II intron reverse transcriptase/maturase
TIGR04430	OM_asym_MlaD	outer membrane lipid asymmetry maintenance protein MlaD
TIGR04478	rSAM_YfkAB	radical SAM/CxCxxxxC motif protein YfkAB
TIGR04502	microcomp_EutL	microcompartment protein EutL
TIGR04567	RNAP_delt_lowGC	DNA-directed RNA polymerase delta subunit
PF00166.17	PF00166.17	Chaperonin 10 Kd subunit
PF00118.20	PF00118.20	TCP-1/cpn60 chaperonin family
PF01025.15	PF01025.15	GrpE
PF01795.15	PF01795.15	MraW methylase family
PF00162.15	PF00162.15	Phosphoglycerate kinase
PF00466.16	PF00466.16	Ribosomal protein L10
PF00276.16	PF00276.16	Ribosomal protein L23
PF00297.18	PF00297.18	Ribosomal protein L3

PF00573.18	PF00573.18	Ribosomal protein L4
PF00281.15	PF00281.15	Ribosomal protein L5
PF00347.19	PF00347.19	Ribosomal protein L6
PF00411.15	PF00411.15	Ribosomal protein S11
PF00416.18	PF00416.18	Ribosomal protein S13/S18
PF00253.17	PF00253.17	Ribosomal protein S14p/S29e
PF00366.16	PF00366.16	Ribosomal protein S17
PF00410.15	PF00410.15	Ribosomal protein S8
PF00380.15	PF00380.15	Ribosomal protein S9/S16
PF00464.15	PF00464.15	Serine hydroxymethyltransferase
PF00750.15	PF00750.15	tRNA synthetases class I (R)

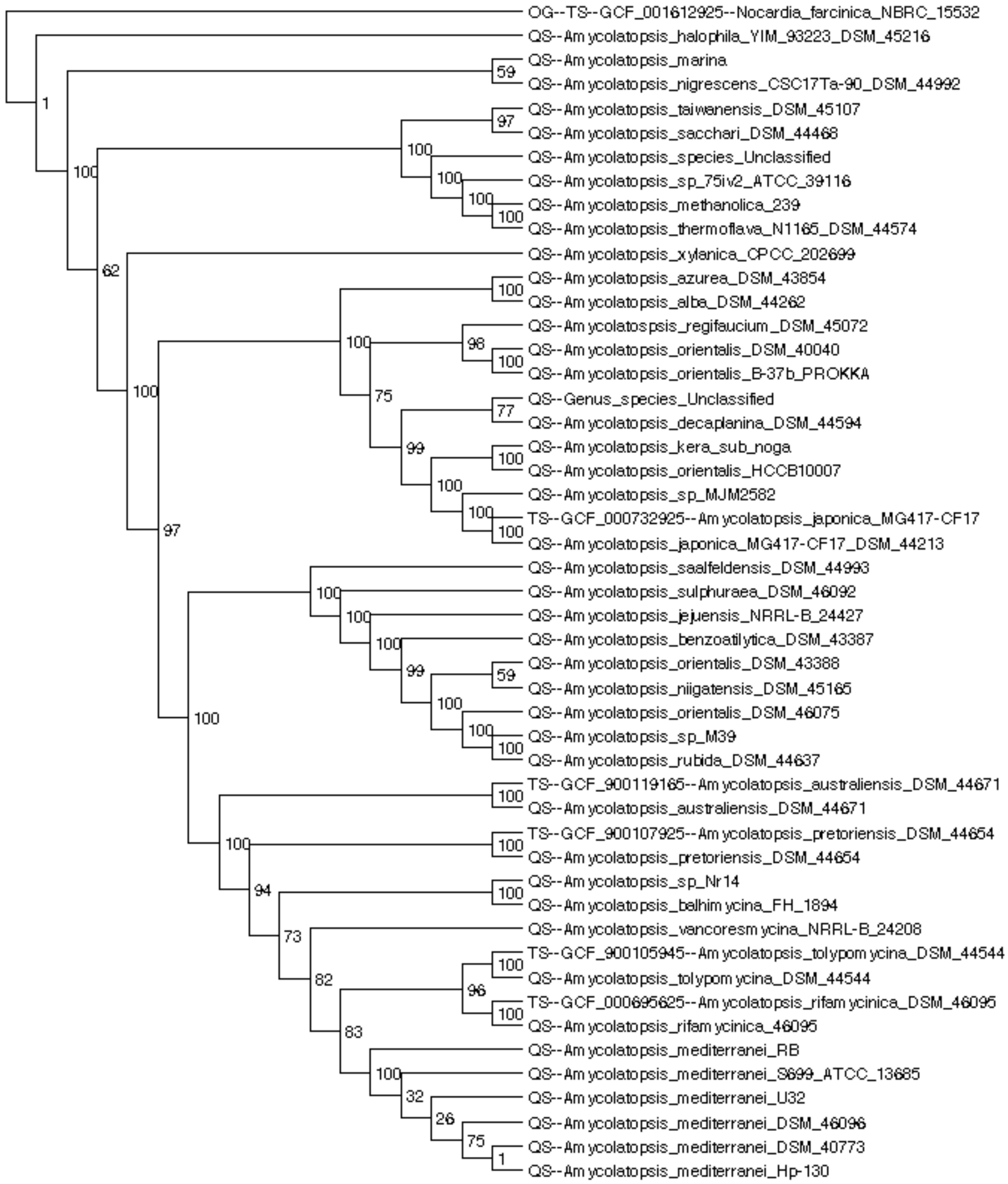
Supplemental S1. Table of housekeeping genes used for single copy gene screening



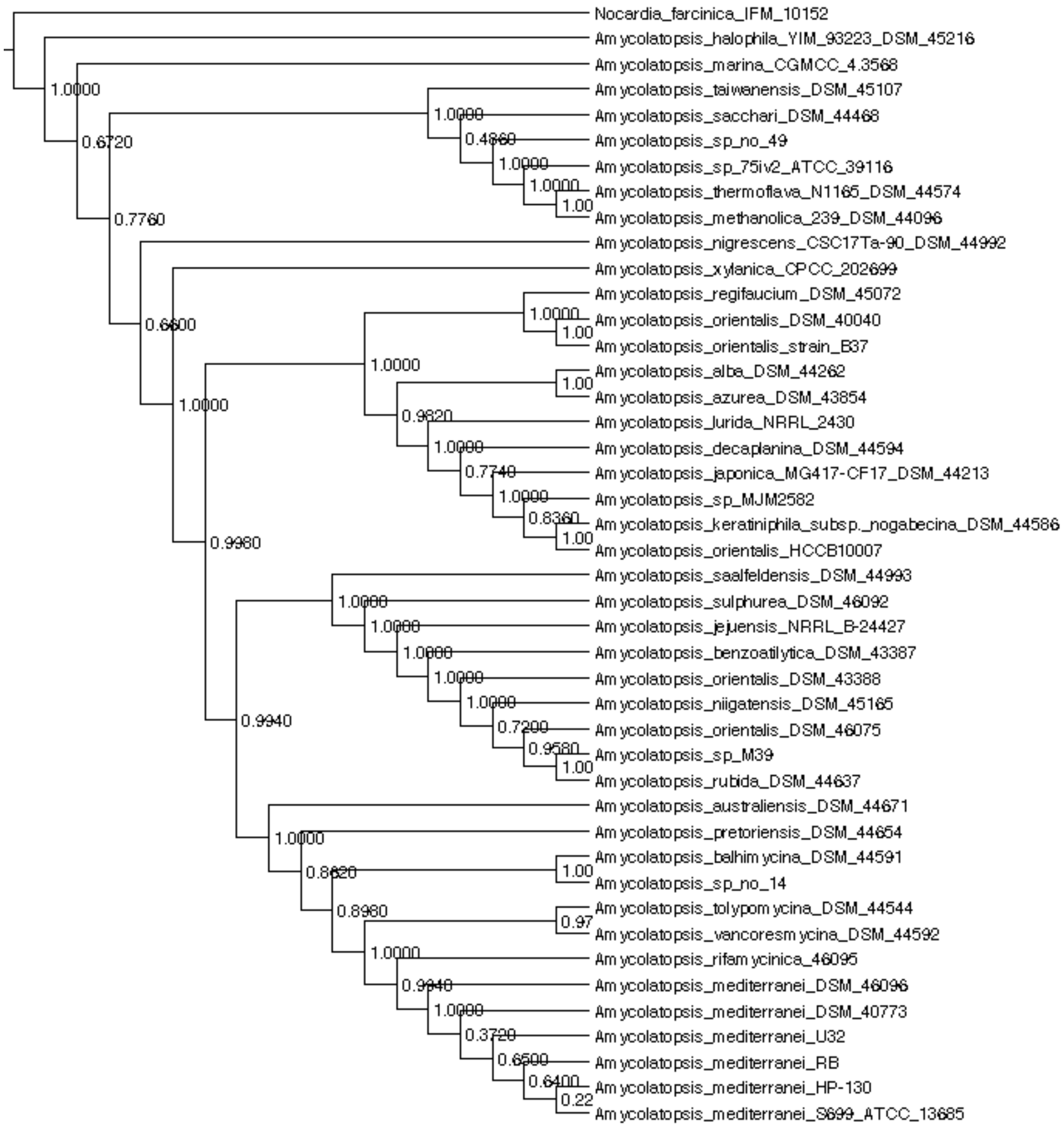
Supplemental S2. Bootstrap support values of auto-generated family trees for concatenated and coalescent workflow (blue and red respectively). (a) Ratio of well supported branches (80 or greater) versus all branches in a tree. (b) Average support values of all branches.



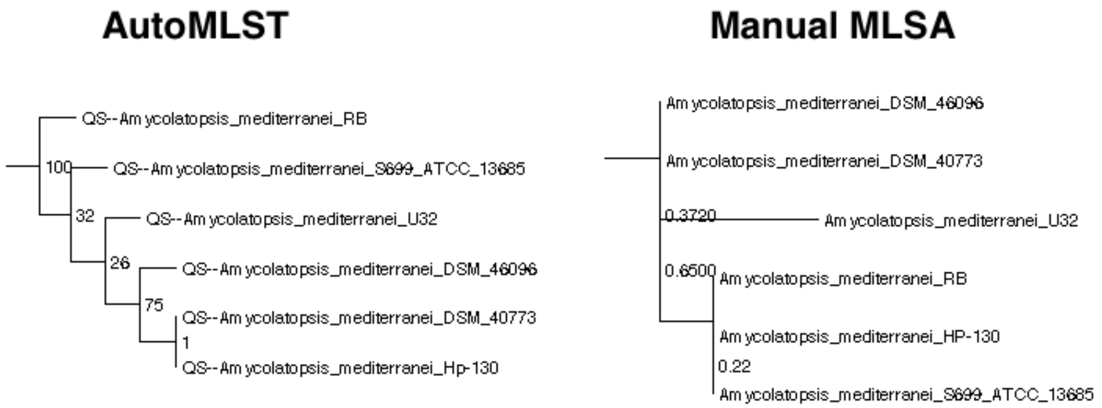
Supplemental S3. ANI values versus pairwise branch distances for the Streptomycetaceae family generated in autoMLST. (a) Concatenated workflow (b) Coalescent workflow.



Supplemental S4. Amycolatopsis species tree generated with autoMLST in denovo mode. Default settings were used with 1000 bootstrap replicates, values shown from 0-100.



Supplemental S5. Manually generated Amycolatopsis species tree using 7 housekeeping genes as described in Ademek et al (1). 500 Bootstrap replicates were used with values shown between 0–1.0



Supplemental S6. Comparison of multi-furcation differences in *A. Mediteranei* clade; AutoMLST versus Manual workflow shows resolved bi-furcation albeit with weak bootstrap support.

Supplemental Methods

Two additional validations were performed to supplement ANI clade designations. First, a survey of all bootstrap support values, a measure of branch confidence, was recorded from all family trees generated for both the concatenated and coalescent approach. These values were taken from each branch in a tree, including internal branches, and were summarized. One measure is the ratio of well-supported branches (over 80) versus all branches. Next, tree branch lengths were used to confirm correlation of pairwise ANI values with pairwise distances within the output tree for all pairs that showed an ANI over 85%. Branch distances were extracted using the ETE toolkit (2) for python and compared to corresponding pairs of ANI values as determined via MASH (3). All values were then summarized via the Pearson correlation coefficient as detailed in Alanjary et al. (4)

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