Genome-wide Analysis of Fis Binding in *Escherichia coli* Indicates a Causative Role for A-tracts

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Supplementary Methods

Whole genome-tiled microarray analysis. Cy5 and Cy3-labeled 9-mers (TriLink Biotechnologies) were diluted to 1 OD in 42 µL of random 9-mer buffer (125 mM Tris-HCl (pH 8.0), 12.5 mM $MgCl_2$, and 0.175% β-mercaptoethanol). 1 µg of the amplified IP or mock-IP DNA were added into 40 µL of Cy5 or Cy3-labeled 9-mer solution in 0.2 mL thin-walled PCR tubes, respectively, and the final volume was made up to 80 µL using ddH_2O. The samples were denatured in a PCR machine at 98 °C for 10 min and then quickly chilled in an ice water bath. 20 µL of 50x dNTP mix solution (10 mM Tris-HCl (pH 8.0), 1 mM EDTA, 10 mM dNTP, and 100 U Klenow fragment) was added into the samples. The samples were incubated at 37 °C for 2 hr in a PCR machine (light sensitive) and then the reactions were stopped by the addition of 10 µL of 0.5 M EDTA. The labeled samples were precipitated by adding 11.5 µL of 5 M NaCl and 110 µL of isopropanol. After incubation for 10 min in a dark room, the samples were centrifuged at 37,000×g for 10 min and rinsed with 500 µL of 80% ice-cold ethanol. The samples were dried for 5 min in a Speed-Vac using low heat and protection from light. The dried pellets were rehydrated in 25 µL of ddH_2O and the A_{260} of each samples were measured to determine DNA concentration. Typical yields ranged from 10~30 µg per reaction. 13 µg of the both IP DNA (Cy5) and mock-IP DNA (Cy3) were combined into a single 1.5 mL tube. The combined contents were dried in a Speed-Vac on low heat and resuspended in 10.9 µL of ddH_2O. Using the NimbleGen Array Reuse kit, 19.5 µL of 2x hybridization buffer, 7.8 µL of hybridization component A, 0.4 µL of Cy3 CPK6 50-mer oligo and 0.4 µL of Cy5 CPK6 50-mer oligo were added to each sample. The samples were incubated at 95 °C for 5 min and immediately transferred to 42 °C sample block in the MAUI hybridization unit (BioMicro Systems). The samples were loaded using the pipette supplied with the MAUI Station and hybridized overnight. After washing with washing buffers, the arrays were immediately scanned using Axon Scanner (model 4000B).

Data Processing. All ChIP-chip datasets showed high reproducibility (**Supplementary Figure S2**). The raw signals from the scanning were normalized by the Tukey bi-weight mean. Since ChIP-chip analysis is a two-color array with the reference on the array, the data is therefore thought of as a stand-alone experiment. The Tukey bi-weight function is used to account for differences in the dyes on the array, whereas RMA is used to account for differences between arrays so that the chips can be compared. The $\log_2$ ratio of Cy5 (IP DNA) to Cy3 (mock-IP DNA) for each point was calculated from the scanned signals. Then, the bi-weight mean of this $\log_2$ ratio was subtracted from each point. The each $\log_2$ ratio from triplicate samples was then averaged and the Fis-binding sites were identified using mpeak program (http://www.stat.ucla.edu/~zmdl/mpeak/). All signals can be downloaded from our website (http://systemsbiology.ucsd.edu/publications). Genome-scale data was visualized using NimbleGen's SignalMap software, and most other analyses were performed with Matlab version 6.5 and Microsoft Excel software.

Supplementary Table S1. Transcriptome analysis and genome-wide Fis-binding sites. "bnum" indicates Blattner number. "TU" indicates the current transcription unit of *Escherichia coli* obtained from EcoCyc database (Keseler et al. 2005). "Strand" shows the transcription direction (+: Watson strand, -: Crick strand). In "Call" column, S indicates the genes differentially expressed between parental strain and *fis* deletion mutant strain (FDR 1% = 0.0021 (aerobic), 0.0024 (anaerobic); Anova 1% = 0.0001). Fold ratio indicates the $\log_2$ values of expression profiling. In "Regulation" column, the numbers (1,2,3,4, and 5) indicate the genes directly regulated by Fis bound in IG1 region, the genes directly regulated by Fis bound in ORF, IG2 region, the genes indirectly regulated by Fis, and silent genes, respectively. RNAP, σ70 and Fis-binding category indicate the bindings of each proteins.

bnum	Locus	TU	Strand	Call		P-value		Fold ratio		Regulation	RNAP	σ70	Fis-binding Category
				Aerobic	Anova	Aerobic	Anova	Aerobic	Anaerobic				
b0001	thrL	TU-1	+	S		0.0007	0.9888	-1.1721	-1.1643	4			
b0002	thrA	TU-1	+	S		0.0008	0.0135	-0.4001	-0.0233	4			
b0003	thrB	TU-1	+			0.0049	0.3828	-0.3410	-0.1876				
b0004	thrC	TU-1	+			0.0140	0.0558	-0.2263	0.0842				
b0005	b0005	TU-2	+			0.3342	0.3809	-0.0921	0.0541				
b0006	yaaA	TU-3	-			0.0075	0.6993	0.3481	0.4157				
b0007	yaaJ	TU-4	-			0.0397	0.4933	0.2474	0.1296				
b0008	talB	TU-5	+			0.3014	0.7086	-0.1061	-0.0409				
b0009	mog	TU-6	+			0.2836	0.6901	0.0893	0.0342				
b0010	yaaH	TU-7	-	S		0.0007	0.2330	0.4783	0.2920	4			
b0011	b0011	TU-8	-	S		0.0003	0.9550	0.5556	0.5461	4			
b0012	htgA	TU-9	+	S		0.0000	0.8484	1.2919	1.3367	4			
b0013	yaaI	TU-10	-	S		0.0001	0.8037	0.7101	0.6623	4			
b0014	dnaK	TU-11	+			0.6479	0.6198	-0.0672	-0.1882				
b0015	dnaJ	TU-11	+			0.0441	0.3804	-0.3021	-0.1371	5	NO	NO	ORF
b0016	yi81	TU-12	+			0.4297	0.3052	-0.0693	0.0827	5	NO	YES	IG1
b0017	yi82	TU-13	-	S		0.0001	0.7855	-0.6464	-0.6975	4			
b0018	gef	TU-14	-			0.0171	0.2049	0.4644	0.8280				
b0019	nhaA	TU-15	+			0.0723	0.9114	-0.3424	-0.3089				
b0020	nhaR	TU-16	+			0.6996	0.8096	0.0523	0.1030	3	NO	YES	IG2
b0022	insA	TU-17	-			0.9405	0.1629	-0.0256	-0.6056				
b0023	rpsT	TU-18	-			0.0227	0.9395	0.4026	0.3837				
b0024	b0024	TU-19	+			0.0512	0.3588	0.4468	0.7089				
b0025	ribF	TU-20	+			0.4907	0.1162	0.0537	-0.1066	5	NO	NO	ORF
b0026	ileS	TU-20	+			0.7347	0.2102	-0.0314	-0.1860				
b0027	lspA	TU-20	+			0.5055	0.4626	0.0812	-0.0378				
b0028	slpA	TU-20	+			0.3254	0.3343	0.0967	-0.0188				
b0029	lytB	TU-20	+			0.0811	0.4009	0.1795	0.2823				
b0030	yaaF	TU-21	+			0.0384	0.8674	0.3064	0.3314				
b0031	dapB	TU-22	+			0.1552	0.8780	-0.1582	-0.2126				
b0032	carA	TU-23	+			0.0084	0.0733	-0.4220	-0.7518				
b0033	carB	TU-23	+			0.0121	0.8005	-0.2839	-0.3198				
b0034	caiF	TU-24	+			0.4018	0.0009	-0.1065	0.6329				
b0035	caiE	TU-25	-	S		0.0006	0.7042	0.5869	0.6545	1			
b0036	caiD	TU-25	-			0.0030	0.7432	0.3902	0.4406	5	NO	NO	IG1
b0037	caiC	TU-25	-			0.0034	0.5011	0.3972	0.5121	5			
b0038	caiB	TU-25	-			0.6483	0.8968	0.0481	0.0685	5			
b0039	caiA	TU-25	-			0.0060	0.7564	0.3105	0.2626	5			
b0040	caiT	TU-25	-			0.1666	0.8122	0.1380	0.0992	5	NO	YES	IG1
b0041	fixA	TU-26	+	S		0.0002	0.9618	0.4864	0.4938	1	NO	YES	IG1
b0042	fixB	TU-26	+			0.0030	0.7154	0.3160	0.3860	5			
b0043	fixC	TU-26	+	S		0.0004	0.5597	0.4171	0.5201	1			
b0044	fixX	TU-26	+	S		0.0000	0.5525	0.5265	0.6291	1			
b0045	yaaU	TU-27	+	S		0.0001	0.7494	0.6286	0.6786	4			
b0046	yabF	TU-28	+			0.7295	0.6052	-0.0441	0.0832				
b0047	kefC	TU-28	+			0.5190	0.9252	-0.0878	-0.1121				
b0048	folA	TU-29	+			0.9972	0.4236	-0.0005	-0.1483				
b0049	apaH	TU-30	-			0.0343	0.6600	-0.3013	-0.2065				
b0050	apaG	TU-30	-			0.0170	0.6303	-0.5974	-0.7283				
b0051	ksgA	TU-30	-			0.0281	0.8114	-0.5871	-0.6486				
b0052	pdxA	TU-30	-			0.1570	0.9296	-0.3307	-0.3543				

b0053	surA	TU-30	-		0.0190	0.6458	-0.4051	-0.3205				
b0054	imp	TU-31	-		0.0046	0.2977	-0.9674	-1.2943				
b0055	yabH	TU-32	+		0.4835	0.9267	0.0812	0.0987	5	NO	NO	ORF
b0056	yabP	TU-33	+		0.3262	0.8181	0.1375	0.0927				
b0057	yabQ	TU-33	+		0.7988	0.2752	0.0438	-0.2624				
b0058	yabO	TU-34	-	S	0.0000	0.7868	0.5164	0.4870	4			
b0059	hepA	TU-34	-	S	0.0002	0.0328	0.4518	0.1888	4			
b0060	polB	TU-35	-		0.5182	0.2300	-0.0516	0.1093				
b0061	araD	TU-36	-		0.0599	0.4423	0.2605	0.3874	5			
b0062	araA	TU-36	-		0.0130	0.5007	0.3140	0.4174	5			
b0063	araB	TU-36	-		0.0132	0.1770	0.3743	0.5951	5	NO	NO	IG1
b0064	araC	TU-37	+		0.4162	0.4594	0.0697	0.1574	5	NO	NO	IG1
b0065	yabI	TU-38	+		0.0048	0.1707	0.3910	0.5940				
b0066	yabJ	TU-39	-		0.0030	0.4013	0.3591	0.4733				
b0067	yabK	TU-39	-		0.4810	0.2496	0.0870	-0.0781				
b0068	tbpA	TU-39	-		0.6540	0.1215	0.0554	-0.1606				
b0069	yabN	TU-39	-		0.3503	0.4649	0.0865	-0.0115				
b0070	yabM	TU-40	+		0.0306	0.3064	0.1652	0.0060	5	YES	YES	IG1
b0071	leuD	TU-41	-	S	0.0002	0.3245	-0.7892	-0.3942	4	NO	NO	IG2
b0072	leuC	TU-41	-	S	0.0001	0.0453	-0.6697	-0.1324	4			
b0073	leuB	TU-41	-	S	0.0000	0.1024	-0.7170	-0.3201	1	NO	NO	ORF
b0074	leuA	TU-41	-	S	0.0013	0.0332	-0.5455	-0.0738	1	NO	NO	ORF
b0075	leuL	TU-41	-		0.0399	0.1166	-0.2878	0.2509				
b0076	leuO	TU-42	+		0.0034	0.9925	0.3954	0.3972				
b0077	ilvI	TU-43	+		0.1355	0.8495	-0.2249	-0.2592				
b0078	ilvH	TU-43	+		0.0118	0.5083	-0.3438	-0.2464				
b0079	fruL	TU-44	+		0.1578	0.4775	-0.2972	-0.1374				
b0080	fruR	TU-44	+		0.0160	0.1280	-0.3056	-0.5596				
b0081	yabB	TU-45	+		0.0855	0.6698	-0.1586	-0.0952	5	YES	YES	IG1
b0082	yabC	TU-45	+		0.9771	0.5860	0.0021	-0.0701	5			
b0083	ftsL	TU-45	+		0.3500	0.5260	0.0793	0.1699	5			
b0084	ftsI	TU-45	+		0.0801	0.5409	-0.1534	-0.0384	5			
b0085	murE	TU-45	+		0.0175	0.7305	0.1750	0.2132	5			
b0086	murF	TU-45	+		0.4349	0.6933	-0.0939	-0.0201	5			
b0087	mraY	TU-45	+		0.0280	0.7562	-0.2811	-0.3291	5	NO	NO	IG1
b0088	murD	TU-45	+		0.3968	0.4796	-0.0765	0.0236	5			
b0089	ftsW	TU-45	+		0.0096	0.2991	0.1841	0.0778	5			
b0090	murG	TU-45	+		0.1791	0.7113	0.0916	0.0487	5			
b0091	murC	TU-45	+		0.3466	0.8764	0.0887	0.1078	5			
b0092	ddlB	TU-45	+		0.6898	0.9022	0.0283	0.0423	5			
b0093	ftsQ	TU-46	+		0.0483	0.8053	0.1651	0.1955	5	NO	NO	IG1
b0094	ftsA	TU-46	+		0.1218	0.9183	0.1718	0.1854	5			
b0095	ftsZ	TU-46	+		0.0032	0.0695	-0.2294	-0.4454	5			
b0096	lpxC	TU-47	+	S	0.0014	0.2421	-0.2945	-0.4347	4			
b0097	yacA	TU-48	+		0.6759	0.0040	-0.0430	-0.4383	5	YES	YES	IG1
b0098	secA	TU-48	+		0.8958	0.0452	-0.0107	-0.3770	5	NO	NO	ORF
b0099	mutT	TU-48	+		0.1917	0.7022	0.1717	0.1094	5			
b0100	b0100	TU-49	-	S	0.0001	0.0222	0.5335	0.1660	4			
b0101	yacG	TU-49	-		0.3171	0.0903	0.1463	-0.2459				
b0102	yacF	TU-49	-		0.8704	0.1659	-0.0262	-0.3410				
b0103	yacE	TU-49	-		0.0511	0.0540	0.2541	-0.0302				
b0104	guaC	TU-50	+		0.7181	0.8772	0.0311	0.0514				
b0105	b0105	TU-51	-		0.4862	0.2681	0.0857	0.2875				
b0106	hofC	TU-51	-		0.0224	0.5219	0.2388	0.1303				
b0107	hofB	TU-51	-	S	0.0001	0.6021	0.4286	0.5052	4			
b0108	ppdD	TU-51	-	S	0.0018	0.9652	0.5272	0.5353	4			
b0109	nadC	TU-52	-		0.7127	0.0889	0.0524	-0.2553				
b0110	ampD	TU-53	+		0.4044	0.7112	-0.1193	-0.0371				
b0111	ampE	TU-54	+		0.2925	0.1527	-0.1512	0.1318				
b0112	aroP	TU-55	-	S	0.0000	0.8556	-1.8151	-1.7741	1	YES	YES	IG1
b0113	pdhR	TU-56	+		0.8445	0.2996	-0.0218	0.1847	5	YES	YES	IG1
b0114	aceE	TU-56	+		0.0492	0.6862	-0.4128	-0.5000	5			
b0115	aceF	TU-56	+		0.0089	0.4630	-0.4776	-0.6188	5			

b0116	lpdA	TU-56	+	S		0.0019	0.1324	-0.4688	-0.2321	1			
b0117	yacH	TU-57	-			0.2398	0.5367	0.1964	0.3411	5	YES	YES	IG1
b0118	acnB	TU-58	+	S	S	0.0004	0.0000	-0.6760	0.2047	1	YES	YES	IG1
b0119	yacL	TU-59	+			0.4782	0.4069	0.0979	0.2743				
b0120	speD	TU-60	-			0.0025	0.7271	0.3852	0.4404	5			
b0121	speE	TU-60	-	S		0.0000	0.6798	0.6293	0.5787	1	YES	NO	IG1
b0122	yacC	TU-60	-			0.8797	0.7645	0.0174	0.0606	5	YES	NO	IG1
b0123	yacK	TU-61	+			0.6707	0.3982	0.0756	-0.1447	5	YES	NO	IG1
b0124	gcd	TU-62	-			0.0065	0.0005	-0.4238	0.2937				
b0125	hpt	TU-63	+			0.2889	0.0358	-0.0853	0.1663	5	NO	NO	ORF
b0126	yadF	TU-64	-			0.0641	0.0226	-0.1245	-0.3914				
b0127	yadG	TU-65	+			0.8924	0.8639	-0.0159	0.0098				
b0128	yadH	TU-65	+			0.0188	0.8004	-0.1777	-0.1531				
b0129	yadI	TU-65	+			0.0024	0.7704	0.3935	0.4392				
b0130	yadE	TU-66	+			0.0207	0.6809	0.2961	0.3647				
b0131	panD	TU-67	-			0.6154	0.0277	-0.0735	-0.4996				
b0132	yadD	TU-68	+			0.2271	0.5968	0.1147	0.0096				
b0133	panC	TU-69	-			0.3722	0.3252	0.0960	-0.0627	5			
b0134	panB	TU-69	-			0.8715	0.3193	0.0134	-0.1168	5	YES	YES	IG1
b0135	yadC	TU-70	-	S		0.0016	0.5510	0.3275	0.2100	1	YES	YES	IG1
b0136	yadK	TU-70	-	S		0.0017	0.2246	0.4444	0.2095	1			
b0137	yadL	TU-70	-			0.0035	0.4387	0.3370	0.1815	5			
b0138	yadM	TU-70	-	S		0.0019	0.5008	0.3392	0.2263	1			
b0139	htrE	TU-70	-	S		0.0007	0.3012	0.6404	0.4353	1	YES	YES	IG1
b0140	ecpD	TU-70	-	S		0.0013	0.8157	0.6160	0.5675	1	NO	NO	IG1
b0141	yadN	TU-71	-			0.0149	0.7927	0.4053	0.3542	5	NO	YES	IG1
b0142	folK	TU-72	-			0.6150	0.6602	-0.0730	-0.1550				
b0143	pcnB	TU-72	-			0.0066	0.6904	-0.3158	-0.3679				
b0144	yadB	TU-73	-			0.2619	0.2134	-0.1245	0.0871				
b0145	dksA	TU-73	-			0.0682	0.8185	-0.2833	-0.3299				
b0146	sfsA	TU-74	-			0.1011	0.9919	-0.3390	-0.3357				
b0147	yadP	TU-75	-			0.3409	0.3955	0.0865	0.2362				
b0148	hrpB	TU-76	+			0.1480	0.7915	0.1770	0.2223				
b0149	mrcB	TU-76	+			0.6169	0.3622	-0.0602	-0.2080				
b0150	fhuA	TU-77	+			0.0762	0.0347	-0.4480	0.1749	5	YES	YES	IG1
b0151	fhuC	TU-77	+			0.8152	0.0413	-0.0449	0.4941	5			
b0152	fhuD	TU-77	+			0.5640	0.1025	-0.0942	0.2705	5			
b0153	fhuB	TU-77	+			0.5217	0.1501	0.0945	0.3975	5			
b0154	hemL	TU-78	-			0.2701	0.4752	-0.1261	-0.2383				
b0155	yadQ	TU-79-1	+			0.6087	0.5081	-0.0512	-0.1523				
b0156	yadR	TU-79-2	+			0.0107	0.7686	0.2552	0.2145	5	YES	YES	IG1
b0157	yadS	TU-80	-			0.1139	0.2554	0.1417	0.2854	5			
b0158	yadT	TU-80	-			0.4801	0.8034	0.0658	0.0336	5			
b0159	pfs	TU-80	-			0.2302	0.8238	-0.0785	-0.0549	5	YES	YES	IG1
b0160	dgt	TU-81	+			0.0183	0.3006	-0.2668	-0.1238				
b0161	htrA	TU-82	+			0.7379	0.4639	0.0326	-0.0847				
b0162	yaeG	TU-83	+			0.0868	0.2594	0.2801	0.4937				
b0163	yaeH	TU-84	-			0.0203	0.1796	-0.4029	-0.0531				
b0164	yaeI	TU-85-1	-			0.0715	0.7824	0.2286	0.2725	5	NO	NO	IG1
b0165	b0165	TU-85-2	-			0.5583	0.9539	0.0615	0.0527				
b0166	dapD	TU-85-3	-	S		0.0003	0.4666	-0.4456	-0.3313	1	YES	YES	IG1
b0167	glnD	TU-85-3	-			0.3486	0.2637	-0.0758	-0.2349				
b0168	map	TU-85-3	-			0.3463	0.0839	-0.0925	-0.3743				
b0169	rpsB	TU-86	+			0.4931	0.5888	-0.0885	-0.1766				
b0170	tsf	TU-86	+			0.5193	0.7548	-0.0810	-0.0331	5	NO	NO	ORF
b0171	pyrH	TU-87	+			0.3413	0.5673	0.1067	0.0067				
b0172	frr	TU-88	+			0.0377	0.0564	-0.3467	-0.7385				
b0173	yaeM	TU-88	+			0.2015	0.3813	0.1568	0.0231				
b0174	yaeS	TU-89	+			0.7900	0.3707	-0.0470	-0.2380				
b0175	cdsA	TU-89	+			0.3677	0.4207	-0.1831	-0.3703				
b0176	yaeL	TU-89	+			0.6983	0.4421	-0.0603	-0.2058	5	NO	NO	ORF
b0177	yaeT	TU-89	+			0.1061	0.8682	-0.4691	-0.5275				
b0178	hlpA	TU-89	+			0.3563	0.5843	-0.1207	-0.0305				

b0179	lpxD	TU-89	+			0.1280	0.9690	-0.2295	-0.2226	5	NO	NO	ORF
b0180	fabZ	TU-90	+			0.8318	0.1612	0.0124	-0.1182				
b0181	lpxA	TU-91	+			0.1187	0.2462	-0.3343	-0.6207				
b0182	lpxB	TU-91	+			0.0808	0.9933	0.2167	0.2179				
b0183	rnhB	TU-91	+			0.5401	0.6776	0.0878	0.1593				
b0184	dnaE	TU-91	+			0.0465	0.4480	0.3121	0.4485				
b0185	accA	TU-92	+			0.0483	0.9679	0.2081	0.2016	5	YES	YES	IG1
b0186	ldcC	TU-93	+			0.0033	0.1350	-0.7712	-0.2785				
b0187	yaeR	TU-94	+			0.1772	0.5922	-0.1857	-0.0785				
b0188	mesJ	TU-94	+			0.8533	0.1874	-0.0221	0.2179				
b0189	yaeO	TU-95	-			0.0578	0.9005	-0.2456	-0.2220				
b0190	yaeQ	TU-96	+			0.5429	0.8484	-0.0761	-0.0397				
b0191	yaeJ	TU-96	+			0.8807	0.7309	0.0219	-0.0424				
b0192	cutF	TU-96	+			0.0033	0.4707	0.3052	0.4006				
b0193	yaeF	TU-97	-			0.1218	0.6743	0.1909	0.2729				
b0194	proS	TU-97	-			0.7549	0.0799	-0.0329	-0.2844				
b0195	yaeB	TU-98	-			0.0230	0.5462	0.1675	0.2413				
b0196	rcsF	TU-98	-			0.8648	0.1344	-0.0136	-0.1931				
b0197	yaeC	TU-98	-			0.0353	0.6160	0.1930	0.2471				
b0198	yaeE	TU-98	-			0.1810	0.0854	0.1230	-0.1478				
b0199	abc	TU-98	-			0.0024	0.0013	0.2732	-0.1818				
b0200	yaeD	TU-99	+			0.1638	0.7078	0.1508	0.0963	5	YES	NO	IG1
b0201	rrsH	TU-100	+			0.1294	0.9674	0.0757	0.0734	5	YES	YES	IG1
b0204	rrlH	TU-101	+			0.0478	0.4313	0.0790	0.0438				
b0205	rrfH	TU-101	+			0.8707	0.6135	0.0168	0.1052				
b0206	aspU	TU-101	+			0.9416	0.4152	-0.0149	0.2482				
b0207	yafB	TU-102	+			0.0167	0.8992	0.2266	0.2090				
b0208	yafC	TU-103	-			0.7765	0.9772	-0.0240	-0.0192				
b0209	yafD	TU-104	+			0.3105	0.4021	-0.0884	-0.2194				
b0210	yafE	TU-104	+			0.3409	0.1556	0.0775	-0.2052	5	NO	NO	ORF
b0211	dniR	TU-105-1	-			0.2390	0.5587	0.1643	-0.0395	5	YES	YES	IG1
b0212	gloB	TU-105-2	-			0.0039	0.3229	-0.5017	-0.7122				
b0213	yafS	TU-106	+			0.2096	0.7634	-0.1276	-0.0708				
b0214	rnhA	TU-107	-			0.0100	0.3547	0.2899	0.1392				
b0215	dnaQ	TU-108	+			0.0023	0.0414	0.3290	0.0397	5	YES	YES	IG1
b0216	aspV	TU-109	+			0.4885	0.6715	-0.1284	0.0008	5	YES	YES	IG1
b0217	yafT	TU-110	+			0.0039	0.0582	0.3590	0.0080				
b0218	yafU	TU-111	-	S		0.0003	0.5009	0.6565	0.5315	1	YES	NO	IG1
b0219	yafV	TU-112	-			0.2198	0.8151	0.1758	0.2205				
b0220	ykfE	TU-113	+			0.1782	0.8033	-0.1447	-0.2298				
b0221	yafH	TU-114	-			0.8841	0.0306	0.0188	0.4791				
b0222	gmhA	TU-115-1	+			0.3298	0.3143	-0.1553	0.0432	5	YES	YES	IG1
b0223	yafJ	TU-115-2	+			0.0515	0.8969	-0.1849	-0.1681				
b0224	yafK	TU-116	-			0.9322	0.0644	-0.0100	-0.3381				
b0225	yafQ	TU-116	-			0.2933	0.7967	-0.2391	-0.3173				
b0226	dinJ	TU-116	-			0.6563	0.7463	-0.0572	-0.1191				
b0227	yafL	TU-117	+			0.0276	0.0833	0.3295	0.7236	5	YES	YES	IG1
b0228	yafM	TU-118	+			0.9256	0.3774	-0.0152	0.1927				
b0229	fhiA	TU-119	-			0.4967	0.3235	0.1167	0.3602				
b0230	mbhA	TU-120	+			0.1231	0.0671	0.2098	0.6226				
b0231	dinP	TU-121-1	+			0.2257	0.3584	0.1626	0.3349	5	YES	NO	IG1
b0232	yafN	TU-121-2	+			0.8360	0.8414	-0.0236	-0.0692				
b0233	yafO	TU-121-2	+			0.0216	0.8860	-0.3294	-0.3561				
b0234	yafP	TU-121-2	+			0.3124	0.1615	0.1453	0.4043				
b0235	b0235	TU-122	+			0.0125	0.8260	0.4258	0.4706				
b0236	prfH	TU-122	+			0.0465	0.3582	0.2734	0.4494				
b0237	pepD	TU-123	-			0.0102	0.6148	-0.2847	-0.3555				
b0238	gpt	TU-124	+			0.6178	0.0383	0.0316	0.2466				
b0239	yafA	TU-125-1	+			0.6735	0.1233	-0.0259	-0.1802	5	YES	NO	IG1
b0240	crl	TU-125-2	+			0.0026	0.0020	-0.3014	0.1296	3	NO	NO	IG2
b0241	phoE	TU-126	-			0.7989	0.9634	-0.0262	-0.0194	3	NO	NO	IG2
b0242	proB	TU-127	+			0.4818	0.0573	-0.0552	-0.2569				
b0243	proA	TU-127	+			0.4715	0.4097	0.0733	-0.0493				

b0244	thrW	TU-128	+			0.1673	0.1588	-0.2542	0.1873	5	YES	YES	IG1
b0245	b0245	TU-129	-	S		0.0018	0.6826	0.4331	0.3731	4			
b0246	yafW	TU-129	-			0.0197	0.5267	0.3829	0.5026				
b0247	ykfG	TU-130	-	S		0.0006	0.5054	0.5392	0.6466	4			
b0248	yafX	TU-130	-			0.0094	0.7420	0.2629	0.3073				
b0249	ykfF	TU-131	-			0.0614	0.5976	0.2265	0.3067				
b0250	ykfB	TU-131	-			0.0067	0.4127	-0.2954	-0.4143				
b0251	yafY	TU-131	-			0.0053	0.0867	0.2177	0.0500				
b0252	yafZ	TU-132	-	S		0.0002	0.8730	0.5409	0.5162	4			
b0253	ykfA	TU-132	-	S		0.0008	0.9789	0.4066	0.4030	4			
b0254	perR	TU-133	-			0.0326	0.1201	0.2184	0.4708				
b0255	yi91a	TU-134	+			0.1141	0.7826	0.1912	0.2353				
b0257	b0257	TU-134	+			0.4235	0.1959	0.0970	-0.1046				
b0258	ykfC	TU-135	+			0.5064	0.6291	0.0908	0.0029	3	NO	YES	IG2
b0260	ykfD	TU-136	+			0.3810	0.2427	-0.1270	0.1001				
b0261	yagD	TU-136	+			0.1799	0.4664	0.1525	0.2766				
b0262	afuC	TU-137	-			0.0174	0.6333	0.3481	0.4343				
b0263	b0263	TU-137	-			0.8698	0.4112	0.0182	0.1806				
b0265	insA	TU-137	-			0.1122	0.4933	0.3644	0.1650				
b0266	yagB	TU-138	-			0.0533	0.0176	-0.1934	-0.5055	5			
b0267	yagA	TU-138	-			0.1308	0.3025	0.2454	0.4944	5	NO	NO	IG1
b0268	yagE	TU-139	+			0.1913	0.1816	0.1611	0.3903	5	NO	NO	IG1
b0269	yagF	TU-139	+			0.1814	0.1709	0.2100	0.5033	5	NO	NO	ORF
b0270	yagG	TU-140	+			0.1812	0.4738	0.1061	0.1992				
b0271	yagH	TU-140	+			0.2393	0.0553	0.1476	0.5538				
b0272	yagI	TU-141	-			0.0936	0.3883	0.2571	0.4243				
b0273	argF	TU-142	-			0.2531	0.5778	0.2422	0.0682				
b0276	yagJ	TU-143	+			0.3226	0.4799	0.1305	0.2705				
b0277	yagK	TU-144	-			0.0291	0.3328	0.2681	0.4542				
b0278	yagL	TU-145	-			0.6606	0.9660	0.0974	0.1101	5	NO	NO	IG1
b0279	yagM	TU-145	-			0.0193	0.4096	0.4009	0.5997	5			
b0280	yagN	TU-146	-			0.0038	0.8758	-0.3541	-0.3267				
b0281	intF	TU-146	-			0.1333	0.4346	-0.3085	-0.1383				
b0282	yagP	TU-147	-			0.4571	0.6233	0.0909	0.1873	5			
b0283	yagQ	TU-147	-			0.1323	0.3703	0.2000	0.3504	5			
b0284	yagR	TU-147	-			0.0408	0.2759	0.3040	0.4945	5			
b0285	yagS	TU-147	-			0.0143	0.4841	0.4206	0.5466	5			
b0286	yagT	TU-147	-			0.0360	0.6690	0.2848	0.2125	5	YES	YES	IG1
b0287	yagU	TU-148	+	S		0.0003	0.0336	-0.7343	-0.0385	1	YES	YES	IG1
b0288	ykgJ	TU-149	-			0.8530	0.8691	0.0476	0.0947				
b0289	yagV	TU-150	-			0.0581	0.8702	0.2076	0.2301				
b0290	yagW	TU-150	-			0.0025	0.7304	0.3171	0.2703	5	NO	NO	ORF
b0291	yagX	TU-150	-			0.0061	0.3164	0.3762	0.5292				
b0292	yagY	TU-150	-	S		0.0009	0.5232	0.4336	0.3458	4			
b0293	yagZ	TU-150	-			0.4772	0.9115	0.0546	0.0313				
b0294	ykgK	TU-150	-	S		0.0018	0.4835	0.4210	0.2903	4			
b0295	ykgL	TU-151	+	S		0.0001	0.1230	0.4548	0.0443	1	YES	NO	IG1
b0296	ykgM	TU-152	-	S	S	0.0001	0.0000	2.2565	0.2286	1	YES	NO	IG1
b0297	eaeH	TU-153	+			0.0023	0.7989	0.3578	0.3280	5	NO	NO	IG1
b0300	ykgA	TU-154	+			0.0644	0.8654	-0.2581	-0.2875	5	NO	NO	ORF
b0301	ykgB	TU-155	+			0.0230	0.8766	0.3526	0.3238				
b0302	b0302	TU-156	-			0.0029	0.3308	0.5414	0.7430				
b0303	ykgI	TU-157	-			0.3413	0.0769	0.1752	-0.2434				
b0304	ykgC	TU-157	-			0.6287	0.8505	-0.0797	-0.0265				
b0305	ykgD	TU-158	-			0.7150	0.5947	0.0401	-0.0574				
b0306	ykgE	TU-159	+			0.0086	0.8349	0.3835	0.4257				
b0307	ykgF	TU-159	+			0.4512	0.3869	-0.0948	0.1382				
b0308	ykgG	TU-159	+			0.5309	0.1886	0.1040	0.4305	5	NO	NO	ORF
b0309	b0309	TU-160	+			0.0118	0.1481	0.4690	0.7833				
b0310	ykgH	TU-160	-			0.0362	0.6992	0.3743	0.4668				
b0311	betA	TU-161	-			0.5316	0.0224	0.0716	0.5143				
b0312	betB	TU-161	-			0.9166	0.0148	-0.0120	0.4449	5	NO	NO	ORF
b0313	betI	TU-161	-			0.3623	0.0009	-0.0744	0.4998				

b0314	betT	TU-162	-		0.0557	0.2847	0.1527	0.3421				
b0315	yahA	TU-163	+		0.5960	0.3538	0.0379	0.1646				
b0316	yahB	TU-164	+		0.4818	0.3953	-0.0738	0.0416	5	NO	NO	ORF
b0317	yahC	TU-165	-		0.1234	0.3481	0.2199	0.4219	5	NO	NO	IG1
b0318	yahD	TU-166-1	+		0.4824	0.5911	0.1057	0.2323	5	NO	NO	IG1
b0319	yahE	TU-166-1	+		0.2962	0.4408	0.1459	0.2841	5			
b0320	yahF	TU-166-1	+		0.3032	0.7072	0.1271	0.1902	5			
b0321	yahG	TU-166-1	+		0.5665	0.1866	0.0799	0.3074	5			
b0322	yahH	TU-166-2	+	S	0.0006	0.5827	-0.2295	-0.1680	4			
b0323	yahI	TU-166-3	+		0.2490	0.4423	0.1404	0.2577				
b0324	yahJ	TU-166-3	+	S	0.0011	0.7960	0.5056	0.5429	4			
b0325	yahK	TU-167	+	S	0.0000	0.1439	-0.9166	-0.4802	4			
b0326	yahL	TU-168	+	S	0.0002	0.8442	0.7787	0.7393	4			
b0327	yahM	TU-169	+	S	0.0000	0.6287	0.5118	0.4443	1	YES	YES	IG1
b0328	yahN	TU-170	-		0.0124	0.5412	0.2995	0.3799	5	NO	NO	ORF
b0329	yahO	TU-171	+	S	0.0000	0.3052	-2.0779	-1.5022	1	NO	NO	IG1
b0330	prpR	TU-172	-		0.0410	0.2014	0.2150	0.4114				
b0331	prpB	TU-173	+		0.0032	0.1798	0.3101	0.1370				
b0333	prpC	TU-173	+	S	0.0011	0.7948	0.3893	0.4302	4			
b0334	prpD	TU-173	+	S	0.0002	0.4027	0.3885	0.2558	4			
b0335	prpE	TU-173	+	S	0.0002	0.8906	0.4333	0.4531	4			
b0336	codB	TU-176	+		0.0869	0.5255	-0.2937	-0.1463				
b0337	codA	TU-176	+		0.0716	0.4805	-0.3585	-0.1942				
b0338	cynR	TU-177	-		0.7277	0.1459	0.0361	-0.1678				
b0339	cynT	TU-178	+		0.0851	0.5519	0.2175	0.3327				
b0340	cynS	TU-178	+		0.5386	0.3832	0.1014	-0.1385				
b0341	cynX	TU-178	+		0.3454	0.6059	0.1091	0.2140				
b0342	lacA	TU-179	-		0.9121	0.1421	-0.0133	0.3467				
b0343	lacY	TU-179	-		0.8193	0.3328	-0.0301	0.1556				
b0344	lacZ	TU-179	-		0.0776	0.1531	0.2314	0.5086				
b0345	lacI	TU-180	-		0.6841	0.2274	-0.0271	0.1331				
b0346	mhpR	TU-181	-		0.0313	0.0023	-0.2951	0.4371				
b0347	mhpA	TU-182	+		0.0420	0.2238	0.3397	0.6120				
b0348	mhpB	TU-182	+		0.1706	0.0613	0.2124	0.6501				
b0349	mhpC	TU-182	+		0.3678	0.0183	0.1051	0.5953				
b0350	mhpD	TU-182	+		0.2202	0.1113	0.1742	0.5086				
b0351	mhpF	TU-182	+		0.0442	0.2908	0.3033	0.5105				
b0352	mhpE	TU-182	+		0.0552	0.3277	0.2921	0.4920				
b0353	mhpT	TU-183	+		0.8834	0.6608	-0.0218	0.0664				
b0354	yaiL	TU-183	+		0.8465	0.4802	-0.0166	0.0736				
b0355	yaiM	TU-184	-		0.0021	0.1594	0.2285	0.3998				
b0356	adhC	TU-184	-		0.0261	0.7996	-0.1557	-0.1326				
b0357	yaiN	TU-184	-		0.1340	0.0150	-0.1025	0.2101				
b0358	yaiO	TU-185	-		0.2805	0.6232	0.1491	0.2332				
b0359	b0359	TU-185	-		0.0172	0.1527	0.3414	0.5850				
b0360	yi21	TU-186	+		0.1257	0.0820	0.2382	0.5714				
b0361	yi22	TU-186	+	S	0.0000	0.0835	-0.7296	-0.9466	4			
b0362	b0362	TU-187	-		0.0511	0.5662	0.3011	0.3981				
b0363	yaiP	TU-187	-		0.0029	0.4678	0.4271	0.5524				
b0364	yaiS	TU-188	-	S	0.0001	0.3906	0.6026	0.4631	1	YES	YES	IG1
b0365	tauA	TU-189	+	S	0.0000	0.1985	0.6783	0.4834	1	YES	YES	IG1
b0366	tauB	TU-189	+	S	0.0001	0.3700	0.4532	0.3411	1			
b0367	tauC	TU-189	+		0.0025	0.9417	0.3809	0.3916	5			
b0368	tauD	TU-189	+	S	0.0002	0.7884	0.5239	0.4794	1			
b0369	hemB	TU-190	-		0.4278	0.8046	0.0496	0.0741				
b0370	b0370	TU-191	-	S	0.0000	0.0362	0.6472	0.3749	4			
b0371	yaiT	TU-192	+		0.3728	0.7658	-0.0825	-0.1301				
b0372	tra5	TU-193	-		0.2404	0.8883	-0.0834	-0.0649				
b0373	b0373	TU-193	-		0.2822	0.0089	-0.0566	-0.3447				
b0374	yaiU	TU-194	+	S	0.0006	0.9366	0.4337	0.4469	1	NO	NO	ORF
b0375	yaiV	TU-194	+		0.0030	0.2916	0.4466	0.2660				
b0376	yaiH	TU-195	-		0.5443	0.4798	-0.0561	-0.1811				
b0377	sbmA	TU-196	+		0.1091	0.5693	-0.2923	-0.4179				

b0378	yaiW	TU-196	+			0.0073	0.1940	0.2388	0.0923				
b0379	b0379	TU-197	-			0.5204	0.8347	0.0768	0.1183				
b0380	b0380	TU-198	+			0.5013	0.1620	0.0845	0.3290				
b0381	ddlA	TU-199	-			0.3535	0.8468	-0.0693	-0.0291				
b0382	yaiB	TU-200	+		S	0.0540	0.0001	-0.3549	1.1067				
b0383	phoA	TU-201	+			0.4923	0.0231	-0.0865	0.3128				
b0384	psiF	TU-202	+	S		0.0008	0.0889	-0.9795	-0.1931	4			
b0385	yaiC	TU-203	+			0.8892	0.2779	0.0216	0.2690				
b0386	proC	TU-204	-			0.0166	0.4143	-0.3063	-0.1795				
b0387	yaiI	TU-205	+			0.4351	0.6903	0.1200	0.1961				
b0388	aroL	TU-206	+			0.3970	0.7442	-0.1009	-0.1671				
b0389	yaiA	TU-206	+			0.0169	0.6699	-0.6055	-0.7193				
b0390	aroM	TU-206	+			0.0491	0.3084	-0.4659	-0.2142	5	NO	NO	ORF
b0391	yaiE	TU-207	+	S		0.0000	0.4515	-0.7722	-0.5885	4			
b0392	b0392	TU-208	+			0.0938	0.5687	-0.2570	-0.1358				
b0393	yaiD	TU-209	-			0.2020	0.3088	0.0966	0.2171				
b0394	yajF	TU-210	+			0.8342	0.0928	-0.0291	0.2920				
b0396	araJ	TU-211	-			0.6007	0.9517	-0.0551	-0.0640				
b0397	sbcC	TU-212	-			0.0884	0.4222	0.2209	0.3457				
b0398	sbcD	TU-212	-			0.1326	0.0582	0.1221	-0.0758				
b0399	phoB	TU-213	+			0.3836	0.4831	0.1107	0.2143				
b0400	phoR	TU-213	+			0.2127	0.6207	0.1546	0.2427				
b0401	brnQ	TU-214	+			0.0051	0.0015	-0.2660	-0.7955	5	YES	YES	IG1
b0402	proY	TU-214	+			0.0074	0.3550	0.3063	0.1946	5			
b0403	malZ	TU-215	+			0.0104	0.3458	0.3266	0.1788				
b0404	yajB	TU-216	-			0.8122	0.9712	0.0255	0.0204	5	YES	YES	IG1
b0405	queA	TU-217	+	S		0.0002	0.0701	0.8576	0.4555	1	YES	YES	IG1
b0406	tgt	TU-218	+			0.4820	0.1728	-0.1308	-0.4422				
b0407	yajC	TU-218	+			0.2818	0.2036	-0.1545	-0.3729				
b0408	secD	TU-218	+			0.1361	0.4138	-0.3025	-0.5118				
b0409	secF	TU-218	+			0.0150	0.1025	-0.6226	-1.1027	5	NO	NO	IG1
b0410	yajD	TU-220	+			0.9894	0.2985	-0.0009	0.2081				
b0411	tsx	TU-221	-			0.0844	0.4035	-0.3625	-0.1339				
b0412	yajI	TU-222	-	S		0.0014	0.7126	0.2874	0.3399	4			
b0413	ybaD	TU-223	+			0.2182	0.4530	0.1518	0.0432				
b0414	ribD	TU-223	+			0.0923	0.0958	0.2119	-0.0621				
b0415	ribH	TU-223	+			0.7327	0.3765	0.0595	-0.1098				
b0416	nusB	TU-223	+			0.2264	0.9590	-0.1821	-0.1732				
b0417	thiL	TU-223	+			0.3190	0.8024	-0.1626	-0.2116				
b0418	pgpA	TU-223	+			0.1698	0.9102	-0.1852	-0.1640				
b0419	yajO	TU-224	-			0.0402	0.3879	-0.4161	-0.1546	5			
b0420	dxs	TU-224	-			0.1856	0.4333	0.1509	0.2613	5	NO	YES	IG1
b0421	ispA	TU-224	-			0.2405	0.2321	-0.2321	-0.4948				
b0422	xseB	TU-224	-			0.3226	0.5935	0.1008	0.0226				
b0423	yajK	TU-226	+			0.4504	0.3864	0.1093	-0.0528				
b0424	thiJ	TU-227	-			0.0482	0.4545	-0.2691	-0.1330				
b0425	apbA	TU-227	-	S		0.0016	0.3489	-0.5042	-0.3668	4			
b0426	yajQ	TU-228	+			0.0468	0.1839	-0.2363	-0.0333				
b0427	yajR	TU-229	-			0.8549	0.6373	0.0220	0.1066				
b0428	cyoE	TU-230	-	S	S	0.0001	0.0000	-0.7318	0.4418	1			
b0429	cyoD	TU-230	-	S		0.0014	0.0643	-0.7245	-0.1282	1			
b0430	cyoC	TU-230	-	S		0.0001	0.0008	-0.6344	0.2227	1			
b0431	cyoB	TU-230	-			0.0951	0.0737	-0.1462	-0.5336	5			
b0432	cyoA	TU-230	-	S		0.0002	0.1217	-0.3815	0.0145	1	YES	YES	IG1
b0433	ampG	TU-231-1	-			0.9682	0.0017	-0.0032	0.4091				
b0434	yajG	TU-231-2	-			0.0041	0.2357	-0.3359	-0.5754	5	YES	YES	IG1
b0435	bolA	TU-232	+	S		0.0021	0.0064	-0.7083	0.0568	1	YES	YES	IG1
b0436	tig	TU-233	+			0.6005	0.8705	-0.0512	-0.0264	5	YES	YES	IG1
b0437	clpP	TU-234	+			0.3108	0.6083	-0.0748	-0.1301	5	YES	YES	IG1
b0438	clpX	TU-234	+			0.1854	0.9894	0.1441	0.1460	5			
b0439	lon	TU-235	+			0.1894	0.5970	-0.2186	-0.3167	5	YES	YES	IG1
b0440	hupB	TU-236	+	S		0.0006	0.5501	-0.3601	-0.2885	4			
b0441	ybaU	TU-237	+			0.2309	0.2006	0.1398	-0.0470				

b0442	ybaV	TU-238	+	S		0.0012	0.9981	0.3891	0.3895	4			
b0443	ybaW	TU-238	+			0.2291	0.0798	-0.1305	0.1679				
b0444	ybaX	TU-239	-			0.3204	0.3098	-0.0705	0.0615				
b0445	ybaE	TU-239	-			0.0091	0.9174	0.2493	0.2627				
b0446	cof	TU-240	+			0.0671	0.5091	0.0948	0.0067				
b0447	ybaO	TU-241	+			0.0392	0.8034	0.2372	0.2022				
b0448	mdlA	TU-241	+			0.0776	0.4390	0.1818	0.2759				
b0449	mdlB	TU-241	+			0.1243	0.8216	0.2074	0.2424				
b0450	glnK	TU-242	+			0.2528	0.6583	0.4824	0.1810	5	NO	NO	IG1
b0451	amtB	TU-242	+			0.6774	0.9623	0.0849	0.0708	5			
b0452	tesB	TU-243	-			0.0027	0.0039	-0.2389	0.0934				
b0453	ybaY	TU-244	+	S	S	0.0000	0.0000	-1.1582	-0.0957	4			
b0454	ybaZ	TU-245	-	S		0.0001	0.8949	-0.4162	-0.4377	4			
b0455	ffs	TU-246-1	+			0.2902	0.6527	0.2649	0.4554	5	YES	YES	IG1
b0456	ybaA	TU-246-2	+			0.2697	0.4291	0.1964	0.4061				
b0457	ylaB	TU-247	-			0.8873	0.9720	-0.0234	-0.0133				
b0458	ylaC	TU-248	-			0.2861	0.0704	-0.1553	0.2545				
b0459	ylaD	TU-248	-	S		0.0018	0.0018	-0.3379	0.1149	4			
b0460	hha	TU-249	-			0.1269	0.9446	-0.1889	-0.1776				
b0461	ybaJ	TU-249	-			0.1461	0.4740	-0.2974	-0.0997				
b0462	acrB	TU-250	-			0.0073	0.8850	-0.4561	-0.4857	5	NO	NO	ORF
b0463	acrA	TU-250	-			0.0250	0.7383	-0.2997	-0.3455				
b0464	acrR	TU-251	+			0.7718	0.9117	0.0340	0.0510				
b0465	aefA	TU-252	+			0.7965	0.7970	0.0268	0.0682				
b0466	ybaM	TU-253	-			0.8751	0.2464	0.0191	0.2568				
b0467	priC	TU-253	-			0.9746	0.2233	-0.0021	0.1150				
b0468	ybaN	TU-254-1	+			0.1587	0.9941	0.2554	0.2570				
b0469	apt	TU-254-2	+			0.0709	0.0660	0.1501	-0.1420	5	NO	YES	IG1
b0470	dnaX	TU-255	+			0.0038	0.2903	0.2781	0.1769				
b0471	ybaB	TU-255	+			0.6306	0.0081	0.0450	-0.2958				
b0472	recR	TU-255	+			0.0910	0.1456	0.2102	-0.0244				
b0473	htpG	TU-256	+			0.2631	0.8785	-0.1289	-0.1533				
b0474	adk	TU-257	+			0.3433	0.9987	0.0907	0.0905				
b0475	hemH	TU-258	+			0.2730	0.9233	0.1272	0.1407				
b0476	ybaC	TU-259	-			0.0083	0.7223	0.3726	0.4267	5	YES	YES	IG1
b0477	gsk	TU-260	+			0.1493	0.1060	0.2547	-0.0779	5	YES	YES	IG1
b0478	ybaL	TU-261	-			0.7226	0.8370	0.0311	0.0082				
b0479	fsr	TU-262	-			0.0291	0.5666	0.2308	0.3115				
b0480	ushA	TU-263	+			0.0183	0.2078	-0.2312	-0.0841				
b0481	ybaK	TU-264	-			0.1160	0.7974	0.1121	0.0834	5	NO	NO	ORF
b0482	ybaP	TU-265	-			0.6589	0.6072	0.0311	-0.0469				
b0483	ybaQ	TU-266	+	S		0.0018	0.8676	-0.2419	-0.2885	4			
b0484	ybaR	TU-267	-			0.7366	0.1269	-0.0244	-0.6554	5	YES	YES	IG1
b0485	ybaS	TU-268	+	S		0.0000	0.6063	-1.5249	-1.2735	1	YES	YES	IG1
b0486	ybaT	TU-268	+	S		0.0000	0.7159	-0.9557	-0.7846	1			
b0487	ybbI	TU-269	+			0.0095	0.3351	-0.2986	-0.5270				
b0488	ybbJ	TU-270	-			0.6472	0.4210	-0.0533	0.0762	5			
b0489	ybbK	TU-270	-			0.6623	0.0478	0.0604	0.4426	5	YES	YES	IG1
b0490	ybbL	TU-271	+			0.0419	0.3878	-0.3963	-0.1912	5	YES	YES	IG1
b0491	ybbM	TU-271	+			0.0046	0.7378	-0.5537	-0.4837	5	NO	NO	ORF
b0492	ybbN	TU-272	-			0.2028	0.6317	0.0592	0.0071				
b0493	ybbO	TU-272	-			0.5044	0.9219	0.0582	0.0460				
b0494	tesA	TU-272	-			0.0027	0.7372	-0.4557	-0.5113				
b0495	ybbA	TU-273	+			0.3699	0.7622	-0.1101	-0.0609				
b0496	ybbP	TU-273	+			0.5645	0.3835	-0.1040	0.0893				
b0497	rhsD	TU-274	+			0.5030	0.7155	-0.1764	-0.3034	5	YES	YES	IG1
b0498	ybbC	TU-274	+			0.6422	0.3202	0.1043	0.4133	5			
b0499	b0499	TU-274	+			0.3333	0.8432	0.1647	0.1179	5			
b0500	ybbD	TU-274	+			0.3512	0.7064	0.1963	0.2912	5			
b0501	b0501	TU-274	+			0.1442	0.5606	0.2676	0.4114	5			
b0502	b0502	TU-275-1	-			0.8875	0.3626	0.0109	-0.1073	5	NO	NO	ORF
b0503	ybbB	TU-275-2	-			0.1989	0.7420	0.1209	0.0792	5	NO	NO	IG1
b0504	ybbS	TU-275-3	-			0.2421	0.6609	0.1141	0.1833	5	NO	NO	IG1

b0505	ybbT	TU-276	+		0.0605	0.9652	0.2670	0.2592	5	NO	NO	IG1
b0506	ybbU	TU-277	+	S	0.0001	0.1815	-0.4357	-0.5879	4			
b0507	gcl	TU-278	+		0.0411	0.4418	0.2437	0.3767				
b0508	gip	TU-278	+		0.0308	0.8549	0.4007	0.4405				
b0509	ybbQ	TU-279	+		0.0090	0.7576	0.5057	0.5697	5	NO	NO	ORF
b0510	ybbV	TU-279	+	S	0.0005	0.2713	0.6315	0.4370	4			
b0511	ybbW	TU-279	+		0.0035	0.5809	0.5802	0.4714				
b0512	ybbX	TU-279	+		0.0183	0.7404	0.2968	0.2444	5	NO	NO	ORF
b0513	ybbY	TU-279	+		0.0492	0.9085	0.2378	0.2191				
b0514	ybbZ	TU-279	+		0.3712	0.6958	0.0976	0.0417				
b0515	ylbA	TU-280	-		0.3369	0.2586	-0.1247	0.1107				
b0516	ylbB	TU-280	-		0.0512	0.3826	0.1938	0.3057				
b0517	ylbC	TU-280	-	S	0.0019	0.3113	0.4996	0.3363	4			
b0518	fdrA	TU-281	+	S	0.0003	0.8811	0.4367	0.4562	4			
b0519	ylbE	TU-281	+	S	0.0000	0.8272	0.4764	0.4467	4			
b0520	ylbF	TU-281	+		0.0098	0.6949	0.2485	0.3055				
b0521	arcC	TU-281	+	S	0.0007	0.9663	0.4127	0.4175	4			
b0522	purK	TU-282	-		0.1111	0.9190	-0.1735	-0.1862				
b0523	purE	TU-282	-		0.0328	0.3385	0.1783	0.0806				
b0524	ybbF	TU-283	-		0.3391	0.0499	0.0936	-0.1350	5			
b0525	ppiB	TU-283	-		0.8925	0.8490	-0.0137	-0.0416	5	YES	YES	IG1
b0526	cysS	TU-284	+		0.1485	0.4695	0.1910	0.3104	5	YES	YES	IG1
b0527	ybcI	TU-285	-		0.0567	0.4495	0.2123	0.3438				
b0528	ybcJ	TU-286	-		0.1041	0.8246	0.2422	0.2865	5			
b0529	folD	TU-286	-		0.1041	0.7682	-0.2198	-0.2668	5	YES	YES	IG1
b0530	sfmA	TU-287	+		0.1694	0.5489	0.2247	0.3755	5	YES	YES	IG1
b0531	sfmC	TU-288-1	+		0.0192	0.5202	0.5321	0.7027	5	NO	NO	IG1
b0532	sfmD	TU-288-1	+		0.0830	0.2099	0.3289	0.6404	5			
b0533	sfmH	TU-288-2	+		0.2115	0.2172	0.2016	0.4782	5	NO	NO	ORF
b0534	sfmF	TU-288-2	+		0.1142	0.2993	0.1967	0.3929	5	NO	NO	ORF
b0535	fimZ	TU-289	-		0.1756	0.9737	0.2421	0.2340				
b0536	argU	TU-290	+		0.0178	0.9030	0.5359	0.5648	5	YES	YES	IG1
b0537	intD	TU-291	-		0.0634	0.6400	-0.2946	-0.3828				
b0538	b0538	TU-292	+		0.0650	0.6382	0.2304	0.1538				
b0539	b0539	TU-293	-		0.0041	0.3776	0.4254	0.2618				
b0542	b0542	TU-294	+		0.0033	0.9583	0.3813	0.3705				
b0543	emrE	TU-294	+		0.6636	0.1581	-0.0416	0.1497				
b0544	ybcK	TU-295	+		0.2003	0.3108	0.1825	0.3869				
b0545	ybcL	TU-296	+		0.3221	0.5701	-0.1058	0.0109	5	YES	NO	IG1
b0546	ybcM	TU-296	+		0.0085	0.6305	-0.2707	-0.1654	5			
b0547	ybcN	TU-297	+		0.0194	0.1681	0.4164	0.7098				
b0548	ninE	TU-297	+		0.0564	0.9525	0.2777	0.2895				
b0549	ybcO	TU-297	+		0.0227	0.0948	0.2515	0.4896				
b0550	rus	TU-297	+	S	0.0008	0.9392	0.3963	0.3856	4			
b0551	ybcQ	TU-298	+		0.0021	0.5591	0.5161	0.6236	3	YES	YES	IG2
b0553	nmpC	TU-299	-		0.1795	0.2164	-0.1520	0.1562	5	YES	YES	IG1
b0554	ybcR	TU-300	+		0.0174	0.2732	0.4102	0.2050	5	YES	YES	IG1
b0555	ybcS	TU-300	+		0.0349	0.0459	0.2458	-0.0310	5			
b0556	ybcT	TU-300	+		0.0518	0.0050	0.1827	-0.1928	5			
b0557	ybcU	TU-301	-		0.0808	0.7930	0.3860	0.2803				
b0558	ybcV	TU-302	-	S	0.0000	0.0002	0.8047	0.1670	4			
b0559	ybcW	TU-303	+		0.4688	0.0019	0.0863	-0.5071	5	YES	NO	IG1
b0561	ybcX	TU-304	+	S	0.0004	0.9633	0.7737	0.7627	1	NO	NO	IG1
b0562	ybcY	TU-305	-		0.0266	0.1667	0.2483	0.0336				
b0563	ylcE	TU-306	+		0.0313	0.1014	0.2556	-0.0577				
b0564	appY	TU-307	+		0.0245	0.0003	-0.3476	-1.3054	5	YES	YES	IG1
b0565	ompT	TU-308	-		0.0424	0.9835	-0.2330	-0.2299				
b0566	envY	TU-308	-		0.0570	0.8605	0.4063	0.4575				
b0567	ybcH	TU-309-1	-		0.0103	0.5728	0.2234	0.1444				
b0568	nfrA	TU-309-2	-		0.0256	0.7409	0.2731	0.3269	5			
b0569	nfrB	TU-309-2	-		0.4312	0.4134	-0.0672	0.0908	5	NO	NO	IG1
b0570	ybcZ	TU-310	-		0.2905	0.1715	-0.2269	-0.7857	5			
b0571	ylcA	TU-310	-		0.6057	0.1080	-0.1240	-0.8861	5	YES	YES	IG1

b0572	ylcB	TU-311	+		0.2901	0.4430	-0.9869	-2.0872	5	YES	YES	IG1
b0573	ylcC	TU-311	+		0.2163	0.6971	-1.2088	-1.8037	5			
b0574	ylcD	TU-311	+		0.3617	0.1546	-0.3930	-1.6671	5			
b0575	ybdE	TU-311	+		0.6273	0.2288	-0.1671	-0.9478	5			
b0576	pheP	TU-312	+		0.9469	0.2776	0.0071	0.1892				
b0577	ybdG	TU-313	-		0.0059	0.1942	-0.3845	-0.1357				
b0578	nfnB	TU-314-1	-		0.0114	0.5249	-0.3169	-0.2246				
b0579	ybdF	TU-314-2	-		0.9008	0.2332	0.0112	0.2025				
b0580	ybdJ	TU-314-3	-		0.0027	0.0065	-0.7262	0.0053				
b0581	ybdK	TU-314-4	-		0.8369	0.1197	-0.0350	0.3300	5	YES	YES	IG1
b0583	entD	TU-315	-		0.1641	0.4745	0.3212	0.5060	5	NO	YES	IG2
b0584	fepA	TU-315	-		0.2766	0.8481	0.4235	0.5015	5	NO	YES	IG1
b0585	fes	TU-316	+		0.0960	0.4304	0.3256	0.5111	5	NO	YES	IG1
b0586	entF	TU-316	+		0.5078	0.4429	0.1786	0.4180	5			
b0587	fepE	TU-316	+		0.0561	0.4974	0.3564	0.5043	5			
b0588	fepC	TU-317	-		0.2005	0.3174	0.2594	0.5044				
b0589	fepG	TU-317	-		0.1301	0.5262	0.3019	0.4411				
b0590	fepD	TU-317	-		0.0271	0.0603	0.3992	0.7485				
b0591	ybdA	TU-318	+		0.0458	0.9533	0.4354	0.4486				
b0592	fepB	TU-319	-		0.1132	0.9292	0.2744	0.2569				
b0593	entC	TU-320	+		0.0982	0.5729	0.5848	0.3867				
b0594	entE	TU-320	+		0.2964	0.7035	0.3037	0.1859				
b0595	entB	TU-320	+		0.8429	0.6180	-0.0550	0.0952				
b0596	entA	TU-320	+		0.1546	0.9739	0.2528	0.2589				
b0597	ybdB	TU-320	+		0.4727	0.9127	0.2238	0.1877				
b0598	cstA	TU-321	+		0.7714	0.1462	-0.0293	0.2005				
b0599	ybdH	TU-322	-		0.9216	0.4951	0.0061	0.0768				
b0600	ybdL	TU-323	+		0.0300	0.9163	-0.2926	-0.2755	5	NO	NO	ORF
b0601	ybdM	TU-324	-		0.0550	0.3000	-0.1824	-0.0696				
b0602	ybdN	TU-324	-		0.4304	0.7121	0.0874	0.1512	5	NO	NO	ORF
b0603	ybdO	TU-325	-		0.0523	0.1568	0.2119	-0.0068	5	YES	YES	IG1
b0604	dsbG	TU-326	-		0.0466	0.4603	0.2766	0.1394				
b0605	ahpC	TU-327	+		0.0702	0.7499	-0.2500	-0.3005				
b0606	ahpF	TU-327	+		0.6115	0.5340	0.0474	-0.0583				
b0607	ybdQ	TU-328	-	S	0.0000	0.0284	-1.1994	-0.7049	4			
b0608	ybdR	TU-329	+		0.8901	0.9111	-0.0200	0.0118				
b0609	b0609	TU-329	+		0.9476	0.6544	-0.0073	0.0748				
b0610	rnk	TU-330	-		0.0155	0.9046	0.2683	0.2850	5	YES	YES	IG1
b0611	rna	TU-331	-		0.9330	0.9821	0.0095	0.0058				
b0612	ybdS	TU-331	-		0.1041	0.1145	0.2236	0.5410				
b0613	citG	TU-331	-		0.0097	0.2220	0.4888	0.7404				
b0614	ybdU	TU-331	-		0.1111	0.3396	0.2339	0.4621	5	NO	NO	ORF
b0615	citF	TU-331	-		0.2924	0.1207	0.1538	0.4750				
b0616	citE	TU-331	-		0.0569	0.2029	0.3055	0.5599				
b0617	citD	TU-331	-		0.0363	0.2607	0.3349	0.5545				
b0618	citC	TU-331	-		0.4068	0.1329	0.1129	0.4123				
b0619	citA	TU-332	+		0.9376	0.3933	0.0086	0.1392				
b0620	citB	TU-332	+		0.0408	0.1800	0.1458	0.2681				
b0621	dcuC	TU-333	-		0.5385	0.0045	0.1040	-0.6483	5	YES	YES	IG1
b0622	crcA	TU-334	+		0.1007	0.3721	0.3085	0.0473	5	YES	YES	IG1
b0623	cspE	TU-335	+		0.0036	0.4777	-0.4881	-0.3164				
b0624	crcB	TU-336	-		0.3322	0.7906	-0.0806	-0.0367				
b0625	ybeH	TU-337-1	+		0.7958	0.0532	-0.0341	0.3631				
b0626	ybeM	TU-337-1	+		0.5449	0.4156	0.0616	0.1916				
b0627	ybeC	TU-337-2	+		0.5670	0.8335	-0.0884	-0.0337	5	NO	NO	IG1
b0628	lipA	TU-338-1	-		0.8912	0.9896	0.0146	0.0167	5	YES	YES	IG1
b0629	ybeF	TU-338-2	-	S	0.0020	0.0355	0.3698	0.0893	4			
b0630	lipB	TU-339	-		0.4238	0.0250	0.0726	-0.2021				
b0631	ybeD	TU-340-1	-	S	0.0001	0.6000	0.8053	0.6966	1	YES	YES	IG1
b0632	dacA	TU-340	-		0.1401	0.0820	0.2496	-0.0756	5	NO	NO	ORF
b0633	rlpA	TU-340	-		0.5192	0.0534	-0.1223	-0.5581				
b0634	mrdB	TU-340	-		0.9216	0.4309	0.0130	-0.1124				
b0635	mrdA	TU-340	-	S	0.0001	0.6005	0.4681	0.5232	1	NO	NO	ORF

b0636	ybeA	TU-340	-		0.0050	0.7096	0.3353	0.3885				
b0637	ybeB	TU-340	-		0.1740	0.3295	-0.2777	-0.5090				
b0638	phpB	TU-341	-		0.8139	0.5149	-0.0171	-0.0913				
b0639	ybeN	TU-341	-		0.7484	0.3038	-0.0271	-0.1593				
b0640	holA	TU-341	-		0.1090	0.1780	-0.2462	-0.5206				
b0641	rlpB	TU-341	-		0.5472	0.0601	-0.1113	-0.5031				
b0642	leuS	TU-341	-		0.5834	0.3309	-0.0947	-0.2873				
b0643	ybeL	TU-342	+		0.0044	0.1747	-0.6442	-0.1755				
b0644	ybeQ	TU-343	-		0.0227	0.5572	0.3375	0.4637				
b0645	ybeR	TU-344	+		0.0373	0.5754	0.3878	0.5097				
b0646	ybeS	TU-344	+		0.0222	0.6583	0.4324	0.5272	5	NO	NO	ORF
b0647	ybeT	TU-345	-		0.0258	0.9770	0.4320	0.4390				
b0648	ybeU	TU-346	+		0.0915	0.3896	0.2172	0.3811				
b0649	ybeV	TU-346	+		0.4351	0.7649	0.1335	0.0671				
b0650	ybeW	TU-347	-		0.1420	0.2620	0.2130	0.4488				
b0651	ybeK	TU-348	-		0.7466	0.0212	-0.0404	0.3176				
b0652	gltL	TU-349	-		0.7044	0.1128	0.0509	0.3833	5			
b0653	gltK	TU-349	-		0.0303	0.5346	-0.5247	-0.3476	5			
b0654	gltJ	TU-349	-		0.8903	0.2716	0.0140	0.2153	5	NO	NO	ORF
b0655	ybeJ	TU-349	-		0.0275	0.9346	-0.2088	-0.1887	5	NO	NO	IG1
b0657	Int	TU-350	-		0.0109	0.0018	-0.1774	0.1438				
b0658	ybeX	TU-350	-	S	0.0000	0.0155	-0.8472	-0.4346	4			
b0659	ybeY	TU-350	-		0.0070	0.4584	-0.2341	-0.1288				
b0660	ybeZ	TU-350	-	S	0.0000	0.8244	-0.6452	-0.6741	4			
b0661	yleA	TU-351	-		0.5342	0.3373	0.0656	-0.0710				
b0662	yleB	TU-352	+	S	0.0004	0.8887	-0.3702	-0.3866	4			
b0664	glnX	TU-353	-		0.1002	0.5306	0.4261	0.2226	5			
b0665	glnV	TU-353	-		0.0496	0.6156	0.5280	0.3643	5			
b0666	metU	TU-353	-		0.3385	0.9323	0.1524	0.1368	5			
b0668	glnW	TU-353	-		0.0595	0.1863	0.5123	0.1011	5			
b0672	leuW	TU-353	-		0.4362	0.1864	-0.1122	-0.3551	5			
b0673	metT	TU-353	-		0.2915	0.6561	0.1659	0.0850	5	YES	NO	IG1
b0674	asnB	TU-354	-		0.0807	0.0720	0.1850	-0.0935	5	NO	NO	IG1
b0675	nagD	TU-355	-		0.0444	0.0315	-0.2101	-0.4886	5	NO	YES	IG1
b0676	nagC	TU-355	-		0.1131	0.1288	-0.0843	-0.2061				
b0677	nagA	TU-355	-		0.1702	0.9638	-0.1349	-0.1406				
b0678	nagB	TU-355	-		0.0427	0.7461	-0.1731	-0.2099				
b0679	nagE	TU-356	+		0.3156	0.5929	0.0815	0.1336				
b0680	glnS	TU-357	+		0.5827	0.2263	0.0726	-0.1287	5	YES	YES	IG1
b0681	ybfM	TU-358	+	S	0.0020	0.1990	0.2951	0.4767	1	NO	NO	IG1
b0682	ybfN	TU-358	+		0.0220	0.5841	0.3582	0.4580				
b0683	fur	TU-359	-		0.4117	0.1422	-0.0893	0.1322				
b0684	fldA	TU-359	-		0.2981	0.3636	0.0967	-0.0119				
b0685	ybfE	TU-360-1	-		0.3418	0.8548	0.0983	0.0742	5	YES	NO	IG1
b0686	ybfF	TU-360-2	-		0.9181	0.6792	-0.0099	0.0422				
b0687	seqA	TU-361	+		0.6756	0.7587	-0.0367	-0.0026				
b0688	pgm	TU-361	+		0.0087	0.1136	-0.3840	-0.6401				
b0689	ybfP	TU-362	+		0.2843	0.2806	0.1263	0.3520				
b0690	ybfG	TU-363	-		0.0169	0.8279	0.3495	0.3980				
b0691	ybfH	TU-364	-		0.0064	0.4691	0.4504	0.2901	5	NO	NO	IG1
b0692	potE	TU-365	-		0.0610	0.3873	0.2751	0.4752				
b0693	speF	TU-365	-		0.1334	0.1586	0.2530	0.5764				
b0694	kdpE	TU-366	-		0.4608	0.4692	0.0427	0.1213				
b0695	kdpD	TU-366	-		0.3039	0.3129	0.1118	0.2993	5	NO	NO	ORF
b0696	kdpC	TU-366	-		0.8295	0.5103	0.0232	0.1494				
b0697	kdpB	TU-366	-		0.6446	0.7605	0.0583	-0.0048				
b0698	kdpA	TU-366	-		0.8229	0.8017	0.0323	-0.0171				
b0699	ybfA	TU-367	+		0.4291	0.4016	-0.0808	-0.2543				
b0700	rhsC	TU-368	+		0.2085	0.9160	0.2462	0.2720	5	NO	NO	IG1
b0702	ybfB	TU-368	+		0.2800	0.4969	0.2319	0.4219	5			
b0703	b0703	TU-369	+		0.4188	0.4231	0.1203	0.2703				
b0704	ybfC	TU-369	+		0.8130	0.5832	0.0463	0.1829	5	NO	NO	ORF
b0705	ybfL	TU-370	+		0.2623	0.0262	-0.1223	0.2270	5	YES	NO	IG1

b0706	ybfD	TU-371	+			0.0091	0.0883	0.3047	-0.2389	5	NO	NO	IG1
b0707	ybgA	TU-372	+	S		0.0002	0.1408	-0.7310	-0.3160	4			
b0708	phrB	TU-372	+			0.9795	0.0981	-0.0040	0.3422	5	NO	NO	ORF
b0709	ybgH	TU-373	-			0.2575	0.3203	0.0854	0.2009				
b0710	ybgI	TU-374	+			0.0027	0.5761	-0.2392	-0.1896				
b0711	ybgJ	TU-374	+			0.4635	0.3825	0.0714	-0.0525				
b0712	ybgK	TU-374	+			0.4054	0.0462	-0.0773	-0.3406				
b0713	ybgL	TU-374	+			0.0890	0.0262	0.1747	-0.1468				
b0714	nei	TU-374	+			0.2093	0.0154	0.1113	-0.2133	5	NO	NO	ORF
b0715	abrB	TU-375	-			0.1181	0.6709	0.1114	0.0662				
b0716	ybgO	TU-376	-			0.0078	0.3524	0.3430	0.1995	5	NO	NO	ORF
b0717	ybgP	TU-376	-	S		0.0003	0.0182	0.3925	0.0958	4			
b0718	ybgQ	TU-376	-			0.0072	0.5986	0.3416	0.4170				
b0719	ybgD	TU-376	-	S		0.0001	0.7347	0.6464	0.7037	1	YES	YES	IG1
b0720	gltA	TU-377	-	S		0.0000	0.3372	-0.6129	-0.3929	1	YES	YES	IG1
b0721	sdhC	TU-378	+			0.1640	0.0012	-0.3756	0.7551	5	YES	YES	IG1
b0722	sdhD	TU-378	+			0.0728	0.0013	-0.5510	0.6648	5			
b0723	sdhA	TU-378	+			0.0256	0.0036	-0.6030	0.2537	5			
b0724	sdhB	TU-378	+			0.0178	0.0149	-0.8290	0.0306	5			
b0725	b0725	TU-378	+			0.8506	0.2398	0.0466	0.3701	5			
b0726	sucA	TU-378	+			0.0101	0.3865	-0.6549	-0.4510	5			
b0727	sucB	TU-378	+	S		0.0011	0.0338	-0.6416	-0.2345	1			
b0728	sucC	TU-378	+	S	S	0.0003	0.0001	-0.5170	0.0682	1			
b0729	sucD	TU-378	+			0.0046	0.0097	-0.5350	0.0811	5	NO	NO	IG1
b0730	farR	TU-379	-			0.5314	0.8510	-0.0820	-0.1164				
b0731	hrsA	TU-380	+			0.0390	0.1592	0.3121	0.6214				
b0732	ybgG	TU-380	+			0.2164	0.9963	0.1704	0.1713				
b0733	cydA	TU-381	+	S		0.0003	0.1920	-0.7606	-1.0131	1	YES	YES	IG1
b0734	cydB	TU-381	+			0.0087	0.8882	-0.5330	-0.5056	5			
b0735	ybgE	TU-382	+			0.0216	0.7409	-0.3853	-0.4460				
b0736	ybgC	TU-383	+			0.0446	0.0151	-0.3313	-0.7998				
b0737	tolQ	TU-383	+			0.0822	0.1192	-0.2500	-0.4941	5	NO	NO	IG1
b0738	tolR	TU-383	+			0.1718	0.1279	-0.1599	-0.3618				
b0739	tolA	TU-383	+			0.9297	0.5447	0.0074	-0.0816				
b0740	tolB	TU-384	+			0.0024	0.2767	-0.1873	-0.0994	5	YES	YES	IG1
b0741	pal	TU-384	+			0.0029	0.7925	-0.4488	-0.4883	5			
b0742	ybgF	TU-384	+			0.1766	0.5159	-0.1488	-0.2404	5			
b0743	lysT	TU-385	+			0.4053	0.7806	0.1092	0.0626				
b0744	valT	TU-385	+			0.8361	0.4722	0.0228	-0.0964				
b0745	lysW	TU-385	+			0.3293	0.7610	0.1652	0.1019				
b0746	valZ	TU-385	+			0.5728	0.6670	-0.0647	-0.1358				
b0747	lysY	TU-385	+			0.3657	0.5852	0.1152	0.0264				
b0748	lysZ	TU-385	+			0.3294	0.9016	0.1268	0.1054				
b0749	lysQ	TU-385	+			0.2466	0.9836	0.1395	0.1428				
b0750	nadA	TU-386	+	S		0.0010	0.1953	-0.3797	0.0529	1	NO	NO	ORF
b0751	pnuC	TU-386	+	S		0.0000	0.0783	-0.7964	-0.2740	4			
b0752	ybgR	TU-387	-	S		0.0006	0.4278	-0.3287	-0.2070	4			
b0753	b0753	TU-388	-			0.0058	0.0012	-0.4498	0.2389				
b0754	aroG	TU-389	+			0.4959	0.9885	-0.0772	-0.0792				
b0755	gpmA	TU-390	-			0.2625	0.2052	-0.1397	0.1582				
b0756	galM	TU-391	-			0.1610	0.1516	0.1919	-0.0644	5			
b0757	galK	TU-391	-	S		0.0001	0.0011	0.5104	0.0877	1			
b0758	galT	TU-391	-			0.0391	0.0075	0.6209	-0.2675	5			
b0759	galE	TU-391	-	S		0.0000	0.0040	1.0447	0.5393	1	YES	YES	IG1
b0760	modF	TU-392	-			0.0138	0.2407	-0.2531	-0.1094				
b0761	modE	TU-392	-			0.5931	0.2590	0.0402	-0.0825				
b0762	b0762	TU-393	+	S		0.0017	0.8186	-0.6988	-0.7588	4			
b0763	modA	TU-394	+			0.0149	0.7588	-0.1813	-0.1511				
b0764	modB	TU-394	+			0.0061	0.6619	-0.3054	-0.3706				
b0765	modC	TU-394	+			0.6829	0.3754	-0.0198	-0.0916				
b0766	ybhA	TU-395	-			0.9501	0.0174	0.0048	-0.2551	5	YES	NO	IG1
b0767	ybhE	TU-396	+	S		0.0000	0.6438	-0.7341	-0.5923	1	YES	NO	IG1
b0768	ybhD	TU-397	-			0.0128	0.8410	0.3425	0.3092				

b0769	ybhH	TU-398	+		0.0044	0.2547	0.6074	0.8809				
b0770	ybhI	TU-398	+		0.0039	0.3347	0.5369	0.7376	5	NO	NO	IG1
b0771	ybhJ	TU-399	+		0.0453	0.5884	0.2519	0.3562	5	NO	NO	ORF
b0772	ybhC	TU-400	-		0.1025	0.0213	-0.2660	-0.7283				
b0773	ybhB	TU-401	-	S	0.0005	0.8604	-0.3529	-0.3791	4			
b0774	bioA	TU-402	-		0.0173	0.2896	0.2559	0.4343				
b0775	bioB	TU-403	+		0.3040	0.0409	0.1121	-0.2452				
b0776	bioF	TU-403	+		0.6084	0.2184	0.0875	-0.1681				
b0777	bioC	TU-403	+		0.0039	0.3812	0.3187	0.2044				
b0778	bioD	TU-403	+		0.3736	0.6923	0.1317	0.0630				
b0779	uvrB	TU-404	+		0.7958	0.3819	-0.0298	0.1411	5	YES	YES	IG1
b0780	ybhK	TU-405	-		0.5002	0.7072	-0.0750	-0.1268				
b0781	moaA	TU-406	+	S	0.0018	0.1261	-0.5756	-0.3138	4			
b0782	moaB	TU-406	+	S	0.0001	0.1596	-0.4681	-0.2280	4			
b0783	moaC	TU-406	+	S	0.0007	0.7896	-0.3278	-0.3564	4			
b0784	moaD	TU-406	+		0.0755	0.2755	-0.2050	-0.0538				
b0785	moaE	TU-406	+	S	0.0002	0.0457	-0.4170	-0.1409	4			
b0786	ybhL	TU-407	+	S	0.0000	0.1410	-0.6178	-0.3910	4			
b0787	ybhM	TU-408	+		0.5193	0.0606	-0.0930	0.2660	3	NO	NO	IG2
b0788	ybhN	TU-409	-		0.0039	0.0230	-0.2903	0.1444	3	NO	NO	IG2
b0789	ybhO	TU-409	-	S	0.0019	0.1676	-0.3929	-0.0806	4			
b0790	ybhP	TU-409	-		0.0213	0.3610	-0.3015	-0.0941				
b0791	ybhQ	TU-409	+		0.9869	0.7197	0.0014	0.0460				
b0792	ybhR	TU-410	-		0.4798	0.5010	0.0647	0.1525	5	NO	NO	IG1
b0793	ybhS	TU-410	-		0.5608	0.9260	0.0477	0.0599				
b0794	ybhF	TU-410	-		0.0050	0.8786	0.2244	0.2064	5	NO	NO	ORF
b0795	b0795	TU-410	-		0.8265	0.9576	-0.0150	-0.0075				
b0796	ybiH	TU-410	-		0.0301	0.0955	-0.2100	-0.4306				
b0797	rhlE	TU-411	+	S	0.0012	0.2995	0.3793	0.2689	4			
b0798	ybiA	TU-412	-		0.0153	0.5883	0.2064	0.1449				
b0799	dinG	TU-413	+	S	0.0005	0.3595	0.3254	0.4202	4			
b0800	ybiB	TU-413	+		0.0078	0.3674	-0.2373	-0.1191				
b0801	ybiC	TU-414	+		0.3366	0.7880	0.0431	0.0762	5	YES	YES	IG1
b0802	ybiJ	TU-415	-		0.3669	0.0608	-0.0886	0.2411	5	YES	YES	IG1
b0803	ybiI	TU-416	-		0.1418	0.7732	-0.2372	-0.1631				
b0804	ybiX	TU-417	-		0.3964	0.9869	-0.1607	-0.1568				
b0805	b0805	TU-417	-		0.8694	0.0923	0.0405	0.5371	5	NO	YES	IG1
b0806	ybiM	TU-418	-		0.6066	0.1411	0.0781	0.4624	5	NO	NO	IG1
b0807	ybiN	TU-419	+		0.0255	0.4627	0.2295	0.1482	5	NO	NO	IG1
b0808	ybiO	TU-420	-		0.3849	0.3629	0.1152	0.3011				
b0809	glnQ	TU-421	-		0.1792	0.4588	0.0935	-0.2048	5			
b0810	glnP	TU-421	-	S	0.0005	0.5133	-0.4447	-0.7302	1			
b0811	glnH	TU-421	-		0.0353	0.5913	-0.1559	-0.4111	5	YES	YES	IG1
b0812	dps	TU-422	-	S	0.0000	0.0238	-1.7171	-0.9381	4			
b0813	ybiF	TU-423	-		0.0755	0.1854	0.2558	0.4993				
b0814	ompX	TU-424	+		0.0047	0.8664	-0.5317	-0.5627				
b0815	ybiP	TU-425	-		0.6786	0.7719	0.0801	0.0115	5	NO	NO	ORF
b0816	b0816	TU-426	+		0.2247	0.6962	0.1826	0.2579				
b0817	b0817	TU-427	+		0.1361	0.2691	-0.2118	0.0011				
b0818	ybiR	TU-427	+		0.0617	0.0026	-0.2273	0.2429				
b0819	ybiS	TU-428	-		0.4074	0.0756	-0.0976	-0.3522				
b0820	ybiT	TU-429	+		0.5059	0.2557	-0.0498	0.0730				
b0821	ybiU	TU-430	-	S	0.0005	0.0005	-0.3593	0.2070	4			
b0822	b0822	TU-431	-	S	0.0000	0.0331	-0.6486	-0.3243	4			
b0823	ybiW	TU-432	-		0.9986	0.0675	-0.0004	0.4733				
b0824	ybiY	TU-432	-		0.1764	0.3943	0.1709	0.3057				
b0825	mipB	TU-433	+		0.0202	0.2229	0.3321	0.5515				
b0826	moeB	TU-434	-		0.0110	0.7290	0.2675	0.2267				
b0827	moeA	TU-434	-		0.0587	0.3205	0.2589	0.0934				
b0828	ybiK	TU-435	+		0.0230	0.1029	0.2250	0.0471				
b0829	b0829	TU-435	+		0.3942	0.1129	0.1048	-0.1850				
b0830	b0830	TU-435	+		0.4605	0.4600	-0.0774	-0.1784				
b0831	b0831	TU-435	+		0.6422	0.3598	0.0685	0.2418				

b0832	b0832	TU-435	+			0.2550	0.7826	-0.1710	-0.2215				
b0833	b0833	TU-436	+			0.1074	0.1351	0.4913	0.0289	5	NO	NO	ORF
b0834	b0834	TU-436	+			0.0179	0.0085	0.4205	-0.0973				
b0835	yliG	TU-437	-	S		0.0000	0.4509	0.7057	0.8139	1	YES	YES	IG1
b0836	b0836	TU-438	+	S		0.0000	0.7428	0.9286	1.0630	1	YES	YES	IG1
b0837	yliI	TU-439	+			0.1936	0.0144	0.1224	0.4257				
b0838	yliJ	TU-440	-			0.3858	0.7723	-0.1153	-0.0660				
b0839	dacC	TU-441	+			0.0088	0.8650	-0.4222	-0.4560				
b0840	deoR	TU-442	-			0.3146	0.6866	0.1014	0.0513				
b0841	ybjG	TU-442	-			0.0392	0.1240	-0.2700	-0.5680	5	YES	YES	IG1
b0842	cmr	TU-443	+			0.7081	0.6575	-0.0698	0.0393	5	YES	YES	IG1
b0843	ybjH	TU-444	-			0.1997	0.6785	-0.1239	-0.1763				
b0844	b0844	TU-444	-			0.0610	0.7857	-0.1906	-0.2285				
b0845	b0845	TU-444	-			0.0457	0.8703	0.1586	0.1759				
b0846	b0846	TU-445	+			0.6455	0.4133	0.0535	0.1768				
b0847	b0847	TU-446	-			0.0655	0.5846	-0.2195	-0.1173				
b0848	ybjM	TU-447	+			0.7647	0.5192	-0.0353	0.0762				
b0849	grxA	TU-448	-			0.6534	0.4704	0.0581	-0.1058	5	YES	YES	IG1
b0850	ybjC	TU-449	+			0.2233	0.8002	-0.1899	-0.1399	5	YES	YES	IG1
b0851	mdaA	TU-449	+			0.2086	0.0479	-0.0929	0.1080	5			
b0852	rimK	TU-449	+			0.6406	0.2450	0.0560	0.2301	5			
b0853	ybjN	TU-449	+			0.0273	0.6956	-0.2403	-0.3206	5			
b0854	potF	TU-450	+			0.0250	0.2159	-0.3391	-0.1190	5	YES	YES	IG1
b0855	potG	TU-450	+			0.4801	0.0324	-0.0891	0.3098	5			
b0856	potH	TU-450	+			0.1008	0.0500	-0.2372	0.1289	5	NO	NO	ORF
b0857	potI	TU-450	+			0.1939	0.7288	-0.1660	-0.1130	5	NO	NO	ORF
b0858	ybjO	TU-451	+			0.0052	0.0140	-0.2613	0.0627				
b0859	ybjF	TU-451	+			0.4231	0.2767	-0.2101	0.0979				
b0860	artJ	TU-452	-	S		0.0001	0.8553	0.4135	0.4390	4			
b0861	artM	TU-452	-			0.0430	0.1998	-0.1642	-0.0162	5	NO	NO	ORF
b0862	artQ	TU-452	-			0.2375	0.4208	-0.1370	-0.0038				
b0863	artI	TU-452	-			0.3810	0.0269	-0.0901	0.2877	5	NO	NO	ORF
b0864	artP	TU-452	-			0.0094	0.1463	0.2517	0.4347				
b0865	ybjP	TU-453	-	S		0.0003	0.6595	-0.6449	-0.5555	4			
b0866	b0866	TU-454	+			0.0512	0.5103	-0.1555	-0.0741				
b0867	b0867	TU-454	+			0.5228	0.4714	-0.0443	0.0278				
b0868	b0868	TU-455	-			0.7270	0.8677	0.0397	0.0175				
b0869	ybjT	TU-455	-			0.0295	0.0326	0.1176	-0.0647				
b0870	ybjU	TU-455	-			0.0376	0.4475	-0.1694	-0.2393				
b0871	poxB	TU-456	-	S		0.0000	0.0982	-1.2892	-0.7827	4			
b0872	b0872	TU-457	-			0.0117	0.9311	0.2278	0.2177				
b0873	ybjW	TU-457	-			0.2709	0.1672	0.0897	-0.0658				
b0874	ybjE	TU-458	-			0.7085	0.6689	-0.0551	-0.1402				
b0875	aqpZ	TU-459	-			0.1775	0.4538	0.1830	0.3062	5	YES	YES	IG1
b0876	ybjD	TU-460	+			0.7297	0.4303	-0.0433	-0.1605	5	YES	YES	IG1
b0877	ybjX	TU-461	-			0.0619	0.0950	-0.3922	-0.8291				
b0878	b0878	TU-462	+			0.5467	0.8987	-0.1053	-0.0795				
b0879	ybjZ	TU-462	+			0.1180	0.8562	-0.2441	-0.2810	5	NO	NO	ORF
b0880	cspD	TU-463	-			0.0207	0.5370	-0.3262	-0.1559	5	YES	YES	IG1
b0881	yljA	TU-464	+			0.0024	0.5151	-0.5443	-0.4191	5	YES	YES	IG1
b0882	clpA	TU-465	+			0.0193	0.1470	-0.5414	-0.1707				
b0883	serW	TU-466	-	S		0.0008	0.6977	0.3686	0.4406	1	YES	YES	IG1
b0884	infA	TU-467	-			0.0820	0.7442	-0.3000	-0.3910				
b0885	aat	TU-468	-			0.6142	0.5911	0.0379	0.1020				
b0886	cydC	TU-469	-			0.7262	0.8524	-0.0341	-0.0604				
b0887	cydD	TU-469	-			0.8466	0.9335	-0.0173	-0.0046				
b0888	trxB	TU-470	-			0.0530	0.0485	-0.2680	0.0558				
b0889	lrp	TU-471	+	S		0.0001	0.0921	-0.7859	-0.4550	4			
b0890	ftsK	TU-472	+			0.0081	0.8816	-0.4647	-0.4394	5	NO	NO	ORF
b0891	lolA	TU-472	+			0.0461	0.2671	-0.1805	-0.3172				
b0892	ycaJ	TU-472	+			0.2945	0.4931	0.0784	0.0134				
b0893	serS	TU-472	+			0.0078	0.8152	-0.5128	-0.5694				
b0894	dmsA	TU-473	+		S	0.0901	0.0001	0.1494	-0.4582	5	NO	NO	ORF

b0895	dmsB	TU-473	+		0.5040	0.0009	-0.0603	-0.5499				
b0896	dmsC	TU-473	+		0.3799	0.4923	-0.1342	-0.2525				
b0897	ycaC	TU-474	-	S	0.0000	0.0737	-1.1293	-0.4779	4			
b0898	ycaD	TU-475	+		0.0536	0.5588	0.1663	0.2571				
b0899	b0899	TU-475	+		0.0064	0.4519	0.5400	0.6991	5	NO	NO	ORF
b0900	ycaN	TU-476	-		0.1214	0.7257	0.1493	0.2080				
b0901	ycaK	TU-477	+	S	0.0001	0.0295	0.4602	0.0822	4			
b0902	pflA	TU-478	-		0.2758	0.0021	-0.1694	-0.7696				
b0903	pflB	TU-479	-		0.0278	0.3006	-0.1846	-0.3333	5			
b0904	focA	TU-479	-		0.7211	0.0424	0.0390	-0.3237	5	YES	YES	IG1
b0905	ycaO	TU-480	-		0.2014	0.4481	0.2193	0.0774	5	YES	YES	IG1
b0906	ycaP	TU-481	+		0.2303	0.7807	-0.1410	-0.0776	5	YES	YES	IG1
b0907	serC	TU-482	+		0.0989	0.0232	-0.1886	-0.5579				
b0908	aroA	TU-482	+		0.0697	0.1593	-0.2272	-0.4361				
b0909	ycaL	TU-483	+		0.0075	0.9515	0.1972	0.2031	5	NO	NO	IG1
b0910	cmk	TU-484	+		0.1182	0.2466	-0.2096	-0.0385				
b0911	rpsA	TU-484	+		0.5966	0.7110	-0.0502	-0.0095				
b0912	himD	TU-485	+	S	0.0001	0.7371	-0.5765	-0.5122	4			
b0913	ycaI	TU-486	+		0.0227	0.6200	0.3728	0.2766	5	YES	NO	IG1
b0914	msbA	TU-486	+		0.8377	0.7307	-0.0301	-0.0920	5	YES	YES	IG1
b0915	ycaH	TU-486	+		0.7069	0.9000	0.0600	0.0820	5			
b0916	ycaQ	TU-486	+		0.1393	0.9564	0.1751	0.1664	5	NO	NO	ORF
b0917	ycaR	TU-486	+		0.6512	0.7376	0.0433	0.0891				
b0918	kdsB	TU-486	+		0.0435	0.9364	-0.1974	-0.1864				
b0919	b0919	TU-487	+		0.1314	0.0524	0.2116	-0.1250				
b0920	ycbC	TU-488	-		0.0804	0.9459	0.2300	0.2186				
b0921	smtA	TU-489	+	S	0.0003	0.4871	-0.6525	-0.5493	4			
b0922	mukF	TU-489	+		0.0904	0.6940	-0.1843	-0.1311	5	NO	NO	ORF
b0923	mukE	TU-489	+		0.0239	0.1851	0.0965	0.2450	5	NO	NO	ORF
b0924	mukB	TU-489	+		0.2255	0.0545	-0.0926	0.1247	5	NO	NO	ORF
b0925	ycbB	TU-490	+		0.0235	0.3352	-0.4287	-0.2007				
b0926	ycbK	TU-491	+	S	0.0009	0.7950	-0.7237	-0.7793	4			
b0927	ycbL	TU-491	+	S	0.0012	0.4734	-0.3483	-0.2531	4			
b0928	aspC	TU-492	-		0.0549	0.9903	-0.2365	-0.2384				
b0929	ompF	TU-493	-	S	0.0010	0.0087	-0.2911	0.0384	1	YES	YES	IG1
b0930	asnS	TU-494	-		0.5241	0.5328	-0.0567	-0.1372				
b0931	pncB	TU-495	-		0.0161	0.8709	-0.2929	-0.2675				
b0932	pepN	TU-496	+		0.0026	0.0444	-0.4101	-0.1006				
b0933	ycbE	TU-497	-		0.1175	0.6391	0.2410	0.3412				
b0934	ycbM	TU-497	-		0.3483	0.1950	0.1130	0.3104				
b0935	ycbN	TU-497	-		0.0091	0.1268	0.2859	0.4877				
b0936	ycbO	TU-497	-	S	0.0011	0.8442	0.3879	0.3577	4			
b0937	ycbP	TU-497	-	S	0.0004	0.4380	0.3858	0.2913	4			
b0938	ycbQ	TU-498	+	S	0.0000	0.3223	0.4907	0.3804	4			
b0939	ycbR	TU-499	+	S	0.0002	0.7577	0.6237	0.5772	4			
b0940	ycbS	TU-499	+	S	0.0009	0.9274	0.4125	0.4001	4			
b0941	b0941	TU-499	+		0.0026	0.5324	0.3342	0.4043				
b0942	b0942	TU-499	+	S	0.0018	0.9575	0.3121	0.3057	4			
b0943	b0943	TU-499	+		0.0476	0.8751	0.2650	0.2394				
b0944	ycbF	TU-499	+		0.0057	0.8751	0.2914	0.2703				
b0945	pyrD	TU-500	+		0.8619	0.3215	0.0376	-0.2184				
b0946	ycbW	TU-501	+		0.2764	0.9285	-0.0785	-0.0691	3	NO	NO	IG2
b0947	b0947	TU-502	-		0.2896	0.5163	0.1036	0.0207	3	NO	NO	IG2
b0948	ycbY	TU-503	+	S	0.0001	0.8965	0.3856	0.3726	4			
b0949	uup	TU-503	+		0.0157	0.8013	0.3247	0.3604				
b0950	pqiA	TU-504	+		0.0353	0.9539	0.3266	0.3151	5	YES	NO	IG1
b0951	pqiB	TU-504	+		0.0531	0.0143	0.2110	-0.2656	5	NO	NO	IG1
b0952	ymbA	TU-505	+		0.1555	0.9764	0.1602	0.1542				
b0953	rmf	TU-506	+		0.6762	0.8411	-0.0810	0.0177	5	YES	YES	IG1
b0954	fabA	TU-507	-		0.0177	0.1038	-0.4008	-0.0977				
b0955	b0955	TU-508	-		0.2844	0.9263	-0.1628	-0.1792				
b0956	ycbG	TU-509	+		0.4166	0.7426	-0.1092	-0.0334				
b0957	ompA	TU-510	-	S	0.0018	0.2504	-0.4324	-0.2937	4			

b#	gene	TU	strand	S	S								
b0958	sulA	TU-511	-			0.0077	0.3648	-0.3204	-0.5107				
b0959	b0959	TU-512	+			0.5636	0.2910	0.0654	0.2483				
b0960	b0960	TU-513	-			0.2306	0.2177	-0.1136	0.0503				
b0961	yccF	TU-513	-			0.5344	0.8157	0.0626	0.0953				
b0962	helD	TU-514	+	S		0.0010	0.8632	-0.3524	-0.3718	4			
b0963	mgsA	TU-515	-			0.0225	0.3455	-0.2469	-0.1269				
b0964	b0964	TU-516	-			0.0529	0.6036	-0.2349	-0.1286	5	NO	NO	ORF
b0965	b0965	TU-517	+			0.0115	0.5789	-0.4506	-0.3294				
b0966	yccV	TU-518	-	S		0.0000	0.6558	-0.4322	-0.4786	4			
b0967	b0967	TU-518	-			0.9457	0.8384	0.0063	0.0296	5	NO	YES	ORF
b0968	b0968	TU-519	+			0.5550	0.0406	0.0819	0.4851				
b0969	yccK	TU-520	-			0.5709	0.7915	-0.0478	-0.0133				
b0970	yccA	TU-520	-			0.0077	0.2656	-0.2402	-0.4749				
b0971	serT	TU-521	-			0.0247	0.6793	-0.7317	-0.5306	5	YES	YES	IG1
b0972	hyaA	TU-522	+			0.2510	0.0003	0.1302	-1.2504	5	NO	NO	IG1
b0973	hyaB	TU-522	+	S	S	0.0014	0.0001	0.3152	-1.2985	1			
b0974	hyaC	TU-522	+		S	0.0088	0.0000	0.4343	-1.7493	5			
b0975	hyaD	TU-522	+			0.0083	0.0003	0.2209	-1.1511	5			
b0976	hyaE	TU-522	+		S	0.0041	0.0001	0.3590	-0.9705	5			
b0977	hyaF	TU-522	+		S	0.0030	0.0000	0.5534	-1.4523	5			
b0978	appC	TU-523	+		S	0.8201	0.0000	-0.0152	-1.5797				
b0979	appB	TU-523	+			0.0210	0.0003	0.2727	-1.1918				
b0980	appA	TU-523	+			0.5347	0.0109	0.0609	-0.9162				
b0981	yccC	TU-524	-			0.0223	0.4958	0.1643	0.2407				
b0982	yccY	TU-524	-			0.0995	0.7569	0.1788	0.2228				
b0983	yccZ	TU-524	-	S		0.0001	0.3140	0.5183	0.6308	1	NO	NO	IG1
b0984	ymcA	TU-524	-			0.0025	0.8545	0.3843	0.3599	5	NO	NO	IG1
b0985	ymcB	TU-524	-	S		0.0016	0.7120	0.3963	0.3506	4			
b0986	ymcC	TU-524	-			0.0106	0.9386	0.4086	0.3953				
b0987	ymcD	TU-525	-			0.0052	0.4718	0.3815	0.2887				
b0989	cspH	TU-526	-			0.1048	0.5066	0.3426	0.5050				
b0990	cspG	TU-527	+			0.6396	0.5493	-0.0911	0.0480				
b0991	sfa	TU-527	+			0.0909	0.2263	0.2429	0.4950	3	NO	NO	IG2
b0992	yccM	TU-528	-			0.0271	0.4539	0.3624	0.2082	3	NO	NO	IG2
b0993	torS	TU-529	-			0.1667	0.0526	0.1610	-0.1296				
b0994	torT	TU-530	+			0.2122	0.5609	0.1668	0.0677	3	NO	NO	IG2
b0995	torR	TU-531	-			0.0061	0.1546	0.1703	0.3006	3	NO	NO	IG2
b0996	torC	TU-532	+			0.0341	0.6647	0.3760	0.4658				
b0997	torA	TU-532	+			0.5600	0.5785	0.0835	0.2032	5	NO	NO	ORF
b0998	torD	TU-532	+			0.0397	0.9276	0.2519	0.2660				
b0999	yccD	TU-533	-	S		0.0012	0.7490	-0.4360	-0.5225	4			
b1000	cbpA	TU-533	-	S		0.0000	0.7811	-0.9488	-0.8492	4			
b1001	yccE	TU-534	+			0.2189	0.3425	0.2073	0.4544	5	NO	NO	ORF
b1002	agp	TU-535	+			0.0113	0.0309	-0.5456	-0.0249	5	NO	NO	
b1003	yccJ	TU-536	-	S		0.0000	0.1442	-1.2190	-0.8394	4			
b1004	wrbA	TU-536	-	S		0.0000	0.0479	-1.4472	-0.8666	4			
b1005	ycdF	TU-537	+	S		0.0014	0.0326	-0.3959	0.1045	4			
b1006	ycdG	TU-538	-			0.7546	0.5987	0.0403	0.1375				
b1007	b1007	TU-538	-			0.5435	0.0485	0.0568	0.3339	5			
b1008	b1008	TU-538	-			0.0162	0.2174	0.3684	0.5916	5			
b1009	b1009	TU-538	-			0.0113	0.1073	0.3847	0.6462	5			
b1010	b1010	TU-538	-	S		0.0008	0.2691	0.3678	0.5306	1			
b1011	b1011	TU-538	-	S		0.0006	0.5059	0.4561	0.5513	1			
b1012	b1012	TU-538	-			0.0058	0.4082	0.4269	0.5596	5	YES	NO	IG1
b1013	ycdC	TU-539	+			0.1991	0.1651	0.0825	0.2124	5	YES	NO	IG1
b1014	putA	TU-540	-			0.0713	0.1058	0.1388	0.3353	3	NO	NO	IG2
b1015	putP	TU-541	+			0.1922	0.3975	0.0580	0.1403	5	YES	YES	IG1
b1016	b1016	TU-542	+			0.6292	0.6560	0.1910	0.3957				
b1017	b1017	TU-542	+			0.2183	0.4606	0.2391	0.3957				
b1018	ycdO	TU-542	+			0.3418	0.9538	0.3298	0.3515	5	NO	NO	ORF
b1019	ycdB	TU-542	+			0.0608	0.5949	0.3730	0.4861				
b1020	phoH	TU-543	+	S	S	0.0000	0.0000	-0.8848	0.2175	4			
b1021	ycdP	TU-544	-			0.0330	0.4856	0.1794	0.2491				

b1022	ycdQ	TU-544	-			0.2466	0.3643	0.1308	0.2608	5	NO	NO	IG1
b1023	ycdR	TU-544	-			0.0831	0.7038	0.3269	0.2465	5	NO	NO	ORF
b1024	ycdS	TU-544	-			0.1224	0.5707	0.2232	0.3229	5	NO	NO	ORF
b1025	ycdT	TU-545	+			0.2272	0.5587	0.1946	0.0679				
b1026	tra5	TU-546	-			0.0348	0.3647	0.3122	0.4518				
b1028	b1028	TU-547	+			0.0072	0.4221	0.3807	0.5181				
b1029	ycdU	TU-548	+			0.0316	0.6651	0.2988	0.3883	3	NO	NO	IG2
b1031	ycdV	TU-549	-			0.0147	0.6077	0.5099	0.6144				
b1033	ycdW	TU-550	+	S		0.0008	0.6041	-0.2892	-0.2266	4			
b1034	ycdX	TU-550	+			0.1848	0.7684	-0.1670	-0.2134				
b1035	ycdY	TU-550	+			0.0246	0.4129	0.2496	0.1331				
b1036	ycdZ	TU-550	+			0.2096	0.5363	0.1430	0.2302				
b1037	csgG	TU-551	-			0.1744	0.9709	-0.2682	-0.2763				
b1038	csgF	TU-551	-	S		0.0005	0.8239	-1.1906	-1.1213	4			
b1039	csgE	TU-551	-			0.0115	0.8911	-0.8875	-0.8385				
b1040	csgD	TU-551	-	S		0.0013	0.7521	-1.1921	-1.0844	4			
b1041	csgB	TU-552	+			0.2916	0.7800	0.1742	0.2375				
b1042	csgA	TU-552	+			0.0106	0.7822	-0.3689	-0.4187	5	NO	NO	ORF
b1043	csgC	TU-553	+			0.2627	0.0638	-0.1287	0.2337				
b1044	b1044	TU-553	+	S		0.0001	0.7242	-0.6819	-0.5853	1	YES	NO	ORF
b1045	b1045	TU-553	+			0.0023	0.8004	-0.3932	-0.3486				
b1046	ymdC	TU-553	+			0.0107	0.2013	-0.3252	-0.1015				
b1047	ymdD	TU-554	-			0.0419	0.1626	-0.2383	-0.0414	5	NO	NO	ORF
b1048	mdoG	TU-555	+			0.4728	0.3537	0.0506	0.1353	5	NO	NO	ORF
b1049	mdoH	TU-555	+			0.1659	0.4568	-0.1282	-0.2232				
b1050	yceK	TU-556	+	S		0.0002	0.0053	-0.6259	-0.0689	4			
b1051	msyB	TU-557	-			0.0231	0.2959	-0.3865	-0.0247				
b1052	b1052	TU-557	-			0.0154	0.7908	-0.4165	-0.4776				
b1053	yceE	TU-557	-			0.7672	0.1595	0.0217	-0.1504				
b1054	htrB	TU-558	-			0.1001	0.0084	0.1480	-0.2037	5	NO	NO	ORF
b1055	yceA	TU-559	+			0.5270	0.7364	0.1091	0.1777				
b1056	yceI	TU-560	-	S	S	0.0000	0.0001	-0.5352	0.1264	4			
b1057	b1057	TU-560	-			0.0185	0.4173	0.2132	0.3255				
b1058	yceO	TU-561	-	S		0.0007	0.3988	0.5804	0.7147	4			
b1059	solA	TU-561	-			0.1789	0.5713	-0.0908	0.0004				
b1060	yceP	TU-562	-			0.0633	0.0756	-0.2430	0.1301	5	YES	YES	IG1
b1061	dinI	TU-563	-			0.1069	0.8826	0.1655	0.1458				
b1062	pyrC	TU-564	-			0.0038	0.8410	-0.4688	-0.4378				
b1063	yceB	TU-565	-			0.0991	0.7018	0.1902	0.2515				
b1064	grxB	TU-566	-	S		0.0004	0.1230	-0.3616	-0.1375	4			
b1065	yceL	TU-566	-			0.0205	0.9079	0.4075	0.3844				
b1066	rimJ	TU-567	+			0.1770	0.8060	-0.1864	-0.2329				
b1067	yceH	TU-567	+			0.0275	0.4102	-0.3005	-0.1620				
b1068	mviM	TU-567	+	S		0.0017	0.1361	-0.2965	-0.4684	4			
b1069	mviN	TU-567	+			0.3541	0.9905	0.1044	0.1028				
b1070	flgN	TU-568	-			0.0106	0.5951	-0.6770	-0.9690				
b1071	flgM	TU-568	-			0.0264	0.6412	-0.5335	-0.7800				
b1072	flgA	TU-568	-			0.0955	0.5943	-0.2140	-0.0680				
b1073	flgB	TU-569	+			0.0063	0.9379	-1.0716	-1.0109				
b1074	flgC	TU-569	+			0.0204	0.8323	-1.0487	-0.8624				
b1075	flgD	TU-569	+			0.0089	0.7429	-0.9651	-0.7389				
b1076	flgE	TU-569	+			0.0114	0.9910	-1.3906	-1.3798				
b1077	flgF	TU-569	+			0.0620	0.8011	-0.3927	-0.2829				
b1078	flgG	TU-569	+			0.0088	0.7826	-0.6611	-0.5326	5	NO	NO	IG1
b1079	flgH	TU-569	+			0.0078	0.6709	-0.3758	-0.2109	5	NO	NO	ORF
b1080	flgI	TU-569	+			0.1745	0.4358	-0.1587	0.0606				
b1081	flgJ	TU-569	+			0.1599	0.3440	-0.0829	0.0764				
b1082	flgK	TU-569	+			0.0097	0.6937	-0.6954	-0.9445				
b1083	flgL	TU-570	+	S		0.0008	0.6998	-0.4433	-0.5869	4			
b1084	rne	TU-571	-			0.7112	0.0566	0.0312	-0.2826				
b1085	b1085	TU-572	+			0.0440	0.0088	-0.2617	0.2400				
b1086	yceC	TU-573	+			0.1519	0.6578	0.1188	0.1699	5	YES	YES	IG1
b1087	yceF	TU-574	-	S		0.0003	0.8972	-0.5419	-0.5728	4			

b1088	yceD	TU-575	+			0.0832	0.1414	-0.1101	-0.2671				
b1089	rpmF	TU-575	+	S		0.0002	0.7313	-0.5063	-0.4494	4			
b1090	plsX	TU-576	+			0.0296	0.9446	0.1611	0.1552				
b1091	fabH	TU-577	+			0.0057	0.7998	0.3252	0.3594				
b1092	fabD	TU-577	+			0.8142	0.4096	-0.0178	-0.1068				
b1093	fabG	TU-577	+			0.1759	0.7826	-0.1711	-0.1317				
b1094	acpP	TU-578	+			0.7020	0.7872	0.0278	0.0544				
b1095	fabF	TU-578	+			0.1667	0.9778	0.1529	0.1482				
b1096	pabC	TU-579	+			0.5770	0.7340	0.0713	0.1258				
b1097	yceG	TU-579	+			0.0602	0.9877	0.2247	0.2226	5	NO	YES	ORF
b1098	tmk	TU-579	+			0.0729	0.3153	0.1559	0.0379	5	NO	NO	ORF
b1099	holB	TU-579	+			0.9012	0.0902	0.0106	-0.1906	5	NO	NO	ORF
b1100	ycfH	TU-579	+	S		0.0020	0.8610	-0.5085	-0.4752	4			
b1101	ptsG	TU-580	+	S		0.0018	0.6402	-0.5149	-0.4116	1	YES	YES	IG1
b1102	fhuE	TU-581	-			0.0705	0.8124	0.2922	0.2494	5	NO	NO	ORF
b1103	ycfF	TU-582	+	S		0.0010	0.8533	-0.5691	-0.5364	4			
b1104	ycfL	TU-582	+			0.0033	0.7118	-0.3719	-0.3049				
b1105	ycfM	TU-582	+	S		0.0007	0.4035	-0.4806	-0.6117	4			
b1106	ycfN	TU-582	+			0.5476	0.9025	0.0628	0.0406				
b1107	ycfO	TU-582	+			0.7746	0.6667	-0.0270	-0.0960				
b1108	ycfP	TU-582	+			0.9513	0.0992	-0.0086	0.3286	5	NO	YES	IG1
b1109	ndh	TU-583	+	S	S	0.0000	0.0001	-0.6722	0.0039	1	YES	YES	IG1
b1110	ycfJ	TU-584	+			0.0210	0.8520	0.3021	0.2612				
b1111	ycfQ	TU-585	-			0.0056	0.6888	-0.2334	-0.2806				
b1112	ycfR	TU-586	+			0.7587	0.0718	0.0345	0.3754				
b1113	ycfS	TU-587	-			0.7166	0.0459	-0.0423	0.2952				
b1114	mfd	TU-588	-			0.0093	0.1591	-0.3042	-0.0755				
b1115	ycfT	TU-589	-			0.1702	0.0458	0.1347	0.4755				
b1116	ycfU	TU-590	+			0.1421	0.1176	-0.1606	0.0359				
b1117	ycfV	TU-590	+			0.2831	0.7984	-0.0993	-0.1285				
b1118	ycfW	TU-590	+			0.0069	0.2947	-0.4401	-0.2773				
b1119	ycfX	TU-590	+	S		0.0008	0.7594	-0.4402	-0.3984	4			
b1120	cobB	TU-590	+			0.0295	0.5242	-0.2446	-0.1631	5	NO	NO	ORF
b1121	b1121	TU-591	-			0.7151	0.3516	-0.0315	0.1265				
b1122	ymfA	TU-591	-			0.4981	0.5189	0.0705	0.1596				
b1123	potD	TU-592	-	S		0.0003	0.2258	0.2815	0.0789	1			
b1124	potC	TU-592	-			0.0023	0.0428	0.3596	0.0562	5			
b1125	potB	TU-592	-			0.1477	0.9466	0.1678	0.1545	5	NO	NO	IG1
b1126	potA	TU-592	-	S		0.0021	0.2292	0.3651	0.1213	1	YES	YES	IG1
b1127	pepT	TU-593	+			0.3093	0.0783	-0.1391	0.1552	5	YES	YES	IG1
b1128	ycfD	TU-594	-			0.4852	0.3968	-0.0564	0.0695				
b1129	phoQ	TU-595	-			0.1774	0.5047	0.1077	0.0279				
b1130	phoP	TU-595	-	S		0.0012	0.9961	-0.4163	-0.4169	4			
b1131	purB	TU-596	-	S		0.0003	0.7078	0.4569	0.5120	4			
b1132	ycfC	TU-596	-			0.8306	0.6664	0.0382	-0.0628				
b1133	ycfB	TU-597	-			0.2533	0.0515	0.1392	-0.1663				
b1134	b1134	TU-597	-			0.2881	0.8560	0.1012	0.1233				
b1135	ymfC	TU-597	-			0.6679	0.9028	0.0486	0.0326				
b1136	icdA	TU-598	+	S		0.0020	0.0422	-0.3940	-0.0423	4			
b1137	ymfD	TU-599	-			0.3133	0.7965	0.1677	0.2290				
b1138	ymfE	TU-599	-			0.5057	0.6390	0.1275	0.2393				
b1139	lit	TU-600	+			0.4073	0.9753	-0.1408	-0.1476				
b1140	intE	TU-601	-			0.4886	0.3750	0.1072	-0.0878	5	NO	NO	ORF
b1141	b1141	TU-601	-			0.5444	0.8583	-0.0800	-0.1183				
b1142	ymfH	TU-601	-	S		0.0020	0.3583	0.5419	0.7000	4			
b1143	ymfI	TU-602	+			0.0659	0.3279	-0.3428	-0.6713				
b1144	ymfJ	TU-603	-			0.0658	0.9237	0.3055	0.2854				
b1145	b1145	TU-604	-			0.1646	0.2123	-0.1613	0.0784				
b1146	b1146	TU-605	+			0.0941	0.5870	0.2982	0.4122				
b1147	ymfL	TU-605	+			0.0241	0.4034	0.3452	0.4916				
b1148	ymfM	TU-605	+			0.0146	0.5107	0.3906	0.5012				
b1149	ymfN	TU-605	+			0.3733	0.7112	0.1108	0.1686				
b1150	ymfR	TU-605	+			0.2771	0.0503	-0.1508	0.2090				

b1151	ymfO	TU-605	+			0.0989	0.1336	0.2338	0.5005				
b1152	b1152	TU-605	+			0.1460	0.0293	0.2132	0.6194				
b1153	b1153	TU-605	+			0.1472	0.4457	0.1622	0.2785				
b1154	ycfK	TU-605	+			0.0327	0.1383	0.2566	0.5216	5	NO	NO	ORF
b1155	b1155	TU-605	+			0.0242	0.2648	0.3375	0.5704				
b1156	ycfA	TU-606	-			0.4323	0.4191	0.1197	0.2934	5			
b1157	b1157	TU-606	-			0.0507	0.6622	0.3018	0.3876	5	NO	NO	IG1
b1158	pin	TU-607	+	S		0.0003	0.4379	0.6410	0.7736	1	NO	NO	IG1
b1159	mcrA	TU-608	+	S		0.0019	0.2427	0.4133	0.2372	4			
b1160	ycgW	TU-609	-	S		0.0001	0.1925	0.8087	0.5259	4			
b1161	ycgX	TU-610	-			0.3555	0.3186	-0.0877	-0.2309				
b1162	ycgE	TU-610	-	S		0.0006	0.5705	-0.5702	-0.6653	4			
b1163	b1163	TU-610	-			0.4908	0.3108	0.1517	0.4043				
b1164	ycgZ	TU-611	+			0.1307	0.7107	0.3933	0.4930				
b1165	ymgA	TU-611	+			0.1162	0.9925	0.3077	0.3055				
b1166	ymgB	TU-611	+			0.1343	0.0050	-0.4148	0.4505				
b1167	ymgC	TU-611	+			0.8699	0.3178	0.0309	0.2619				
b1168	b1168	TU-612	+			0.0023	0.5813	0.4577	0.5512	5	YES	YES	ORF
b1169	b1169	TU-613	+			0.7133	0.3465	0.0583	0.2445				
b1170	b1170	TU-613	-			0.7555	0.6357	-0.0210	-0.0818				
b1171	b1171	TU-614	-			0.3142	0.0209	0.1105	-0.3699				
b1172	b1172	TU-614	+			0.2222	0.2710	0.1061	-0.1187	5	NO	NO	ORF
b1174	minE	TU-615	-			0.0221	0.9495	-0.3228	-0.3107	5			
b1175	minD	TU-615	-	S		0.0003	0.3956	-0.4175	-0.5177	1			
b1176	minC	TU-615	-			0.0046	0.9359	-0.4818	-0.4972	5	YES	YES	IG1
b1177	ycgJ	TU-616	+	S		0.0001	0.3839	-0.8983	-0.7162	1	YES	YES	IG1
b1178	ycgK	TU-617	-	S	S	0.0000	0.0000	1.2047	-0.5227	1	YES	YES	IG1
b1179	ycgL	TU-618	+			0.4327	0.1281	-0.1202	-0.4699	5	YES	YES	IG1
b1180	b1180	TU-618	+			0.6799	0.7144	-0.0501	-0.1065				
b1181	ycgN	TU-618	+			0.0438	0.2605	-0.1852	-0.3768				
b1182	hlyE	TU-619	-			0.8856	0.1220	0.0200	-0.6688				
b1183	umuD	TU-620	+			0.5550	0.9600	0.0414	0.0356	5	YES	NO	IG1
b1184	umuC	TU-620	+			0.0792	0.3496	0.2337	0.3972	5			
b1185	dsbB	TU-621	-			0.0034	0.4922	-0.2655	-0.1639	5	YES	YES	IG1
b1186	nhaB	TU-622	-	S		0.0005	0.7767	-0.4097	-0.3615	4			
b1187	fadR	TU-623	+			0.6268	0.1404	0.0456	0.2293				
b1188	ycgB	TU-624	-	S		0.0003	0.0068	-1.2222	-0.1355	4			
b1189	dadA	TU-625	+			0.0037	0.0586	-0.3484	-0.0145				
b1190	dadX	TU-625	+			0.4916	0.0339	-0.0645	0.2661	5	NO	NO	IG1
b1191	b1191	TU-626	-			0.1143	0.1086	-0.1285	0.0751	3	NO	YES	IG2
b1192	b1192	TU-627	-			0.1259	0.3517	0.1144	-0.0013				
b1193	mltE	TU-628	+			0.0306	0.7046	-0.2501	-0.3050				
b1194	ycgR	TU-629	-			0.0797	0.4568	-0.6904	-0.2208				
b1195	ymgE	TU-630	+	S		0.0007	0.0164	-0.5740	0.0411	1	NO	NO	ORF
b1196	ycgY	TU-630	+			0.0335	0.6264	0.2109	0.1333				
b1197	treA	TU-631	-			0.7699	0.2571	-0.0248	0.1961	5	NO	NO	IG1
b1198	ycgC	TU-632	-			0.9531	0.1644	-0.0058	-0.2244				
b1199	b1199	TU-632	-			0.8452	0.2168	-0.0161	-0.1834	5	NO	NO	IG1
b1200	b1200	TU-632	-			0.6335	0.7878	0.0428	0.0808				
b1201	b1201	TU-633	+			0.6552	0.7575	0.0375	0.0744				
b1202	b1202	TU-634	-	S		0.0001	0.8620	0.4828	0.5039	1	NO	NO	ORF
b1203	ychF	TU-635	-			0.0159	0.1677	0.2947	0.1005				
b1204	pth	TU-635	-			0.4301	0.5064	0.0990	0.0062				
b1205	ychH	TU-636	+		S	0.0238	0.0000	-0.1642	0.4821				
b1206	ychM	TU-637	-	S		0.0000	0.0789	0.5165	0.3134	4			
b1207	prsA	TU-638	-			0.0657	0.2455	-0.2024	-0.3691	5	YES	YES	IG1
b1208	ychB	TU-639	-			0.5219	0.5471	-0.0509	0.0138	5	NO	NO	ORF
b1209	hemM	TU-639	-			0.1518	0.5103	-0.2189	-0.3371				
b1210	hemA	TU-640	+			0.6937	0.5772	0.0354	0.0953				
b1211	prfA	TU-640	+			0.0307	0.4204	-0.3897	-0.2302	5	NO	NO	IG1
b1212	hemK	TU-640	+			0.3784	0.3667	0.0871	-0.0402				
b1213	b1213	TU-640	+			0.3284	0.8747	-0.1140	-0.1440				
b1214	ychA	TU-640	+			0.7637	0.6735	0.0401	0.1109	5	NO	NO	ORF

b1215	kdsA	TU-640	+			0.3747	0.1415	0.0769	-0.1057	5	NO	NO	IG1
b1216	chaA	TU-641	-			0.0030	0.2010	-0.6182	-0.2868				
b1217	chaB	TU-642	+			0.4512	0.3438	-0.1782	0.1422				
b1218	chaC	TU-642	+			0.0364	0.6116	-0.2038	-0.1084	5	YES	NO	IG1
b1219	ychN	TU-643	-			0.3003	0.0873	0.1253	0.4945				
b1220	ychP	TU-644	+			0.7579	0.5786	0.0376	0.1403				
b1221	narL	TU-645	-	S		0.0000	0.1866	-0.4719	-0.3123	4			
b1222	narX	TU-645	-			0.5681	0.0941	-0.0507	0.1657				
b1223	narK	TU-646	+			0.0124	0.1682	0.3665	0.0515				
b1224	narG	TU-647	+			0.5233	0.0230	0.0898	-0.8897				
b1225	narH	TU-647	+			0.2521	0.0397	-0.1307	-0.9185				
b1226	narJ	TU-647	+			0.1740	0.3148	-0.1762	-0.4960				
b1227	narI	TU-647	+			0.4505	0.1422	0.0836	-0.2672				
b1228	b1228	TU-648	+	S		0.0002	0.0344	0.6533	0.9965	4			
b1229	tpr	TU-649	-	S		0.0001	0.1243	0.5270	0.3116	1			
b1230	tyrV	TU-649	-			0.9799	0.7100	0.0044	-0.0970	5			
b1231	tyrT	TU-649	-			0.8011	0.4411	-0.0664	-0.3601	5	YES	YES	IG1
b1232	purU	TU-650	-			0.0069	0.1995	-0.4507	-0.6730	5	NO	NO	ORF
b1233	ychJ	TU-650	-			0.1032	0.1340	-0.1872	0.0513				
b1234	ychK	TU-651	+			0.0049	0.9979	-0.3577	-0.3574				
b1235	hnr	TU-651	+	S		0.0004	0.3628	-0.4161	-0.2889	4			
b1236	galU	TU-652	+			0.0118	0.1743	-0.2059	-0.0486	5	YES	NO	IG1
b1237	hns	TU-653	-			0.0150	0.5933	-0.2635	-0.1820	5	YES	YES	IG1
b1238	tdk	TU-654	+			0.1248	0.6129	-0.1151	-0.1710				
b1239	ychG	TU-655	-	S		0.0001	0.6185	0.5471	0.6069	4			
b1240	b1240	TU-655	-			0.0146	0.0988	0.1683	0.0068				
b1241	adhE	TU-656	-			0.2425	0.4322	-0.2154	-0.3716				
b1242	ychE	TU-657	+	S		0.0000	0.5590	0.6408	0.7354	4			
b1243	oppA	TU-658	+			0.6016	0.5735	-0.0770	-0.1826				
b1244	oppB	TU-658	+			0.6583	0.0219	-0.0925	-0.7263				
b1245	oppC	TU-658	+			0.3033	0.0187	0.1795	-0.3942				
b1246	oppD	TU-658	+			0.8973	0.0330	0.0153	-0.4404				
b1247	oppF	TU-658	+			0.0533	0.0016	-0.3504	-1.2293				
b1248	b1248	TU-659	-			0.0812	0.1831	-0.2096	-0.0113				
b1249	cls	TU-659	-	S		0.0001	0.3300	-0.5473	-0.4365	4			
b1250	kch	TU-660	-	S		0.0000	0.3993	-1.0102	-1.3076	1	NO	NO	IG1
b1251	yciI	TU-661	-			0.5295	0.3775	-0.1094	-0.3439				
b1252	tonB	TU-662	+			0.3683	0.6196	0.1559	0.0018				
b1253	yciA	TU-663	-			0.0043	0.1510	0.4352	0.1795				
b1254	yciB	TU-664	-			0.0141	0.0348	0.2042	-0.1794				
b1255	yciC	TU-664	-			0.4689	0.0571	0.0724	-0.1848				
b1256	yciD	TU-665	+			0.0774	0.4162	-0.2471	-0.5106				
b1257	yciE	TU-666	-	S		0.0001	0.0741	-0.9661	-0.4327	4			
b1258	yciF	TU-666	-	S		0.0012	0.0559	-0.6150	-0.0998	4			
b1259	yciG	TU-667	-			0.0133	0.0634	-0.5105	0.0756				
b1260	trpA	TU-668	-			0.0141	0.0020	-0.2457	0.2935				
b1261	trpB	TU-668	-			0.0113	0.0049	-0.3745	0.0927				
b1262	trpC	TU-668	-			0.1002	0.1943	-0.1526	0.1015				
b1263	trpD	TU-668	-	S		0.0011	0.0014	-0.2371	0.1991	4			
b1264	trpE	TU-668	-		S	0.0039	0.0000	-0.2205	0.3059				
b1265	trpL	TU-668	-			0.0336	0.0146	0.1390	0.7163				
b1266	yciV	TU-669	+			0.0736	0.0375	-0.0822	0.1143				
b1267	yciO	TU-669	+			0.0248	0.2020	-0.3145	-0.1114				
b1268	yciQ	TU-669	+			0.4886	0.0748	0.0701	0.3248				
b1269	yciL	TU-670	+			0.3812	0.0237	-0.0716	0.2550				
b1270	btuR	TU-671	-			0.0632	0.0946	-0.1586	0.0377				
b1271	yciK	TU-671	-			0.1547	0.1776	-0.1344	-0.2810				
b1272	sohB	TU-672	+	S		0.0008	0.0894	0.2546	0.0836	4			
b1273	yciN	TU-673	-	S		0.0017	0.0464	-0.2945	-0.5983	1	YES	YES	IG1
b1274	topA	TU-674	+			0.0631	0.9992	0.1385	0.1387	5	YES	YES	IG1
b1275	cysB	TU-675	+			0.4369	0.1392	-0.1196	-0.4536				
b1276	acnA	TU-676	+	S	S	0.0000	0.0000	-0.3933	0.1792	4	NO	NO	IG2
b1277	ribA	TU-677	-			0.3812	0.4653	-0.1606	-0.3086	3	NO	NO	IG2

b1278	pgpB	TU-678	+			0.0460	0.7007	0.1881	0.1477				
b1279	yciS	TU-678	+			0.4373	0.3148	-0.0454	-0.1412	5	NO	NO	ORF
b1280	yciM	TU-678	+			0.2824	0.3266	-0.0986	0.0393				
b1281	pyrF	TU-679	+			0.5136	0.5928	0.1044	0.0049				
b1282	yciH	TU-679	+	S		0.0003	0.2254	0.5836	0.4011	4			
b1283	osmB	TU-680	-			0.1478	0.6272	-0.1563	-0.0274				
b1284	b1284	TU-681	-			0.0775	0.5458	-0.0657	-0.1225	5	YES	YES	IG1
b1285	yciR	TU-682	-	S		0.0016	0.4242	-0.6044	-0.4131	4			
b1286	rnb	TU-683	-			0.1193	0.1364	0.2359	-0.0030				
b1287	yciW	TU-684	-			0.8740	0.3710	0.0452	-0.2375	5	NO	YES	ORF
b1288	fabI	TU-684	-			0.0230	0.5682	-0.2241	-0.3036	5	NO	NO	ORF
b1289	ycjD	TU-685	-			0.0456	0.8615	0.2954	0.2619	5	NO	NO	IG1
b1290	sapF	TU-686	-			0.7449	0.5304	-0.0329	-0.1250	5			
b1291	sapD	TU-686	-			0.1352	0.4494	0.1078	0.0226	5			
b1292	sapC	TU-686	-			0.5292	0.3537	0.0466	-0.0569	5			
b1293	sapB	TU-686	-			0.2206	0.7740	0.1238	0.0823	5			
b1294	sapA	TU-686	-			0.6162	0.6867	0.0397	0.0928	5			
b1295	ymjA	TU-686	-	S		0.0006	0.8159	0.5744	0.6118	1			
b1296	ycjJ	TU-686	-			0.8825	0.0183	-0.0287	0.5528	5	NO	NO	IG1
b1297	b1297	TU-686	-		S	0.0025	0.0001	-0.9307	0.3263	5	YES	YES	IG1
b1298	ycjL	TU-687	+			0.0180	0.0026	-0.6805	0.3002	5	YES	YES	IG1
b1299	ycjC	TU-687	+	S		0.0032	0.0000	-0.7574	0.3894	5			
b1300	aldH	TU-687	+		S	0.0117	0.0001	-0.6139	0.5332	5	NO	NO	ORF
b1301	ordL	TU-687	+	S	S	0.0001	0.0000	-0.8813	0.2559	1			
b1302	goaG	TU-687	+			0.3136	0.0010	-0.0665	0.3319	5	NO	NO	IG2
b1303	pspF	TU-688	-			0.8444	0.4851	-0.0168	0.0696	3	NO	NO	IG2
b1304	pspA	TU-689	+			0.6077	0.0380	-0.0535	0.2465				
b1305	pspB	TU-689	+	S		0.0011	0.1031	-0.3347	-0.1465	4			
b1306	pspC	TU-689	+	S		0.0006	0.0327	-0.4425	-0.1357	4			
b1307	pspD	TU-689	+			0.0455	0.8218	0.1735	0.1965				
b1308	pspE	TU-689	+	S		0.0001	0.7016	0.5683	0.5116	4			
b1309	ycjM	TU-690	+	S		0.0003	0.5768	0.6592	0.5659	1	NO	NO	IG1
b1310	b1310	TU-690	+	S		0.0010	0.5507	0.5893	0.4927	1			
b1311	ycjO	TU-690	+	S		0.0012	0.4057	0.3558	0.4639	1			
b1312	ycjP	TU-690	+	S		0.0003	0.5057	0.4767	0.5605	1			
b1313	ycjQ	TU-690	+	S		0.0001	0.2384	0.5704	0.4263	1	NO	NO	ORF
b1314	b1314	TU-690	+	S		0.0000	0.7652	0.4709	0.4368	1	NO	NO	ORF
b1315	ycjS	TU-690	+			0.0274	0.4238	0.2147	0.1174	5			
b1316	ycjT	TU-690	+	S		0.0001	0.5399	0.6717	0.7549	1			
b1317	ycjU	TU-690	+	S		0.0001	0.3994	0.4758	0.3780	1			
b1318	ycjV	TU-690	+	S		0.0002	0.7619	0.4143	0.4544	1			
b1319	ompG	TU-691	+			0.0044	0.7196	0.4176	0.4784				
b1320	ycjW	TU-692	-			0.0050	0.2865	0.2721	0.1589	5	YES	YES	IG1
b1321	ycjX	TU-693	+			0.9234	0.7638	0.0110	0.0642	5	YES	YES	IG1
b1322	ycjF	TU-693	+			0.0231	0.7011	0.2084	0.2613	5			
b1323	tyrR	TU-694	+			0.0290	0.5165	-0.2853	-0.3789				
b1324	tpx	TU-695	-			0.3975	0.5543	0.0501	0.1668				
b1325	ycjG	TU-696	+			0.4351	0.7339	-0.1268	-0.0618	5	NO	NO	ORF
b1326	ycjI	TU-697	-	S		0.0012	0.0694	-0.3003	-0.5547	4			
b1327	b1327	TU-698	-			0.9238	0.5823	0.0120	0.1460				
b1328	ycjZ	TU-699	+	S		0.0003	0.9664	-0.5295	-0.5211	4			
b1329	b1329	TU-700	+			0.0705	0.0973	-0.3166	0.0218	5	YES	NO	IG1
b1330	b1330	TU-701	-			0.0045	0.5994	-0.1829	-0.1315	5	NO	YES	ORF
b1332	ynaJ	TU-702	+			0.1519	0.0511	-0.2827	0.2467	5	YES	YES	IG1
b1333	ydaA	TU-703	-			0.0036	0.2228	-0.4953	-0.2392				
b1334	fnr	TU-704	-			0.0367	0.1305	-0.2891	-0.0690	5	NO	NO	ORF
b1335	ogt	TU-705	-			0.6351	0.3657	0.0450	0.1502				
b1336	ydaH	TU-705	-			0.7246	0.0596	0.0481	0.3726	5	NO	NO	ORF
b1337	b1337	TU-705	-			0.5948	0.0452	-0.0638	0.2931				
b1338	ydaJ	TU-705	-			0.6936	0.0243	0.0387	0.4115				
b1339	ydaK	TU-706	+			0.0699	0.0264	-0.2170	0.1361				
b1340	ydaL	TU-707	+			0.0169	0.0090	-0.2538	0.1046	5	YES	YES	IG1
b1341	b1341	TU-708	-	S		0.0000	0.0389	-1.0665	-0.4912	4			

b1342	b1342	TU-709	+	S		0.0003	0.2906	-0.4881	-0.3537	4			
b1343	dbpA	TU-710	+			0.1354	0.1170	-0.1896	0.0930				
b1344	ydaO	TU-711	-			0.0839	0.8510	0.2166	0.1908				
b1345	b1345	TU-711	-			0.0039	0.7159	0.3723	0.4314				
b1346	ydaQ	TU-711	-	S		0.0002	0.9274	0.7186	0.7349	4			
b1347	ydaC	TU-711	-	S		0.0000	0.0043	0.9668	0.4152	4			
b1348	lar	TU-711	-	S		0.0000	0.1409	0.7283	0.5124	4			
b1349	recT	TU-711	-	S		0.0011	0.3266	0.3416	0.2269	1	NO	NO	ORF
b1350	recE	TU-711	-			0.0127	0.6653	0.2537	0.1742				
b1351	racC	TU-712	-	S		0.0000	0.1253	0.6009	0.3371	4			
b1352	ydaD	TU-713	-	S		0.0002	0.3260	0.5535	0.3963	4			
b1353	sieB	TU-714	+			0.1162	0.9498	0.1886	0.1767				
b1354	b1354	TU-714	+			0.0859	0.4410	0.2535	0.0741				
b1355	b1355	TU-715	-			0.0151	0.1833	0.2210	-0.0193				
b1356	ydaR	TU-716	-			0.2580	0.3187	0.1208	-0.0534				
b1357	ydaS	TU-717	+			0.9377	0.9274	-0.0066	-0.0267				
b1358	ydaT	TU-717	+			0.0032	0.9214	0.4833	0.5014				
b1359	ydaU	TU-717	+			0.0661	0.6501	0.2626	0.1774				
b1360	b1360	TU-717	+			0.0207	0.8934	0.3366	0.3626				
b1361	ydaW	TU-717	+			0.1266	0.5360	0.1965	0.3104				
b1362	b1362	TU-717	+			0.0079	0.6807	0.5335	0.4367				
b1363	trkG	TU-718	+			0.0708	0.1067	0.2345	-0.0736				
b1364	b1364	TU-718	+			0.0437	0.0530	-0.6250	-1.2728				
b1365	b1365	TU-718	+			0.2426	0.9728	0.1829	0.1760				
b1366	ydaY	TU-718	+			0.3862	0.9772	0.1511	0.1448				
b1367	b1367	TU-718	+			0.0027	0.4883	0.6620	0.8279				
b1368	b1368	TU-719	+			0.1825	0.7043	0.1880	0.2605				
b1369	b1369	TU-719	+			0.0219	0.5937	0.3516	0.4436	3	NO	NO	IG2
b1370	trs5	TU-720	-			0.0842	0.2406	0.2281	0.4023	3	NO	NO	IG2
b1371	b1371	TU-721	+			0.0903	0.0886	0.2261	0.5255				
b1372	b1372	TU-721	+			0.1163	0.2315	0.2314	0.4570				
b1374	b1374	TU-722	-			0.6221	0.0895	-0.0513	-0.3563				
b1375	ynaE	TU-723	-			0.3701	0.4636	0.2505	0.0072				
b1376	ynaF	TU-724	-	S		0.0017	0.0027	-0.4691	0.1341	1	NO	NO	ORF
b1377	b1377	TU-725	-			0.1608	0.0852	0.1954	0.5357	5	NO	NO	ORF
b1378	ydbK	TU-726	-			0.0170	0.1498	-0.3435	-0.0883				
b1379	hslJ	TU-727	-			0.8336	0.2271	-0.0212	-0.3489				
b1380	ldhA	TU-728	-			0.0843	0.0990	-0.1448	-0.6509	5	YES	YES	IG1
b1381	ydbH	TU-729	+			0.1473	0.1290	-0.2009	0.1356	5	YES	YES	IG1
b1382	ynbE	TU-729	+	S		0.0004	0.8333	-0.5033	-0.4669	1			
b1383	ydbL	TU-729	+			0.7162	0.3191	0.0403	0.2062	5	NO	NO	IG2
b1384	feaR	TU-730	-			0.0488	0.0041	0.2901	0.8434	5	NO	NO	ORF
b1385	feaB	TU-731	+	S		0.0002	0.3119	0.4364	0.5705	4			
b1386	tynA	TU-732	-	S		0.0011	0.8403	0.4972	0.5272	4			
b1387	maoC	TU-733	-	S		0.0001	0.5724	0.5084	0.5844	1	NO	NO	ORF
b1388	ydbO	TU-734	+	S		0.0001	0.7122	0.5253	0.4854	4			
b1389	ynbF	TU-734	+	S		0.0002	0.7469	0.5478	0.5887	4			
b1390	ydbP	TU-734	+	S		0.0006	0.2056	0.4228	0.5901	4			
b1391	b1391	TU-734	+			0.0131	0.4522	0.2132	0.2826				
b1392	b1392	TU-734	+	S		0.0014	0.0904	0.3428	0.5621	1	NO	NO	ORF
b1393	ydbS	TU-734	+			0.0030	0.9994	0.3026	0.3025				
b1394	b1394	TU-734	+	S		0.0006	0.0032	0.2620	0.6176	4			
b1395	ydbU	TU-734	+	S		0.0002	0.3313	0.5038	0.6530	4			
b1396	b1396	TU-734	+			0.0052	0.2715	0.3325	0.4868				
b1397	b1397	TU-734	+			0.0071	0.7376	0.3346	0.3786				
b1398	b1398	TU-734	+			0.0176	0.4337	0.3522	0.4952				
b1399	b1399	TU-735	+			0.1436	0.7225	0.1599	0.2156				
b1400	b1400	TU-735	+			0.5980	0.4917	0.0716	0.2099	5	NO	NO	ORF
b1401	ydbA	TU-736	+			0.3696	0.6433	0.1256	0.2300	5	YES	YES	IG1
b1402	yi22	TU-737	-	S		0.0000	0.2521	-0.7339	-0.8950	4			
b1405	ydbA	TU-738	+			0.2005	0.5382	0.1937	0.0646				
b1406	ydbC	TU-739	+			0.0907	0.3219	-0.2754	-0.0776				
b1407	ydbD	TU-739	+			0.0664	0.7821	0.3845	0.4537	5	NO	NO	ORF

b1408	b1408	TU-740	+			0.0450	0.2262	0.3631	0.6317				
b1409	b1409	TU-740	+			0.0049	0.1889	0.5332	0.8453				
b1410	b1410	TU-740	+			0.3606	0.2412	0.1269	0.3492				
b1411	ynbD	TU-740	+			0.0286	0.7028	0.3111	0.3780	5	NO	NO	ORF
b1412	acpD	TU-741	-			0.0513	0.7990	0.1755	0.1441				
b1413	hrpA	TU-742	+			0.9214	0.0939	0.0115	0.3012	5	NO	NO	ORF
b1414	ydcF	TU-743	+			0.0064	0.6433	-0.4225	-0.3467				
b1415	aldA	TU-744	+	S	S	0.0003	0.0000	-0.6119	0.3616	1	NO	NO	ORF
b1416	gapC	TU-745	-	S		0.0008	0.3062	-1.0164	-0.7098	4			
b1417	gapC	TU-745	-	S		0.0002	0.4668	-0.7415	-0.5537	4			
b1418	cybB	TU-746	+	S		0.0005	0.0233	-0.6595	-0.2481	4			
b1419	ydcA	TU-746	+	S		0.0008	0.0165	-0.6831	-0.2058	1	NO	NO	IG1
b1420	b1420	TU-747	-			0.0092	0.4538	-0.3537	-0.0719				
b1421	trg	TU-748	+			0.7120	0.1138	0.0351	0.2709				
b1422	b1422	TU-749	-			0.0240	0.0003	-0.4428	0.5800				
b1423	b1423	TU-750	+			0.0415	0.6559	0.2435	0.3192				
b1424	ydcG	TU-751	+	S		0.0000	0.2651	0.6217	0.4731	4			
b1425	b1425	TU-752	-			0.0080	0.9569	0.2822	0.2892				
b1426	ydcH	TU-753	+			0.0044	0.1343	0.3365	0.6020				
b1427	rimL	TU-753	+			0.0092	0.7632	-0.3247	-0.3751				
b1428	b1428	TU-754	-			0.2567	0.2824	-0.1253	0.0842	5	YES	YES	IG1
b1429	tehA	TU-755	+			0.0037	0.8067	0.2828	0.3140	5	YES	YES	IG1
b1430	tehB	TU-755	+			0.0929	0.1584	-0.1991	-0.4436	5			
b1431	b1431	TU-756	+			0.2715	0.4096	-0.1256	0.0409	5	YES	YES	IG1
b1432	b1432	TU-757	+			0.2189	0.8818	0.0989	0.1162				
b1433	b1433	TU-758	-			0.0309	0.7294	0.1816	0.2293	5	YES	NO	IG1
b1434	ydcN	TU-759	+			0.4276	0.1084	0.1329	-0.2042	5	YES	NO	IG1
b1435	ydcP	TU-759	+	S		0.0017	0.5565	0.3978	0.4660	1	NO	NO	ORF
b1436	b1436	TU-760	-			0.1953	0.7274	0.1629	0.2254	5	YES	NO	IG1
b1437	b1437	TU-761	-			0.0029	0.8471	0.3941	0.4210				
b1438	b1438	TU-762	+			0.0187	0.0534	-0.2193	0.0570				
b1439	b1439	TU-762	+			0.4236	0.0065	0.0622	0.4630				
b1440	b1440	TU-763	+			0.1545	0.0135	-0.1657	0.3474				
b1441	b1441	TU-763	+			0.0265	0.0317	-0.3154	0.0988				
b1442	b1442	TU-763	+			0.3173	0.0079	-0.1199	0.3541				
b1443	b1443	TU-763	+			0.9553	0.0047	-0.0075	0.5497	5	NO	NO	ORF
b1444	b1444	TU-763	+			0.0547	0.0410	-0.2878	0.1071	5	YES	YES	IG1
b1445	b1445	TU-764	+			0.3440	0.1611	-0.1822	0.1938				
b1446	b1446	TU-764	+			0.0597	0.6329	-0.1439	-0.0780				
b1447	b1447	TU-765	-			0.2941	0.0367	0.0739	-0.1938				
b1448	b1448	TU-765	-			0.0154	0.0808	-0.1813	-0.4176				
b1449	yncB	TU-766	+	S		0.0005	0.7538	-0.6424	-0.5464	4			
b1450	b1450	TU-766	+	S		0.0000	0.0562	-0.5747	-0.1301	1	YES	NO	IG1
b1451	b1451	TU-767	-			0.0201	0.8736	0.2724	0.2482				
b1452	b1452	TU-768	+			0.9312	0.5447	0.0244	0.2213	5	YES	YES	IG1
b1453	ansP	TU-769	-			0.0058	0.6086	0.3167	0.2571	5	YES	YES	ORF
b1454	b1454	TU-770	+			0.1016	0.1930	-0.2085	0.0847				
b1455	b1455	TU-770	+			0.6980	0.1609	0.0505	0.3111				
b1456	rhsE	TU-771	+			0.9065	0.5679	0.0111	0.1313	5	NO	NO	IG1
b1457	ydcD	TU-771	+			0.2295	0.6677	0.1567	0.2459	5			
b1458	b1458	TU-772	+			0.1977	0.4116	0.2029	0.3639	5	NO	NO	IG1
b1459	b1459	TU-772	+			0.1294	0.6114	0.2140	0.3287	5			
b1461	ydcE	TU-773	+			0.0112	0.8360	-0.6373	-0.6951				
b1462	b1462	TU-774	-			0.9254	0.0647	0.0107	0.3924				
b1463	b1463	TU-775	+			0.7956	0.5382	-0.0353	0.1085	5	NO	NO	ORF
b1464	yddE	TU-776	-			0.0987	0.0123	0.1129	-0.1259				
b1465	narV	TU-777	-			0.0139	0.9152	0.3050	0.3206				
b1466	narW	TU-777	-			0.0320	0.1867	0.2306	0.4262				
b1467	narY	TU-777	-			0.1771	0.5787	0.1759	0.2810				
b1468	narZ	TU-777	-			0.0404	0.5386	0.3712	0.5155				
b1469	narU	TU-778	-			0.0289	0.2967	0.3466	0.5581	5	YES	NO	IG1
b1470	b1470	TU-779	-	S		0.0000	0.0276	0.7608	0.3792	4			
b1471	b1471	TU-779	-	S		0.0000	0.0029	0.7488	0.3126	1	NO	NO	ORF

b1472	b1472	TU-779	-		0.0078	0.7693	0.6117	0.5439				
b1473	yddG	TU-780	-		0.2288	0.7258	-0.1010	-0.1507	5	NO	YES	IG1
b1474	fdnG	TU-781	+		0.0049	0.3598	0.3907	0.2086	5	NO	YES	IG1
b1475	fdnH	TU-781	+		0.0090	0.5861	0.3917	0.4853	5			
b1476	fdnI	TU-781	+		0.5660	0.7080	0.0574	-0.0101	5	NO	NO	ORF
b1477	yddM	TU-782	-		0.7518	0.9903	-0.0344	-0.0323				
b1478	adhP	TU-782	-	S	0.0004	0.0008	-0.7878	0.0947	4			
b1479	sfcA	TU-783	-	S	0.0006	0.0088	-0.3170	0.0171	1	NO	NO	ORF
b1480	rpsV	TU-784	-	S	0.0000	0.0424	-1.3624	-0.6257	1	NO	NO	IG1
b1481	b1481	TU-784	-	S	0.0000	0.0145	-1.3839	-0.4038	1	YES	YES	IG1
b1482	osmC	TU-785	+	S	0.0000	0.0250	-1.1424	-0.3121	1	YES	YES	IG1
b1483	b1483	TU-786	-		0.6411	0.0690	0.0395	0.2957				
b1484	b1484	TU-787	-		0.8807	0.0910	0.0144	0.2641	5			
b1485	b1485	TU-787	-		0.9182	0.0136	-0.0121	0.4376	5			
b1486	b1486	TU-787	-		0.6393	0.0046	0.0475	0.4897	5	NO	NO	IG1
b1487	b1487	TU-788	-		0.2496	0.5163	-0.1636	-0.0401				
b1488	b1488	TU-789	-		0.4205	0.0375	-0.1074	0.3212				
b1489	b1489	TU-790	-		0.9893	0.0430	-0.0016	0.4205				
b1490	b1490	TU-791	-		0.2013	0.3818	-0.1085	0.0563				
b1491	b1491	TU-792	-	S	0.0013	0.8713	0.4727	0.4473	4			
b1492	xasA	TU-793	-	S	0.0000	0.5643	-2.0308	-1.7553	4			
b1493	gadB	TU-794	-	S	0.0000	0.0617	-1.9962	-1.1729	4			
b1494	pqqL	TU-795	-	S	0.0001	0.0664	0.3264	0.0665	4			
b1495	yddB	TU-796	-		0.0450	0.1275	0.2175	-0.1597	5	NO	NO	ORF
b1496	yddA	TU-797	-	S	0.0003	0.5609	0.6427	0.5337	1	NO	NO	ORF
b1497	b1497	TU-798	-	S	0.0000	0.5940	0.6587	0.5642	4			
b1498	b1498	TU-799	-		0.0388	0.0146	0.1604	0.4703				
b1499	b1499	TU-800	-	S	0.0004	0.7037	0.6618	0.5953	4			
b1500	b1500	TU-801	-	S	0.0000	0.5165	0.5532	0.4715	4			
b1501	b1501	TU-802	-		0.0171	0.8032	0.2666	0.2330	5	NO	NO	ORF
b1502	b1502	TU-803	-	S	0.0001	0.2586	0.6951	0.5390	4			
b1503	b1503	TU-804	-	S	0.0018	0.6649	0.3845	0.3180	4			
b1504	b1504	TU-805	-	S	0.0006	0.4112	0.7403	0.5694	4			
b1505	b1505	TU-806	-	S	0.0011	0.7815	0.4937	0.4425	4			
b1506	b1506	TU-807	-	S	0.0012	0.9608	0.5905	0.6002	4			
b1507	hipA	TU-808	-		0.4841	0.6571	0.0946	0.0046				
b1508	hipB	TU-808	-		0.3964	0.4093	-0.0815	-0.1950				
b1509	b1509	TU-809	-		0.0352	0.5272	0.4024	0.5426				
b1510	ydeK	TU-810	-		0.5669	0.8108	0.0764	0.0287	5	NO	NO	ORF
b1511	ydeV	TU-811	-		0.0626	0.4099	0.3258	0.5149	5			
b1512	ydeW	TU-811	-		0.0864	0.4692	0.2033	0.3090	5	NO	NO	IG1
b1513	b1513	TU-812	+		0.0214	0.5845	0.3730	0.4762	5	NO	NO	IG1
b1514	ydeY	TU-812	+		0.0196	0.5456	0.4299	0.5510	5			
b1515	ydeZ	TU-812	+		0.0989	0.0145	0.1518	0.5090	5			
b1516	b1516	TU-812	+		0.9903	0.1897	-0.0017	0.2931	5			
b1517	yneB	TU-812	+		0.1669	0.1951	0.1659	0.3589	5			
b1518	b1518	TU-812	+		0.9578	0.0422	0.0033	0.3209	5			
b1519	b1519	TU-813	+	S	0.0005	0.0388	-0.6085	-0.1053	4			
b1520	b1520	TU-814	-		0.0150	0.2228	-0.5906	-0.2484				
b1521	uxaB	TU-815	-		0.2147	0.2146	0.1468	0.3624				
b1522	b1522	TU-816	-		0.9784	0.2671	0.0034	0.2126				
b1523	b1523	TU-816	-		0.0822	0.9398	-0.3501	-0.3657				
b1524	yneH	TU-816	-		0.2919	0.7028	-0.1499	-0.2124				
b1525	b1525	TU-816	-		0.0466	0.2518	-0.2062	-0.0536				
b1526	yneJ	TU-817	+		0.3982	0.2317	0.0628	0.2202				
b1527	b1527	TU-818	+		0.0046	0.0413	0.4752	0.1072				
b1528	ydeA	TU-819	+		0.0030	0.0908	0.3766	0.0630				
b1529	ydeB	TU-820	-		0.7464	0.2686	-0.0186	-0.1531	5	YES	YES	IG1
b1530	marR	TU-821	+		0.0034	0.2671	0.2781	0.1335	5	YES	YES	IG1
b1531	marA	TU-821	+		0.2221	0.2826	-0.1479	-0.2961	5			
b1532	marB	TU-821	+		0.0074	0.1764	0.3049	0.4802	5			
b1533	ydeD	TU-822	-		0.2929	0.3859	-0.0889	0.0221	5	YES	YES	IG1
b1534	ydeF	TU-823	+		0.0289	0.3420	0.1759	0.2797	5	YES	YES	IG1

b1535	ydeH	TU-824	-		0.3404	0.5964	0.1409	0.2369				
b1536	ydeI	TU-825	-		0.6003	0.7436	0.0676	0.1740				
b1537	ydeJ	TU-826	+		0.7713	0.8518	0.0313	-0.0035				
b1538	dcp	TU-827	-	S	0.0000	0.6485	0.2896	0.3264	4			
b1539	ydfG	TU-828	+	S	0.0004	0.6706	-0.2399	-0.2029	4			
b1540	ydfH	TU-828	+		0.5182	0.9982	0.0526	0.0523				
b1541	b1541	TU-829	+	S	0.0000	0.0223	-0.5448	-0.2040	4			
b1542	ydfI	TU-830	-		0.2139	0.4295	0.1438	0.0203				
b1543	b1543	TU-831	-		0.0765	0.8506	0.3457	0.3910	5	NO	NO	ORF
b1546	ydfM	TU-832	-		0.3748	0.8534	-0.0606	-0.0401				
b1547	b1547	TU-832	-		0.0225	0.6433	0.3822	0.4717				
b1548	nohA	TU-832	-		0.0021	0.3330	0.4603	0.6107				
b1549	ydfO	TU-833	+	S	0.0000	0.0087	1.1620	0.4705	1	YES	NO	IG1
b1550	b1550	TU-834	-		0.0322	0.8085	-0.8738	-0.7401	5	NO	NO	ORF
b1551	b1551	TU-835	-		0.0042	0.9835	0.5854	0.5811				
b1552	cspI	TU-835	-		0.0381	0.8998	0.3678	0.3421				
b1553	b1553	TU-836	-		0.0168	0.9916	0.3864	0.3885				
b1554	b1554	TU-836	-		0.0200	0.4963	0.4769	0.6372				
b1555	b1555	TU-836	-		0.0129	0.6487	0.4355	0.3393				
b1556	b1556	TU-836	-		0.0608	0.4507	0.2933	0.4391				
b1557	cspB	TU-837	-		0.1936	0.5913	0.3603	0.1892				
b1558	cspF	TU-838	+		0.5053	0.6496	0.1181	0.2124				
b1559	b1559	TU-839	-		0.0133	0.3483	0.3887	0.6056				
b1560	b1560	TU-839	-		0.0164	0.0327	0.2972	0.6543				
b1561	rem	TU-840	-		0.0188	0.2678	0.3171	0.5242				
b1562	relF	TU-841	-		0.0435	0.0124	0.1706	0.4890				
b1563	relE	TU-841	-	S	0.0004	0.0105	-0.3759	-0.0926	4			
b1564	relB	TU-841	-	S	0.0001	0.2048	-0.6039	-0.4454	4			
b1565	b1565	TU-842	+		0.2262	0.3100	-0.2051	-0.0059				
b1566	flxA	TU-843	+		0.0095	0.5636	-0.3456	-0.5747				
b1567	b1567	TU-844	-		0.8070	0.5560	0.0275	0.1173				
b1568	b1568	TU-844	-	S	0.0001	0.4344	0.4901	0.3664	4			
b1569	dicC	TU-844	-	S	0.0000	0.6761	0.8826	0.8110	4			
b1570	dicA	TU-845	+	S	0.0002	0.2331	0.4348	0.2352	4			
b1571	ydfA	TU-846	+	S	0.0000	0.0220	0.9231	0.3990	4			
b1572	ydfB	TU-846	+		0.0443	0.0313	0.2533	-0.2234				
b1573	ydfC	TU-846	+	S	0.0004	0.3193	0.4156	0.2774	4			
b1574	dicF	TU-847	+		0.0033	0.4015	0.4555	0.5898				
b1575	dicB	TU-848	+	S	0.0001	0.5672	0.5898	0.4847	4			
b1576	ydfD	TU-848	+	S	0.0000	0.3552	0.6938	0.5558	4			
b1577	ydfE	TU-849	+	S	0.0010	0.8437	0.3434	0.3144	4			
b1579	b1579	TU-849	+	S	0.0003	0.0998	0.3765	0.1815	4			
b1580	rspB	TU-850	-	S	0.0001	0.0503	0.5980	0.2820	4			
b1581	rspA	TU-850	-	S	0.0001	0.4798	0.4579	0.5495	4			
b1582	b1582	TU-851	-		0.0947	0.4602	0.1578	0.2531	5	NO	NO	ORF
b1583	b1583	TU-852	+	S	0.0001	0.0190	0.2883	0.1204	1	NO	NO	ORF
b1584	speG	TU-852	+	S	0.0012	0.0457	0.3139	0.1343	4			
b1585	ynfC	TU-853	-		0.0314	0.9095	-0.2874	-0.3121				
b1586	b1586	TU-854	+		0.5874	0.6006	-0.0470	-0.1171				
b1587	b1587	TU-855	+		0.0466	0.0309	0.2654	-0.2221				
b1588	b1588	TU-855	+		0.8484	0.2071	0.0192	-0.2466	5	NO	NO	IG1
b1589	b1589	TU-855	+		0.0273	0.0021	0.1701	-0.6166				
b1590	b1590	TU-855	+		0.4717	0.1357	0.0628	-0.3621				
b1591	b1591	TU-855	+		0.1239	0.0802	0.2108	-0.1497				
b1592	b1592	TU-856	+		0.0509	0.4383	0.2658	0.3938				
b1593	b1593	TU-857	-		0.8801	0.1799	0.0184	-0.2089				
b1594	mlc	TU-858	-	S	0.0001	0.1001	-0.3520	-0.1397	1	YES	NO	IG1
b1595	ynfL	TU-859	-		0.0058	0.1694	-0.3344	-0.1518				
b1596	ynfM	TU-860	+		0.0306	0.3367	0.2231	0.3338				
b1597	asr	TU-861	+		0.1667	0.2226	-0.1184	-0.3441				
b1598	b1598	TU-862	+		0.0659	0.1509	-0.2525	0.0019				
b1599	b1599	TU-863	-		0.4235	0.0036	0.0681	0.4867				
b1600	b1600	TU-863	-		0.0531	0.1156	0.2416	0.5310				

b1601	b1601	TU-864	+		0.1107	0.0237	-0.2065	0.1568				
b1601	b1601	TU-864	+		0.1107	0.0237	-0.2065	0.1568				
b1602	pntB	TU-865	-	S	0.0003	0.1599	-0.4296	-0.1434	4			
b1603	pntA	TU-865	-	S	0.0000	0.2529	-0.5246	-0.3776	4			
b1604	b1604	TU-866	+		0.2197	0.5916	-0.2383	-0.3798	5	YES	YES	IG1
b1605	b1605	TU-867	+		0.4104	0.8329	-0.0925	-0.1283	5	NO	NO	ORF
b1606	ydgB	TU-867	+		0.2111	0.0358	0.1166	-0.2377				
b1607	ydgC	TU-868	-		0.9051	0.7245	0.0107	-0.0500				
b1608	rstA	TU-869	+		0.1329	0.0036	0.1797	-0.6330				
b1609	rstB	TU-869	+		0.0425	0.0093	0.2408	-0.3740	5	NO	NO	ORF
b1610	tus	TU-870	+		0.0054	0.1947	0.3854	0.2052				
b1611	fumC	TU-871	-		0.0799	0.0259	-0.1313	0.2167				
b1612	fumA	TU-872	-		0.7026	0.0918	-0.0592	0.2693				
b1613	manA	TU-873	+		0.1267	0.6198	-0.1460	-0.2010	5	NO	NO	ORF
b1614	ydgA	TU-873	+		0.3736	0.6941	-0.0988	-0.1663	3	NO	NO	IG2
b1615	uidC	TU-874	-	S	0.0002	0.2331	0.4943	0.6360	4	NO	NO	IG2
b1616	uidB	TU-874	-	S	0.0004	0.8823	0.5032	0.5258	4			
b1617	uidA	TU-874	-	S	0.0008	0.2624	0.5265	0.7051	4			
b1618	uidR	TU-875	-		0.7275	0.3613	0.0342	0.1638	5	YES	YES	IG1
b1619	hdhA	TU-876	-	S	0.0000	0.3830	-0.8401	-0.6075	4			
b1620	malI	TU-877	-		0.4897	0.8890	0.0787	0.0584				
b1621	malX	TU-878	+		0.0120	0.4078	0.2824	0.3904				
b1622	malY	TU-878	+		0.4115	0.3858	0.0821	-0.0348				
b1623	add	TU-879	+		0.0060	0.1884	0.3114	0.1559				
b1624	b1624	TU-880	-		0.6046	0.4353	-0.0885	-0.2594				
b1625	b1625	TU-881	+	S	0.0001	0.0279	0.4684	-0.0394	4			
b1626	b1626	TU-882	+		0.9168	0.1168	-0.0119	-0.2505				
b1627	b1627	TU-882	+		0.3912	0.3729	0.0815	0.2186				
b1628	b1628	TU-882	+		0.1944	0.6597	0.1412	0.0708	5	NO	NO	ORF
b1629	b1629	TU-882	+	S	0.0001	0.0135	0.3626	0.1209	4			
b1630	ydgO	TU-882	+	S	0.0016	0.3408	-0.1877	-0.0734	4			
b1631	b1631	TU-882	+		0.7110	0.6005	-0.0354	0.0321				
b1632	ydgQ	TU-882	+		0.0172	0.4284	0.2944	0.1971				
b1633	nth	TU-882	+		0.6341	0.1629	0.0680	-0.1649				
b1634	ydgR	TU-883	+		0.0026	0.5624	0.2798	0.1426	5	NO	YES	IG1
b1635	gst	TU-884	+	S	0.0002	0.5541	-0.3614	-0.2953	4			
b1636	pdxY	TU-885	-		0.2273	0.1132	0.0898	0.2915				
b1637	tyrS	TU-885	-		0.0052	0.0257	-0.3606	-0.0318				
b1638	pdxH	TU-885	-		0.2688	0.4612	-0.0849	-0.1698				
b1639	ydhA	TU-886	-		0.6750	0.5745	-0.0429	0.0482				
b1640	b1640	TU-887	-		0.4402	0.6611	0.0632	0.1167				
b1641	slyB	TU-888	+	S	0.0007	0.4358	-0.5126	-0.3935	4			
b1642	slyA	TU-889	-		0.0754	0.8211	-0.1157	-0.1525	5	YES	YES	IG1
b1643	b1643	TU-890	+		0.0314	0.4568	0.2349	0.0968	5	YES	YES	IG1
b1644	b1644	TU-890	+		0.0078	0.9934	0.3443	0.3431	5			
b1645	b1645	TU-890	+	S	0.0003	0.3463	0.5557	0.4161	1	NO	NO	ORF
b1646	sodC	TU-891	-	S	0.0000	0.0643	-0.5986	-0.2729	4			
b1647	b1647	TU-891	-	S	0.0001	0.6581	-0.4699	-0.5437	4			
b1648	b1648	TU-891	-		0.0778	0.9215	0.2027	0.1855				
b1649	b1649	TU-892	+		0.0022	0.8476	0.2322	0.2146				
b1650	nemA	TU-892	+		0.4751	0.6667	0.0921	0.0220				
b1651	gloA	TU-892	+		0.9894	0.0260	0.0011	0.3531				
b1652	rnt	TU-893	+		0.0042	0.3549	0.2459	0.1637				
b1653	lhr	TU-893	+		0.0250	0.8934	0.1961	0.1798	5	NO	NO	ORF
b1654	ydhD	TU-894	-		0.0045	0.8930	0.3065	0.2923	5	YES	YES	IG1
b1655	ydhO	TU-895	+		0.0115	0.1406	-0.1343	-0.0054				
b1656	sodB	TU-896	+		0.0316	0.4601	-0.6973	-0.4715	5	YES	YES	
b1657	b1657	TU-897	-		0.0033	0.7274	0.3757	0.4226				
b1658	purR	TU-898	+		0.0431	0.1514	-0.1760	-0.3219				
b1659	ydhB	TU-899	-		0.2491	0.7831	0.1254	0.0879				
b1660	ydhC	TU-900	+		0.0057	0.4455	0.1738	0.1163				
b1661	cfa	TU-901	+	S	0.0000	0.7818	-0.8224	-0.7628	4			
b1662	ribE	TU-902	-		0.9076	0.8634	0.0113	-0.0139	5	NO	NO	ORF
b1663	ydhE	TU-903	+		0.5433	0.1741	-0.0433	0.1463				

b1664	b1664	TU-904	-		0.0325	0.3425	-0.3693	-0.1338				
b1665	valV	TU-905	+		0.0869	0.7288	0.6019	0.4633	5	YES	YES	IG1
b1666	valW	TU-905	+		0.0509	0.7451	0.4539	0.5374	5			
b1667	b1667	TU-906	+	S	0.0001	0.9113	-0.3594	-0.3761	4			
b1668	b1668	TU-907	+		0.0235	0.1768	-0.4172	-0.0426	5	NO	NO	IG1
b1669	b1669	TU-908	-		0.1625	0.3845	0.1913	0.3455	5	NO	NO	ORF
b1670	ydhU	TU-908	-		0.3519	0.0894	0.0917	0.3860				
b1671	b1671	TU-908	-		0.2813	0.2854	-0.0825	0.0547	5	NO	NO	IG1
b1672	b1672	TU-908	-		0.0272	0.2746	0.3173	0.5506				
b1673	b1673	TU-908	-		0.0308	0.4737	0.3562	0.1580				
b1674	b1674	TU-908	-		0.2415	0.2759	0.1716	0.4762				
b1675	b1675	TU-909	-		0.1704	0.0234	-0.1532	0.3733				
b1676	pykF	TU-910	+		0.0045	0.0170	-1.8623	-0.4671				
b1677	lpp	TU-911	+		0.0718	0.9568	-0.1452	-0.1382				
b1678	ynhG	TU-912	-	S	0.0002	0.1458	-0.8946	-0.4074	4			
b1679	ynhA	TU-912	-	S	0.0007	0.6418	-0.6309	-0.5078	4			
b1680	b1680	TU-912	-		0.1822	0.2840	-0.2575	-0.6110				
b1681	ynhC	TU-912	-		0.8075	0.1586	0.0526	-0.4133	5	NO	NO	ORF
b1682	ynhD	TU-912	-		0.3127	0.3192	0.3205	-0.1216	5	NO	NO	ORF
b1683	ynhE	TU-912	-		0.5885	0.0798	-0.1467	-0.9694				
b1684	ydiC	TU-912	-		0.2471	0.2901	0.2783	-0.0771				
b1685	b1685	TU-913	-		0.0057	0.2243	0.6861	0.3844	5	YES	YES	IG1
b1686	b1686	TU-913	-		0.2063	0.0045	0.1028	-0.2556				
b1687	ydiJ	TU-913	-		0.0186	0.0496	0.2208	0.0028				
b1688	b1688	TU-914	+		0.1941	0.8860	-0.1495	-0.1697				
b1689	b1689	TU-915	+	S	0.0010	0.6933	0.3925	0.4425	4			
b1690	b1690	TU-916	+	S	0.0010	0.7095	0.6373	0.5750	4			
b1691	b1691	TU-917	+	S	0.0016	0.5370	0.5322	0.4253	4			
b1692	ydiB	TU-917	+	S	0.0012	0.5664	0.2785	0.2179	1	NO	NO	ORF
b1693	aroD	TU-917	+		0.0043	0.7521	-0.1066	-0.1392				
b1694	ydiF	TU-918	+	S	0.0009	0.3653	0.4910	0.3541	1	NO	NO	ORF
b1695	b1695	TU-918	+		0.1010	0.8744	0.2284	0.2568				
b1696	b1696	TU-919	-		0.7050	0.2992	-0.0503	-0.2745				
b1697	ydiQ	TU-920	+		0.0101	0.6083	0.3672	0.2809				
b1698	ydiR	TU-920	+		0.0094	0.7399	0.4770	0.5390	5	NO	NO	ORF
b1699	ydiS	TU-920	+		0.0349	0.5865	0.3597	0.4603				
b1700	ydiT	TU-920	+		0.0828	0.9451	0.2942	0.2805				
b1701	ydiD	TU-920	+		0.0748	0.3224	0.3342	0.5751				
b1702	ppsA	TU-921	-		0.0639	0.1834	-0.2748	0.0488				
b1703	ydiA	TU-922	+		0.7478	0.4874	0.0128	-0.0845				
b1704	aroH	TU-923	+		0.3009	0.0580	-0.0472	0.2136				
b1705	ydiE	TU-924	+		0.1718	0.9621	0.2810	0.2699				
b1706	b1706	TU-925	-		0.0336	0.2459	0.2167	0.3852	5	YES	YES	IG1
b1707	b1707	TU-925	-		0.7968	0.3004	-0.0249	0.1651				
b1708	nlpC	TU-926	-		0.0339	0.4156	-0.1839	-0.2791				
b1709	btuD	TU-927	-		0.4328	0.5679	-0.1089	0.0101				
b1710	btuE	TU-927	-		0.0406	0.8384	0.1149	0.0889				
b1711	btuC	TU-927	-		0.6400	0.0059	0.0345	0.3492				
b1712	himA	TU-928	-	S	0.0013	0.5639	-0.5818	-0.4768	4			
b1713	pheT	TU-928	-		0.7654	0.2752	0.0260	0.1523				
b1714	pheS	TU-928	-		0.2986	0.3947	-0.2542	-0.4971				
b1715	pheM	TU-929	-		0.7647	0.3921	0.1045	0.5175				
b1716	rplT	TU-930	-		0.0050	0.9707	-1.1736	-1.1882				
b1717	rpmI	TU-930	-		0.0068	0.8251	-0.6819	-0.7372				
b1718	infC	TU-930	-		0.6674	0.1213	-0.0251	-0.1712				
b1719	thrS	TU-930	-		0.2879	0.1279	-0.1157	-0.4095				
b1720	b1720	TU-931	+		0.0887	0.0210	0.2360	-0.1599				
b1721	b1721	TU-931	+	S	0.0003	0.1085	0.4632	0.2491	4			
b1722	b1722	TU-932	-	S	0.0012	0.0037	0.7998	0.1176	4			
b1723	pfkB	TU-933	+		0.3879	0.3778	0.0780	-0.0709				
b1724	b1724	TU-933	+		0.0038	0.0766	-0.5730	0.0250				
b1725	b1725	TU-933	+	S	0.0000	0.2559	-0.9836	-0.7702	1	NO	NO	IG1
b1726	b1726	TU-934	-		0.0026	0.3741	-0.2526	-0.1531				

b1727	yniC	TU-935	+			0.1498	0.0225	0.1635	-0.1346				
b1728	b1728	TU-936	+			0.0354	0.6483	0.2903	0.2253	5	NO	NO	IG1
b1729	b1729	TU-937	+			0.0453	0.0067	0.3055	-0.2503				
b1730	b1730	TU-938	-			0.1540	0.3682	0.1554	0.0248				
b1731	b1731	TU-939	-	S		0.0018	0.3860	0.3696	0.2509	4			
b1732	katE	TU-940	+	S		0.0013	0.0523	-0.5761	-0.0007	1	YES	YES	IG1
b1733	ydjC	TU-941	-			0.6587	0.0155	-0.0302	-0.2490	5			
b1734	celF	TU-941	-			0.9248	0.0142	-0.0078	-0.3955	5			
b1735	celD	TU-941	-			0.5865	0.7433	0.0748	0.1366	5			
b1736	celC	TU-941	-			0.1644	0.9109	0.2362	0.2611	5			
b1737	celB	TU-941	-			0.3609	0.5799	0.1450	0.2489	5			
b1738	celA	TU-941	-			0.7668	0.0349	-0.0463	0.4001	5	YES	NO	IG1
b1739	osmE	TU-942	-	S		0.0000	0.0162	-1.5341	-0.8479	4			
b1740	nadE	TU-943	+			0.0257	0.3963	-0.2091	-0.0757	5	NO	NO	ORF
b1741	b1741	TU-944	+	S		0.0002	0.3714	0.3740	0.2835	1	NO	YES	ORF
b1742	b1742	TU-945	-			0.1247	0.6609	0.1844	0.2559				
b1743	spy	TU-946	-			0.1556	0.3592	-0.2280	0.0446	5	YES	YES	IG1
b1744	ydjS	TU-947	-			0.0264	0.1220	0.3462	0.6304				
b1745	b1745	TU-947	-			0.2465	0.0005	-0.1241	0.5328				
b1746	b1746	TU-947	-			0.5299	0.0004	0.0567	0.5817				
b1747	b1747	TU-947	-			0.2596	0.0091	-0.1128	0.3471				
b1748	cstC	TU-947	-	S	S	0.0018	0.0000	-0.4425	0.4683	4			
b1749	xthA	TU-948	+			0.1792	0.2773	-0.1306	0.0028				
b1750	ydjX	TU-949	+			0.2919	0.1784	-0.1559	0.8963				
b1751	ydjY	TU-949	+			0.4067	0.3787	0.1464	0.7888	5	NO	NO	ORF
b1752	ydjZ	TU-949	+			0.4321	0.2793	-0.0809	0.4244				
b1753	ynjA	TU-949	+			0.4152	0.3244	0.0643	0.3862				
b1754	b1754	TU-949	+			0.0973	0.6803	0.1492	0.2646				
b1755	b1755	TU-949	+			0.0077	0.9110	0.2429	0.2839				
b1756	b1756	TU-949	+	S		0.0016	0.6081	0.4008	0.2753	4			
b1757	b1757	TU-949	+	S		0.0002	0.2891	0.6316	1.4200	4			
b1758	b1758	TU-950	-			0.0155	0.2583	0.2315	0.0838				
b1759	b1759	TU-951	+			0.0070	0.0515	0.2286	0.0563				
b1760	b1760	TU-952	-			0.2576	0.0850	0.1121	-0.2242				
b1761	gdhA	TU-953	+			0.0661	0.6407	-0.3644	-0.2456				
b1762	b1762	TU-954	-			0.5097	0.2251	0.0895	-0.3432				
b1763	topB	TU-955	-			0.1270	0.8191	0.1261	0.1059				
b1764	selD	TU-955	-			0.0043	0.6777	-0.2387	-0.2821				
b1765	ydjA	TU-955	-			0.0243	0.0939	0.1996	0.3770				
b1766	sppA	TU-956	+			0.1160	0.0728	-0.1551	-0.3994				
b1767	ansA	TU-957	+			0.0486	0.2413	0.2131	0.0585				
b1768	ydjB	TU-957	+			0.0045	0.1485	0.2854	0.1099				
b1769	ydjE	TU-958	-			0.0102	0.6888	0.3836	0.4476				
b1770	b1770	TU-959	-			0.9539	0.7647	-0.0075	-0.0640	5	YES	NO	IG1
b1771	b1771	TU-960	-			0.0140	0.2461	0.2910	0.1284				
b1772	b1772	TU-960	-			0.0383	0.9917	0.2969	0.2950				
b1773	b1773	TU-960	-			0.3377	0.2311	0.0925	-0.0998				
b1774	ydjJ	TU-960	-			0.1183	0.6770	0.1852	0.1099	5	NO	NO	ORF
b1775	b1775	TU-960	-			0.0076	0.1916	0.4478	0.7274				
b1776	b1776	TU-960	-			0.0838	0.6792	0.2884	0.3644				
b1777	b1777	TU-961	-			0.9903	0.0541	0.0009	0.3670	5	NO	NO	ORF
b1778	yeaA	TU-961	-			0.5470	0.0748	-0.0862	0.2517				
b1779	gapA	TU-962	+			0.2609	0.5404	-0.0998	-0.1578				
b1780	yeaD	TU-962	+			0.1809	0.6841	-0.2009	-0.1242				
b1781	b1781	TU-963	-			0.0113	0.7940	-0.3348	-0.3720				
b1782	yeaF	TU-964	-			0.9401	0.1113	-0.0086	-0.3103				
b1783	yeaG	TU-965	+	S		0.0000	0.2556	-1.7450	-1.1995	4			
b1784	yeaH	TU-965	+	S		0.0002	0.1515	-1.1704	-0.5762	4			
b1785	yeaI	TU-966	+			0.4799	0.9248	0.0877	0.1129	5	NO	YES	IG1
b1786	yeaJ	TU-966	+	S		0.0007	0.4444	-0.4458	-0.3429	1			
b1787	yeaK	TU-966	+			0.0292	0.1729	-0.2840	-0.0653	5	NO	NO	ORF
b1788	b1788	TU-967	-	S		0.0012	0.0122	-0.5683	-0.0884	4			
b1789	yeaL	TU-968	+			0.4441	0.3366	-0.0860	0.0714				

b1790	yeaM	TU-969	-	S	0.0005	0.0093	0.4337	0.1025	4			
b1791	yeaN	TU-970	+	S	0.0001	0.5299	0.4369	0.2909	4			
b1792	yeaO	TU-970	+		0.8544	0.0634	-0.0164	-0.2999				
b1793	yoaF	TU-971	-		0.5618	0.1416	0.0619	-0.1324				
b1794	yeaP	TU-972	+		0.0211	0.0122	0.3489	-0.0576	3	NO	YES	IG2
b1795	yeaQ	TU-973	-	S	0.0000	0.1214	-1.0428	-0.6355	4	NO	YES	IG2
b1796	yoaG	TU-974	-		0.0372	0.3030	0.2235	0.3737	5			
b1797	yeaR	TU-974	-		0.0129	0.4304	0.3067	0.4612	5	NO	NO	IG1
b1798	yeaS	TU-975	-		0.0238	0.8698	0.4662	0.4132				
b1799	yeaT	TU-976	-		0.2008	0.7431	-0.1349	-0.1761				
b1800	yeaU	TU-977	+		0.1828	0.2806	0.1142	-0.0196				
b1801	yeaV	TU-978	+	S	0.0002	0.8650	0.4415	0.4605	1	NO	YES	IG1
b1802	yeaW	TU-978	+		0.0168	0.5520	0.3160	0.4062	5			
b1803	yeaX	TU-978	+		0.0084	0.8173	0.4592	0.4154	5			
b1804	rnd	TU-979	-	S	0.0011	0.0152	0.3628	0.1114	1			
b1805	fadD	TU-979	-		0.0251	0.3957	0.1628	0.0814	5	YES	YES	IG1
b1806	b1806	TU-980	-		0.2536	0.0045	0.1058	-0.2479				
b1807	yeaZ	TU-980	-	S	0.0004	0.1949	0.5697	0.3955	4			
b1808	b1808	TU-980	-		0.1840	0.5331	0.1422	0.0654				
b1809	b1809	TU-981	+		0.0321	0.4156	0.2091	0.3123	5	YES	NO	IG1
b1810	b1810	TU-982	+		0.6809	0.3806	-0.0706	0.2040				
b1811	b1811	TU-983	-		0.0308	0.7858	0.3008	0.3552				
b1812	pabB	TU-984	+		0.9123	0.1087	-0.0077	0.1796	5	NO	NO	ORF
b1813	yeaB	TU-984	+	S	0.0003	0.6539	-0.1978	-0.2515	1	NO	NO	ORF
b1814	sdaA	TU-985	+		0.2225	0.3347	0.1047	0.2191				
b1815	b1815	TU-986	+		0.5438	0.2534	0.0635	0.2952	5	YES	NO	IG1
b1816	yoaE	TU-987	-		0.6420	0.4615	0.0259	0.0925				
b1817	manX	TU-988	+	S	0.0002	0.0609	-0.7450	-0.4098	4			
b1818	manY	TU-988	+	S	0.0000	0.0588	-0.9784	-0.6271	4			
b1819	manZ	TU-988	+	S	0.0001	0.0414	-0.5959	-0.1321	4			
b1820	b1820	TU-989	+		0.0142	0.0307	-0.2677	0.0871	5	NO	NO	IG1
b1821	b1821	TU-990	+		0.0375	0.2409	0.1952	0.3537	3	NO	NO	IG2
b1822	yebH	TU-991	-		0.2025	0.0958	0.1606	-0.0861	3	NO	NO	IG2
b1823	cspC	TU-992	-		0.0483	0.0889	-0.2081	0.0028				
b1824	b1824	TU-992	-		0.1058	0.1769	-0.3178	-0.0062				
b1825	b1825	TU-993	-		0.3750	0.7393	-0.1099	-0.0418	5			
b1826	b1826	TU-993	-		0.0892	0.0777	-0.2304	-0.6818	5	YES	YES	IG1
b1827	b1827	TU-994	-		0.0175	0.2268	-0.2470	-0.4498				
b1828	b1828	TU-995	+	S	0.0001	0.7319	0.4840	0.4392	4			
b1829	htpX	TU-996	-		0.4145	0.2600	-0.1282	-0.3720				
b1830	prc	TU-997	-		0.6561	0.7243	0.0661	0.0103				
b1831	yebJ	TU-997	-		0.5261	0.0574	-0.0980	-0.5505				
b1832	b1832	TU-998	-	S	0.0001	0.1513	-0.3524	-0.4698	4			
b1833	b1833	TU-999	+		0.3592	0.8810	-0.1048	-0.0822	5	YES	YES	IG1
b1834	b1834	TU-999	+		0.0029	0.9085	0.2998	0.3136	5			
b1835	yebU	TU-999	+	S	0.0000	0.0884	0.6165	0.4787	1			
b1836	b1836	TU-1000	+	S	0.0000	0.1441	-1.4844	-0.9778	1	YES	NO	IG1
b1837	b1837	TU-1000	+		0.9448	0.8947	-0.0073	0.0236	5	YES	NO	IG1
b1838	pphA	TU-1001	-		0.2229	0.9455	0.1018	0.1107	5	YES	YES	IG1
b1839	b1839	TU-1002	-	S	0.0005	0.0542	0.3186	0.1032	1	NO	NO	ORF
b1840	b1840	TU-1002	-		0.0690	0.1515	0.1639	-0.0048				
b1841	b1841	TU-1002	-		0.0480	0.0066	0.1563	-0.2017				
b1842	holE	TU-1003	+		0.0981	0.2601	0.2078	0.0298				
b1843	b1843	TU-1004	+		0.0766	0.4470	-0.1511	-0.2408				
b1844	b1844	TU-1004	+		0.6495	0.9539	-0.0505	-0.0586	5	NO	NO	ORF
b1845	ptrB	TU-1005	-		0.6760	0.3324	-0.0602	0.1363	5	YES	YES	IG1
b1846	yebE	TU-1006	-		0.0129	0.0708	0.3956	0.7114	5	NO	NO	ORF
b1847	yebF	TU-1007	-		0.0062	0.0255	-0.6453	-0.0864	5			
b1848	yebG	TU-1007	-		0.0180	0.1195	0.2501	0.0198	5	YES	NO	IG1
b1849	purT	TU-1008	+		0.4054	0.5315	0.0529	-0.0498				
b1850	eda	TU-1009	-	S	0.0002	0.6504	0.2853	0.2415	4			
b1851	edd	TU-1009	-		0.0159	0.4217	0.1957	0.2868				
b1852	zwf	TU-1010	-	S	0.0003	0.9135	-0.6893	-0.7136	4			

b1853	yebK	TU-1011	+				0.6085	0.0064	0.0461	0.3524				
b1854	pykA	TU-1011	+				0.0080	0.8703	-0.6816	-0.6425				
b1855	msbB	TU-1012	-				0.7017	0.1475	-0.0281	-0.1893				
b1856	yebA	TU-1013	-	S	S		0.0000	0.0000	0.7898	0.0000	4			
b1857	yebL	TU-1013	-	S	S		0.0000	0.0000	2.0775	-0.4175	4			
b1858	yebM	TU-1014	+				0.0189	0.0035	0.4194	-0.1742				
b1859	yebI	TU-1014	+	S			0.0002	0.0002	0.5093	-0.0276	4			
b1860	ruvB	TU-1015	-				0.0531	0.0747	-0.2229	0.0757	5			
b1861	ruvA	TU-1015	-				0.2574	0.3621	-0.1345	0.0041	5	YES	YES	IG1
b1862	yebB	TU-1016	+	S			0.0001	0.5299	0.5430	0.4671	1	YES	YES	IG1
b1863	ruvC	TU-1017	-				0.0040	0.0560	0.3475	0.0016				
b1864	yebC	TU-1017	-				0.7660	0.1367	0.0394	-0.2496				
b1865	ntpA	TU-1017	-	S			0.0016	0.1093	0.3585	0.1441	4			
b1866	aspS	TU-1017	-				0.2960	0.4820	0.1992	0.0535				
b1867	yecD	TU-1018	+				0.5819	0.0430	0.0500	-0.2299				
b1868	yecE	TU-1018	+	S			0.0015	0.1088	0.2976	0.1182	4			
b1869	yecN	TU-1018	+				0.0440	0.1583	0.4500	0.0723				
b1870	yecO	TU-1018	+				0.7383	0.1077	0.0483	-0.2217				
b1871	yecP	TU-1018	+				0.0048	0.0294	0.3230	0.0421	5	NO	NO	IG1
b1872	bisZ	TU-1019	-				0.0036	0.6148	0.3826	0.4536	5	NO	NO	IG2
b1873	yecK	TU-1019	-	S			0.0010	0.8545	0.5409	0.5689	1	YES	NO	IG1
b1874	cutC	TU-1020	-				0.8355	0.5375	-0.0075	-0.0732				
b1875	yecM	TU-1021	-	S			0.0001	0.1322	0.2970	0.1600	1	YES	YES	IG1
b1876	argS	TU-1022	+				0.0151	0.0126	0.2291	-0.0780	5	YES	YES	IG1
b1877	yecT	TU-1023	+				0.0025	0.0559	0.4497	0.1265				
b1878	flhE	TU-1024	-				0.0063	0.2775	0.2879	0.1640				
b1879	flhA	TU-1024	-				0.0037	0.7558	0.3303	0.2961	5	NO	YES	ORF
b1880	flhB	TU-1024	-				0.2114	0.7143	0.1183	0.0736				
b1881	cheZ	TU-1024	-				0.0345	0.4412	-0.3208	-0.6418				
b1882	cheY	TU-1024	-				0.8894	0.5551	0.0143	-0.1653				
b1883	cheB	TU-1024	-				0.9525	0.4799	0.0069	-0.2478				
b1884	cheR	TU-1024	-				0.5349	0.7289	-0.0551	-0.1416	5	NO	NO	ORF
b1885	tap	TU-1024	-				0.0925	0.5778	0.1166	-0.0353	5	NO	NO	ORF
b1886	tar	TU-1024	-				0.0976	0.4905	-0.4428	-0.9685	5	NO	NO	ORF
b1887	cheW	TU-1025	-				0.0614	0.6675	-0.6663	-0.9660	5			
b1888	cheA	TU-1025	-				0.1392	0.6571	-0.4903	-0.8204	5	NO	NO	ORF
b1889	motB	TU-1025	-				0.3578	0.5944	-0.1806	-0.4592	5			
b1890	motA	TU-1025	-				0.0364	0.5057	-0.3211	-0.7289	5	YES	YES	IG1
b1891	flhC	TU-1026	-				0.3597	0.5972	-0.1484	0.0199				
b1892	flhD	TU-1026	-				0.3359	0.5494	-0.1792	0.0339				
b1894	insA	TU-1027	-				0.2653	0.0155	0.2946	-0.5816				
b1895	yecG	TU-1028	+				0.2412	0.0020	-0.1154	0.3950				
b1896	otsA	TU-1029	-	S	S		0.0000	0.0001	-1.0450	-0.2751	1	YES	YES	ORF
b1897	otsB	TU-1029	-	S			0.0000	0.0214	-1.0177	-0.2913	1	YES	YES	IG1
b1898	araH	TU-1030	-				0.3341	0.0637	-0.1224	0.2155				
b1899	araH	TU-1030	-				0.0769	0.1577	-0.2888	0.0154				
b1900	araG	TU-1030	-	S			0.0006	0.3277	0.3095	0.4325	1	NO	NO	IG1
b1901	araF	TU-1030	-	S			0.0006	0.5860	0.3547	0.2995	4			
b1902	yecI	TU-1031	+				0.9229	0.9617	-0.0096	-0.0183				
b1903	b1903	TU-1031	+	S			0.0011	0.9896	0.3646	0.3662	4			
b1904	b1904	TU-1032	+				0.1271	0.5595	0.3548	0.1329	5	YES	YES	IG1
b1905	ftn	TU-1033	+				0.7186	0.6093	-0.1804	0.1002				
b1906	yecH	TU-1034	-	S	S		0.0000	0.0001	0.3409	-0.4183	4			
b1907	tyrP	TU-1035	+				0.7429	0.6049	0.0418	-0.0421				
b1908	yecA	TU-1036	-				0.0114	0.4471	0.3364	0.4495				
b1909	leuZ	TU-1037	-				0.1902	0.7368	0.2381	0.3377				
b1910	cysT	TU-1037	-				0.0198	0.2605	-0.6582	-1.0510				
b1911	glyW	TU-1037	-				0.5553	0.6558	0.1066	-0.0189	5	YES	YES	IG1
b1912	pgsA	TU-1037	-				0.8833	0.0328	-0.0096	-0.2119				
b1913	uvrC	TU-1037	-				0.9924	0.6077	-0.0008	0.0567				
b1914	uvrY	TU-1037	-				0.1436	0.6467	-0.1678	-0.1074				
b1915	yecF	TU-1038	+	S			0.0006	0.7569	0.2988	0.2588	1	YES	YES	IG1
b1916	sdiA	TU-1039	-				0.0050	0.0070	0.3076	-0.0683	5	YES	YES	IG1

b1917	yecC	TU-1040	-			0.2435	0.0084	0.1554	-0.2802				
b1918	yecS	TU-1040	-			0.1545	0.0065	0.1388	-0.2144				
b1919	yedO	TU-1040	-			0.1116	0.0021	0.1719	-0.2133	5	NO	NO	ORF
b1920	fliY	TU-1041	-			0.0187	0.0164	0.4258	-0.0457	5			
b1921	fliZ	TU-1041	-			0.0176	0.4785	-0.8490	-1.4911	5			
b1922	fliA	TU-1041	-			0.0253	0.7177	-0.8815	-1.1839	5	NO	YES	IG1
b1923	fliC	TU-1042	-			0.0197	0.6669	-1.6079	-2.1317	5	NO	YES	ORF
b1924	fliD	TU-1043	+			0.0506	0.4892	-0.8463	-1.5224	5	NO	NO	ORF
b1925	fliS	TU-1043	+			0.0961	0.5628	-0.2456	-0.5388				
b1926	fliT	TU-1043	+			0.6689	0.6323	-0.0435	-0.1675				
b1927	amyA	TU-1044	+			0.0037	0.1872	-0.6804	-0.2961	5	NO	NO	IG1
b1928	yedD	TU-1045	-	S		0.0003	0.8243	0.5333	0.5590	1	YES	YES	IG1
b1929	yedE	TU-1046	+			0.0894	0.8014	0.7667	0.9451	5	YES	YES	IG1
b1930	yedF	TU-1046	+			0.1099	0.7944	0.5889	0.7487				
b1931	yedK	TU-1047	+			0.6864	0.1176	-0.0471	0.2687				
b1932	yedL	TU-1048	+			0.1643	0.5168	-0.2861	-0.0278				
b1933	b1933	TU-1049	-			0.0124	0.8544	0.3035	0.2702				
b1934	yedN	TU-1049	-			0.0444	0.7999	0.3363	0.3830				
b1935	yedM	TU-1049	-			0.5003	0.5975	0.1259	-0.0495				
b1936	b1936	TU-1050	+			0.6529	0.6252	-0.0553	0.0355	5	NO	NO	ORF
b1937	fliE	TU-1051	-			0.1637	0.3000	-0.1468	0.1320				
b1938	fliF	TU-1052	+			0.0246	0.0653	-0.2302	0.1236				
b1939	fliG	TU-1052	+			0.3427	0.5612	0.1317	-0.0441				
b1940	fliH	TU-1052	+			0.9415	0.6353	0.0113	-0.1242				
b1941	fliI	TU-1052	+			0.2071	0.5546	0.2090	0.0545				
b1942	fliJ	TU-1052	+			0.8443	0.5752	-0.0260	-0.1567				
b1943	fliK	TU-1052	+			0.7386	0.5860	0.0583	-0.1010				
b1944	fliL	TU-1053	+			0.2559	0.7947	-0.4334	-0.6188	5	NO	NO	
b1945	fliM	TU-1053	+			0.4262	0.5085	-0.2483	-0.6359	5			
b1946	fliN	TU-1053	+			0.8592	0.7779	-0.0442	-0.1880	5	NO	NO	
b1947	fliO	TU-1053	+			0.7124	0.4140	0.0666	-0.2565	5			
b1948	fliP	TU-1053	+			0.1438	0.5268	0.1887	0.0466	5			
b1949	fliQ	TU-1053	+			0.8053	0.5883	-0.0398	-0.2219	5			
b1950	fliR	TU-1053	+			0.1441	0.6983	0.2531	0.1575	5	NO	NO	
b1951	rcsA	TU-1054	+			0.0063	0.0447	0.3107	0.0188				
b1952	dsrB	TU-1055	-			0.1724	0.2474	-0.1375	0.0880				
b1953	b1953	TU-1056	+			0.0109	0.2292	-0.6009	-0.1044				
b1954	dsrA	TU-1057	-			0.4892	0.2312	-0.1049	0.3666				
b1955	b1955	TU-1058	+			0.5166	0.1565	-0.0994	0.2501				
b1956	b1956	TU-1059	-			0.4627	0.8663	0.0467	0.0255	5	YES	YES	
b1957	b1957	TU-1060	-			0.5448	0.5819	-0.1020	0.0738	5	YES	NO	
b1958	yedI	TU-1060	-			0.3454	0.9095	-0.1290	-0.1122	5	YES	YES	
b1959	yedA	TU-1061	+			0.0244	0.6093	0.4239	0.5372	5	YES	YES	
b1960	vsr	TU-1062	-			0.0341	0.8188	0.1876	0.1634				
b1961	dcm	TU-1062	-			0.1770	0.8503	0.1198	0.0955				
b1962	yedJ	TU-1063	-			0.0226	0.4791	-0.2051	-0.0981	5	NO	NO	
b1963	b1963	TU-1063	-	S		0.0016	0.7052	-0.4887	-0.5861	4			
b1964	b1964	TU-1064	+			0.6246	0.6634	0.0655	0.1593				
b1965	b1965	TU-1064	+			0.5014	0.8591	0.1071	0.0683				
b1966	b1966	TU-1064	+			0.0623	0.4974	0.1904	0.2831				
b1967	yedU	TU-1065	+	S		0.0000	0.1236	-0.9792	-0.6625	1	YES	NO	
b1968	yedV	TU-1066	-			0.0093	0.1262	-0.6368	-1.2717				
b1969	yedW	TU-1066	-	S		0.0007	0.1052	-0.5262	-0.9938	1	NO	NO	ORF
b1970	b1970	TU-1067	+		S	0.0080	0.0000	0.4516	-3.9105				
b1971	b1971	TU-1068	+			0.0435	0.0518	-0.1579	-1.5784				
b1972	b1972	TU-1068	+	S		0.0007	0.0756	-0.4038	-2.0479	4			
b1973	b1973	TU-1069	+	S	S	0.0000	0.0000	3.7538	-1.4227	4			
b1974	yodB	TU-1070	+			0.2513	0.8299	0.1653	0.1184	5	NO	NO	ORF
b1975	serU	TU-1071	-			0.2155	0.0165	0.1776	0.6151				
b1976	b1976	TU-1072	+			0.1025	0.9350	-0.3546	-0.3728				
b1977	asnT	TU-1072	+			0.1086	0.4856	0.3006	0.5267	5	YES	YES	
b1978	b1978	TU-1073	+	S		0.0015	0.5220	0.3453	0.4272	4			
b1979	b1979	TU-1074	-	S		0.0003	0.6811	0.5768	0.5091	4			

b1980	b1980	TU-1074	-		0.0133	0.6297	0.3607	0.2883				
b1981	shiA	TU-1075	+		0.0589	0.8721	-0.3869	-0.4236	5	YES	YES	
b1982	amn	TU-1076	+		0.2918	0.5239	-0.1718	-0.0552				
b1983	b1983	TU-1077	+		0.1129	0.5600	0.4377	0.2711	5	YES	YES	
b1984	asnW	TU-1078	-		0.0563	0.4849	0.3554	0.5877	5	YES	YES	
b1985	yeeO	TU-1079	-		0.0279	0.4621	0.2995	0.1884				
b1986	asnU	TU-1080	+		0.0875	0.2300	0.2978	0.6742	5	YES	YES	
b1987	cbl	TU-1081	-		0.0039	0.0070	0.9332	0.0986				
b1988	nac	TU-1082	-		0.8563	0.6348	0.0330	-0.1676				
b1989	asnV	TU-1083	+		0.3153	0.1739	0.1779	0.5561	5	YES	YES	
b1990	erfK	TU-1084	-	S	0.0014	0.1516	-0.2990	-0.0151	4			
b1991	cobT	TU-1085	-		0.1436	0.4776	0.1559	0.0701	5			
b1992	cobS	TU-1085	-		0.0112	0.8797	0.3214	0.3413	5			
b1993	cobU	TU-1085	-		0.0612	0.9493	0.1754	0.1686	5	YES	YES	
b1995	b1995	TU-1086	+		0.0223	0.7515	0.3706	0.3165				
b1998	b1998	TU-1087	+		0.7947	0.7964	-0.0348	-0.0903				
b1999	yeeP	TU-1087	+	S	0.0008	0.7491	0.5722	0.6230	4			
b2000	flu	TU-1088	+		0.0148	0.9715	-0.8114	-0.7939				
b2001	b2001	TU-1089	+		0.6370	0.8293	-0.1069	-0.0263	5	NO	YES	ORF
b2002	yeeS	TU-1089	+		0.0156	0.6947	0.3817	0.3056				
b2003	yeeT	TU-1089	+		0.0290	0.6625	0.3961	0.4808				
b2004	yeeU	TU-1090	+		0.0219	0.8130	0.3624	0.4032				
b2005	yeeV	TU-1091	+		0.0142	0.9838	0.3716	0.3683				
b2006	yeeW	TU-1091	+		0.0100	0.1345	0.3760	0.6650				
b2007	yeeX	TU-1092	-		0.1012	0.8642	0.1568	0.1829				
b2008	yeeA	TU-1092	-	S	0.0014	0.6726	-0.4056	-0.3401	4			
b2009	sbmC	TU-1092	-		0.0052	0.3811	-0.5653	-0.3090				
b2010	dacD	TU-1093	-		0.6280	0.3909	0.0489	0.1607	5	YES	YES	
b2011	sbcB	TU-1094	+		0.4183	0.4916	-0.0781	0.0012	5	YES	YES	
b2012	yeeD	TU-1095	-		0.2936	0.1072	-0.1968	-0.6749				
b2013	yeeE	TU-1095	-		0.3316	0.1615	-0.2400	-0.6724				
b2014	yeeF	TU-1096	-		0.7118	0.6385	0.0959	-0.0637	5	YES	YES	
b2015	yeeY	TU-1097	-		0.7820	0.4072	0.0227	0.1394	5			
b2016	b2016	TU-1097	-	S	0.0006	0.1752	-0.5066	-0.3259	1			
b2017	yefM	TU-1097	-		0.8309	0.0885	0.0143	0.2275	5	YES	YES	
b2018	hisL	TU-1098	+		0.0464	0.5960	-0.6690	-0.4484				
b2019	hisG	TU-1099	+		0.9907	0.4049	0.0019	-0.2134				
b2020	hisD	TU-1099	+		0.2456	0.0292	-0.2998	-1.1029				
b2021	hisC	TU-1099	+		0.8226	0.0327	-0.0324	-0.7423				
b2022	hisB	TU-1099	+		0.5584	0.0315	0.0913	-0.5716				
b2023	hisH	TU-1099	+		0.0398	0.0066	0.2464	-0.4564				
b2024	hisA	TU-1099	+		0.5414	0.0306	0.0705	-0.4499				
b2025	hisF	TU-1099	+		0.6560	0.3633	0.1188	-0.1946				
b2026	hisI	TU-1099	+		0.5697	0.0768	-0.0750	-0.5686				
b2027	wzzB	TU-1100	-		0.6429	0.6849	-0.0674	-0.1526				
b2028	ugd	TU-1101	-	S	0.0012	0.5994	0.2475	0.1891	1	NO	NO	ORF
b2029	gnd	TU-1102	-		0.7865	0.0983	-0.0225	-0.1846	5	YES	YES	
b2031	yefJ	TU-1103	-		0.9716	0.7137	0.0053	-0.0658				
b2032	wbbK	TU-1103	-	S	0.0001	0.9898	0.6227	0.6211	4			
b2033	wbbJ	TU-1103	-		0.1008	0.8698	0.2578	0.2312				
b2034	wbbI	TU-1103	-	S	0.0005	0.7304	0.6069	0.6644	4			
b2035	wbbH	TU-1103	-		0.1933	0.5937	0.2304	0.1260				
b2036	glf	TU-1103	-		0.3753	0.8948	0.2112	0.2490				
b2037	rfbX	TU-1104	-		0.4658	0.5907	-0.1097	-0.2052				
b2038	rfbC	TU-1104	-		0.1319	0.0889	0.1829	-0.0696	5	YES	NO	ORF
b2039	rfbA	TU-1104	-		0.0083	0.6884	0.3953	0.3270				
b2040	rfbD	TU-1104	-		0.0891	0.1808	-0.3543	-0.6720				
b2041	rfbB	TU-1104	-		0.0159	0.9776	0.3106	0.3066	5	NO	NO	ORF
b2042	galF	TU-1105	-		0.0167	0.8419	-0.3887	-0.4226	5	YES	YES	
b2043	wcaM	TU-1106	-		0.1486	0.1554	0.1724	0.4584				
b2044	wcaL	TU-1106	-		0.0163	0.9568	0.3828	0.3924				
b2045	wcaK	TU-1106	-		0.0074	0.8069	0.3138	0.3476				
b2046	wzxC	TU-1106	-		0.0891	0.6857	0.2154	0.2812				

b2047	wcaJ	TU-1106	-		0.0057	0.4738	0.3881	0.5029				
b2048	cpsG	TU-1106	-		0.0580	0.1849	0.3031	0.5506				
b2049	cpsB	TU-1107	-		0.0028	0.1897	0.5494	0.7889				
b2050	wcaI	TU-1107	-		0.0280	0.1888	0.2832	0.4842	5	NO	NO	ORF
b2051	wcaH	TU-1107	-		0.0361	0.2840	0.2757	0.4582				
b2052	wcaG	TU-1107	-		0.0872	0.0354	0.1848	0.5012				
b2053	gmd	TU-1107	-		0.0401	0.1522	0.2349	0.4501				
b2054	wcaF	TU-1107	-		0.0212	0.2839	0.3316	0.5417				
b2055	wcaE	TU-1107	-		0.7815	0.2453	0.0463	0.3199				
b2056	wcaD	TU-1107	-		0.3570	0.5976	0.1956	0.3389	5	NO	NO	ORF
b2057	wcaC	TU-1107	-		0.1088	0.3632	0.2375	0.4023				
b2058	wcaB	TU-1107	-	S	0.0003	0.9666	0.4484	0.4547	4			
b2059	wcaA	TU-1107	-		0.0026	0.5752	0.3572	0.2805				
b2060	b2060	TU-1107	-	S	0.0008	0.4135	0.5202	0.3988	1	NO	NO	
b2061	wzb	TU-1107	-	S	0.0000	0.9278	0.6205	0.6304	4			
b2062	wza	TU-1107	-	S	0.0001	0.2250	0.6329	0.4712	4			
b2063	yegH	TU-1108	+		0.0032	0.1806	0.3966	0.1945	3	NO	NO	IG2
b2064	asmA	TU-1109	-	S	0.0003	0.9846	0.3901	0.3926	4	NO	NO	IG2
b2065	dcd	TU-1110	-		0.0038	0.0825	0.3297	0.0816				
b2066	udk	TU-1110	-		0.7194	0.0153	0.0436	-0.2906				
b2067	yegE	TU-1111	+		0.3743	0.7031	0.0552	0.0952	5	NO	NO	ORF
b2068	alkA	TU-1112	-		0.0225	0.4714	0.2314	0.3166	5	NO	NO	ORF
b2069	yegD	TU-1113	+	S	0.0001	0.3748	0.4155	0.3391	4			
b2070	b2070	TU-1114	-	S	0.0006	0.5004	0.4414	0.3599	4			
b2071	b2071	TU-1115	+	S	0.0008	0.5824	0.3992	0.3221	4			
b2072	b2072	TU-1116	-	S	0.0005	0.7139	0.6013	0.6559	1	NO	NO	ORF
b2073	b2073	TU-1116	-	S	0.0008	0.4834	0.5888	0.7108	4			
b2074	b2074	TU-1117	+		0.1775	0.1326	0.0941	-0.1223				
b2075	yegN	TU-1117	+	S	0.0012	0.6501	0.2743	0.3187	1	NO	NO	ORF
b2076	yegO	TU-1117	+		0.0022	0.7449	0.2934	0.2620				
b2077	yegB	TU-1117	+		0.6800	0.2843	0.0402	0.2003				
b2078	baeS	TU-1117	+		0.1596	0.9516	0.1099	0.1026				
b2079	baeR	TU-1117	+		0.5174	0.2953	0.0410	-0.0851				
b2080	b2080	TU-1118	+		0.0606	0.2643	-0.4395	0.0863	5	YES	NO	
b2081	yegQ	TU-1118	+		0.3136	0.7681	0.0830	0.1182	5			
b2082	ogrK	TU-1119	-		0.0209	0.7423	0.1677	0.1167				
b2083	b2083	TU-1119	-		0.7543	0.6716	0.0546	0.1460				
b2084	b2084	TU-1119	-		0.1739	0.5106	0.2246	0.3512				
b2085	b2085	TU-1119	-		0.3539	0.9560	0.1862	0.1995				
b2086	b2086	TU-1120	+	S	0.0001	0.2863	-0.8613	-0.4454	4			
b2087	gatR	TU-1121	-		0.0131	0.6284	0.3633	0.4519				
b2090	gatR	TU-1122	-		0.0098	0.1246	-0.4140	-0.1107				
b2091	gatD	TU-1122	-	S	0.0014	0.0787	-0.5698	-0.0698	4			
b2092	gatC	TU-1122	-	S	0.0000	0.0007	-0.8645	0.0169	4			
b2093	gatB	TU-1122	-	S	0.0004	0.0009	-0.7278	0.1325	4			
b2094	gatA	TU-1122	-	S	0.0013	0.0080	-1.0202	-0.2200	4			
b2095	gatZ	TU-1122	-		0.0028	0.0080	-0.6556	-0.0430				
b2096	gatY	TU-1122	-		0.0989	0.9035	-0.1118	-0.0978				
b2097	b2097	TU-1123	-		0.0064	0.7437	-0.3293	-0.2405	5	YES	NO	
b2098	yegT	TU-1124	+	S	0.0014	0.6578	0.3848	0.3292	1	YES	NO	
b2099	b2099	TU-1124	+	S	0.0020	0.0563	0.2862	0.1066	1			
b2100	b2100	TU-1124	+		0.0028	0.8747	0.3671	0.3457	5			
b2101	yegW	TU-1125	-		0.0099	0.1034	0.2383	0.0533				
b2102	yegX	TU-1125	-		0.0135	0.2097	0.3267	0.1569	5	YES	YES	ORF
b2103	thiD	TU-1125	-	S	0.0003	0.0700	0.4680	0.2540	4			
b2104	thiM	TU-1125	-	S	0.0006	0.7390	0.2843	0.2570	4			
b2105	yohL	TU-1126	-		0.0234	0.6283	0.6050	0.7262				
b2106	yohM	TU-1127	+		0.0115	0.4456	0.9783	0.7147				
b2107	b2107	TU-1127	+		0.0099	0.0780	0.2581	-0.0242	5	YES	NO	ORF
b2108	yehA	TU-1128	-		0.0738	0.3918	0.1939	0.0550				
b2109	yehB	TU-1128	-		0.0145	0.6272	0.4183	0.3279	5	NO	NO	ORF
b2110	yehC	TU-1128	-		0.0039	0.0391	0.5449	0.1163				
b2111	yehD	TU-1128	-		0.0033	0.3165	0.7388	0.5041				

b2112	yehE	TU-1129	-	S	0.0000	0.6690	-1.0295	-1.1278	4			
b2113	mrp	TU-1130	-		0.0368	0.0495	-0.2577	-0.5629	5	NO	NO	ORF
b2114	metG	TU-1131	+	S	0.0001	0.2969	0.4578	0.3190	4			
b2115	molR	TU-1132	+		0.2218	0.4030	0.1855	0.3611				
b2116	molR	TU-1133	+		0.0734	0.3690	0.2109	0.3462				
b2117	molR	TU-1133	+		0.0146	0.1165	0.3797	0.6646				
b2118	yehI	TU-1133	+		0.0323	0.9696	0.3244	0.3170				
b2119	yehL	TU-1134	+		0.0068	0.8606	0.4057	0.4339	5	YES	YES	
b2120	yehM	TU-1134	+		0.9871	0.3699	-0.0012	0.0961	5			
b2121	yehP	TU-1134	+		0.1616	0.5918	0.1809	0.2745	5			
b2122	yehQ	TU-1134	+		0.0395	0.2972	0.2224	0.3580	5	NO	NO	ORF
b2123	yehR	TU-1135	+		0.0419	0.5997	0.2672	0.3601	5	NO	NO	ORF
b2124	yehS	TU-1136	-		0.3727	0.4971	-0.1501	-0.0133	5			
b2125	yehT	TU-1136	-		0.3959	0.0545	-0.0756	0.1878	5			
b2126	yehU	TU-1136	-		0.3270	0.2199	-0.1099	0.0671	5	YES	YES	
b2127	yehV	TU-1137	+	S	0.0000	0.0649	-0.7530	-0.2840	1	YES	YES	
b2128	yehW	TU-1138	-		0.7352	0.0049	-0.0415	0.4649				
b2129	yehX	TU-1138	-		0.0351	0.0280	-0.3623	0.0830				
b2130	yehY	TU-1138	-		0.7918	0.0183	-0.0261	0.2985				
b2131	yehZ	TU-1138	-		0.4463	0.3541	0.0532	0.1873				
b2132	bglX	TU-1139	-		0.0059	0.4960	0.3947	0.2981	5	YES	YES	
b2133	dld	TU-1140	+		0.9998	0.0052	0.0000	-0.4956	5	YES	YES	
b2134	pbpG	TU-1141	-		0.7748	0.0913	-0.0277	-0.2678				
b2135	yohC	TU-1142	-		0.0349	0.9589	0.1996	0.1910	5	YES	NO	
b2136	yohD	TU-1143	+		0.5112	0.7724	-0.0625	-0.0277	5	YES	NO	
b2137	yohF	TU-1144	-		0.8618	0.4889	0.0137	0.1243				
b2138	yohG	TU-1144	-	S	0.0001	0.6580	0.4383	0.3912	4			
b2139	yohH	TU-1144	-	S	0.0005	0.8548	0.4867	0.5097	4			
b2140	yohI	TU-1145	-	S	0.0000	0.0615	0.6125	0.4482	4			
b2141	yohJ	TU-1146	+	S	0.0003	0.3412	0.5125	0.1817	4			
b2142	yohK	TU-1146	+		0.0442	0.7384	0.1658	0.0822				
b2143	cdd	TU-1147	+		0.3758	0.4451	0.0649	-0.0711				
b2144	sanA	TU-1148	+		0.7812	0.6110	0.0157	-0.0281				
b2145	b2145	TU-1148	+		0.0152	0.0181	-0.4493	0.0272	5	NO	NO	ORF
b2146	b2146	TU-1149	+		0.0246	0.7611	0.2718	0.2195				
b2147	yeiA	TU-1149	+		0.0160	0.9863	0.3157	0.3182				
b2148	mglC	TU-1150	-	S	0.0006	0.9135	0.3740	0.3935	4			
b2149	mglA	TU-1150	-		0.2795	0.0060	0.1174	0.7117				
b2150	mglB	TU-1150	-	S	0.0001	0.1162	0.4062	0.6367	4			
b2151	galS	TU-1151	-		0.0381	0.5948	0.2850	0.3654	5	NO	NO	
b2152	yeiB	TU-1152	-		0.9283	0.5410	-0.0111	0.0936	5			
b2153	folE	TU-1152	-		0.5769	0.0137	0.0873	-0.3803	5	YES	YES	
b2154	yeiG	TU-1153	+	S	0.0012	0.0136	-0.4630	-0.0206	4			
b2155	cirA	TU-1154	-		0.3661	0.5829	0.2757	0.4535				
b2156	lysP	TU-1155	-		0.8001	0.3106	0.0404	0.2834				
b2157	yeiE	TU-1156	-		0.2831	0.6471	-0.1048	-0.0561				
b2158	yeiH	TU-1157	+		0.7610	0.3564	0.0226	0.1343				
b2159	nfo	TU-1158	+		0.0052	0.3887	-0.3362	-0.2356				
b2160	yeiI	TU-1159	+		0.2181	0.6661	-0.1664	-0.0967				
b2161	yeiJ	TU-1160	-		0.3949	0.1905	0.0851	0.2957				
b2162	yeiK	TU-1161	-		0.0023	0.0650	0.4626	0.8078				
b2163	yeiL	TU-1162	+		0.8874	0.1645	0.0191	0.2981				
b2164	yeiM	TU-1163	-		0.3167	0.0839	0.1097	0.3738				
b2165	yeiN	TU-1164	-		0.7253	0.2979	0.0540	0.2636				
b2166	yeiC	TU-1164	-		0.0806	0.0089	0.2709	0.8127				
b2167	fruA	TU-1165	-		0.0247	0.2490	0.2330	0.0812				
b2168	fruK	TU-1165	-		0.0129	0.9488	0.2945	0.3034				
b2169	fruB	TU-1165	-		0.1573	0.2638	0.1832	0.0038				
b2170	yeiO	TU-1166	+		0.0023	0.8426	0.4572	0.4259	5	NO	NO	ORF
b2171	yeiP	TU-1166	+	S	0.0017	0.3234	0.5009	0.3292	4			
b2172	yeiQ	TU-1167	+		0.0052	0.8570	0.3071	0.3274				
b2173	yeiR	TU-1168	+	S	0.0006	0.0878	0.3889	0.5977	4			
b2174	b2174	TU-1168	+		0.3335	0.4833	-0.2001	-0.3769				

b2175	spr	TU-1169	+			0.0028	0.6147	-0.6903	-0.5231	5	YES	YES	
b2176	rtn	TU-1170	+			0.0166	0.9364	0.2128	0.2047				
b2177	yejA	TU-1171	+			0.0206	0.5651	-0.0967	-0.1501				
b2178	yejB	TU-1171	+			0.1069	0.1225	0.1192	-0.0326				
b2179	yejE	TU-1171	+			0.7499	0.3285	0.0161	-0.0643				
b2180	yejF	TU-1171	+			0.3474	0.9454	-0.0932	-0.0845				
b2181	yejG	TU-1172	-			0.2258	0.0027	-0.1434	0.3216	5	YES	YES	
b2182	bcr	TU-1173	-	S		0.2120	0.0001	0.0910	-0.3441				
b2183	rsuA	TU-1173	-	S		0.8322	0.0001	0.0151	-0.4372				
b2184	yejH	TU-1174	+			0.0377	0.7049	0.2687	0.1558				
b2185	rplY	TU-1174	+			0.4807	0.9860	-0.0630	-0.0608				
b2186	yejK	TU-1175	-			0.0023	0.0487	0.3151	0.0569				
b2187	yejL	TU-1176	+			0.0108	0.2505	-0.6784	-0.9922				
b2188	yejM	TU-1176	+			0.8185	0.5519	-0.0265	-0.1353				
b2189	proL	TU-1176	+			0.4293	0.9139	0.1747	0.1359	5	YES	YES	
b2190	yejO	TU-1177	-			0.6642	0.5933	0.0626	0.1802	5	NO	YES	
b2192	trs5	TU-1178	-			0.1870	0.1829	0.0641	0.1622				
b2193	narP	TU-1179	+			0.9350	0.0122	0.0038	0.3025				
b2194	ccmH	TU-1180	-	S		0.0005	0.3092	0.4003	0.5038	4			
b2195	dsbE	TU-1180	-			0.0081	0.3105	0.2162	0.3052				
b2196	ccmF	TU-1180	-			0.0661	0.3600	0.1961	0.3042				
b2197	ccmE	TU-1180	-			0.1721	0.2445	0.0960	-0.0487				
b2198	ccmD	TU-1180	-			0.6010	0.6262	0.0386	-0.0101	5	NO	NO	ORF
b2199	ccmC	TU-1180	-			0.2596	0.7858	0.1225	0.1574				
b2200	ccmB	TU-1180	-			0.5831	0.0061	-0.0378	0.3086				
b2201	ccmA	TU-1180	-			0.2762	0.1752	0.0855	0.2479				
b2202	napC	TU-1180	-			0.3402	0.0155	-0.0949	0.2452				
b2203	napB	TU-1180	-			0.6554	0.1772	-0.0441	0.1362				
b2204	napH	TU-1180	-			0.3581	0.0981	0.1017	0.3407				
b2205	napG	TU-1180	-			0.4029	0.0171	0.0909	0.4652				
b2206	napA	TU-1180	-	S		0.0004	0.2167	0.4097	0.2571	4			
b2207	napD	TU-1180	-			0.0727	0.3796	0.2215	0.0966				
b2208	napF	TU-1180	-			0.3769	0.0621	0.1315	-0.2280				
b2209	eco	TU-1181	+			0.0422	0.9006	0.2534	0.2891				
b2210	yojH	TU-1182	-	S		0.0004	0.0398	0.8931	0.4736	4			
b2211	yojI	TU-1183	-	S		0.0007	0.4877	0.6731	0.5296	4			
b2212	alkB	TU-1184	-			0.1511	0.6656	0.1462	0.0922				
b2213	ada	TU-1184	-	S		0.0015	0.9654	0.2891	0.2933	4			
b2214	yojL	TU-1185	-			0.0035	0.1532	0.3350	0.1731				
b2215	ompC	TU-1186	-			0.0250	0.1591	-0.2784	-0.4741				
b2216	yojN	TU-1187	+			0.0338	0.3875	-0.2133	-0.3127	5	YES	YES	
b2217	rcsB	TU-1188	+			0.0156	0.4803	-0.1396	-0.2031	5	YES	YES	
b2218	rcsC	TU-1189	-			0.1102	0.5547	-0.0756	-0.1415	5	YES	NO	
b2219	atoS	TU-1190	+	S		0.0012	0.0007	0.2339	-0.0311	1	YES	NO	
b2220	atoC	TU-1190	+			0.0663	0.7733	0.2228	0.1747	5			
b2221	atoD	TU-1191	+			0.0030	0.6811	0.4776	0.4131				
b2222	atoA	TU-1191	+			0.0043	0.3919	0.3995	0.2744				
b2223	atoE	TU-1191	+	S		0.0014	0.4215	0.6155	0.7593	4			
b2224	atoB	TU-1192	+			0.0049	0.9057	0.4830	0.5068				
b2225	b2225	TU-1193	-			0.0356	0.3861	0.3767	0.5554				
b2226	b2226	TU-1193	-			0.0631	0.6775	0.2800	0.3476				
b2227	b2227	TU-1193	-			0.0311	0.1695	0.3255	0.5485				
b2228	b2228	TU-1193	-			0.1713	0.6757	0.2037	0.2805				
b2229	b2229	TU-1193	-			0.1240	0.5891	0.2828	0.3994				
b2230	yfaA	TU-1193	-			0.0853	0.3216	0.3013	0.5172				
b2231	gyrA	TU-1194	-			0.2186	0.8446	0.1381	0.1144				
b2232	ubiG	TU-1195	+			0.0316	0.8252	0.1551	0.1378				
b2233	yfaL	TU-1196	-			0.4537	0.4137	0.0987	0.2433	5	YES	YES	
b2234	nrdA	TU-1197	+			0.0061	0.0042	-0.2406	0.0753	5	YES	YES	
b2235	nrdB	TU-1197	+	S		0.0010	0.0147	-0.5398	-0.1548	1			
b2236	yfaE	TU-1197	+			0.0023	0.0032	-0.2413	0.1722	5			
b2237	inaA	TU-1198	-			0.3302	0.3785	-0.1406	0.0397				
b2238	yfaH	TU-1199	+			0.1428	0.7041	0.2210	0.3121				

b2239	glpQ	TU-1200	-			0.5321	0.4356	-0.0715	0.0999	5			
b2240	glpT	TU-1200	-			0.0980	0.1578	-0.1886	0.0597	5	NO	NO	
b2241	glpA	TU-1201	+			0.0749	0.0889	0.2538	0.5701	5	NO	NO	
b2242	glpB	TU-1201	+			0.0257	0.4748	0.2599	0.1531	5	NO	NO	
b2243	glpC	TU-1201	+	S		0.0013	0.8333	0.5321	0.5004	1			
b2244	yfaD	TU-1202	+			0.0733	0.6636	0.3106	0.3890				
b2245	b2245	TU-1203	-	S		0.0018	0.7126	0.4184	0.3691	1			
b2246	b2246	TU-1203	-	S		0.0001	0.3681	0.5804	0.4589	1			
b2247	b2247	TU-1203	-	S		0.0000	0.7230	0.7089	0.7541	1			
b2248	b2248	TU-1203	-	S		0.0002	0.9392	0.6074	0.6177	1	NO	NO	
b2249	b2249	TU-1204	-	S		0.0011	0.2178	0.3529	0.2098	1	NO	YES	
b2250	b2250	TU-1205	-			0.0101	0.3909	0.2803	0.3704	5	YES	YES	
b2251	yfaO	TU-1206	+	S		0.0019	0.8216	0.4728	0.5097	1	YES	YES	
b2252	ais	TU-1207	-	S		0.0005	0.5394	0.4475	0.3669	4			
b2253	b2253	TU-1208	+	S		0.0004	0.1494	-0.4392	-0.1947	4			
b2254	b2254	TU-1208	+	S		0.0001	0.0990	-0.3805	-0.1202	4			
b2255	b2255	TU-1208	+			0.2800	0.5410	-0.1233	-0.0023	5	NO	NO	
b2256	b2256	TU-1208	+			0.0258	0.6895	0.3647	0.2955	5	NO	NO	
b2257	b2257	TU-1208	+			0.6924	0.7144	0.0640	0.1514	5	NO	NO	ORF
b2258	b2258	TU-1208	+			0.0727	0.4302	0.2620	0.1367				
b2259	pmrD	TU-1209	-			0.5925	0.4594	-0.0578	-0.2411	5	YES	YES	
b2260	menE	TU-1210	-			0.0396	0.7359	0.2241	0.2657				
b2261	menC	TU-1210	-			0.2340	0.2560	0.1039	-0.0118				
b2262	menB	TU-1210	-			0.0445	0.7300	-0.1770	-0.1422				
b2263	yfbB	TU-1210	-			0.5547	0.6707	0.0501	-0.0033				
b2264	menD	TU-1210	-			0.7686	0.7749	-0.0270	0.0079				
b2265	menF	TU-1210	-			0.8798	0.3919	-0.0146	0.1090				
b2266	elaB	TU-1211	-	S		0.0009	0.1176	-0.9133	-0.3519	4			
b2267	elaA	TU-1211	-			0.8623	0.2205	0.0251	0.2558				
b2268	elaC	TU-1212	+			0.1844	0.9829	0.1242	0.1217				
b2269	elaD	TU-1213	+			0.2832	0.8367	0.1087	0.0703	3	NO	NO	IG2
b2270	yfbK	TU-1214	-			0.0164	0.4360	0.3384	0.4956	3	NO	NO	IG2
b2271	yfbL	TU-1215	+			0.0198	0.9044	0.2468	0.2270				
b2272	yfbM	TU-1216	+			0.0116	0.4685	0.3384	0.2097				
b2273	yfbN	TU-1217	-			0.3357	0.3510	0.1652	0.3897				
b2274	b2274	TU-1218	+			0.8201	0.1691	-0.0322	0.2623				
b2275	b2275	TU-1218	+			0.9336	0.2193	0.0089	0.2906	3	NO	NO	IG2
b2276	nuoN	TU-1219	-			0.0045	0.3875	-0.7331	-0.4467	5	NO	NO	IG2
b2277	nuoM	TU-1219	-			0.0118	0.6722	-0.8049	-0.6670	5			
b2278	nuoL	TU-1219	-			0.1138	0.1968	-0.3357	-0.6894	5			
b2279	nuoK	TU-1219	-			0.2580	0.2402	-0.3037	-0.6960	5			
b2280	nuoJ	TU-1219	-			0.2028	0.5637	-0.2838	-0.4285	5			
b2281	nuoI	TU-1219	-			0.6800	0.4180	-0.0838	-0.3189	5			
b2282	nuoH	TU-1219	-			0.6065	0.9006	-0.0916	-0.0582	5			
b2283	nuoG	TU-1219	-			0.0983	0.4786	-0.3054	-0.4775	5	NO	NO	ORF
b2284	nuoF	TU-1219	-			0.3377	0.6869	-0.1182	-0.1862	5			
b2285	nuoE	TU-1219	-			0.0754	0.1217	-0.1611	-0.3446	5			
b2286	nuoC	TU-1219	-			0.9268	0.3414	0.0132	-0.1839	5			
b2287	nuoB	TU-1219	-			0.8844	0.1186	-0.0148	-0.2617	5			
b2288	nuoA	TU-1219	-			0.0799	0.4134	-0.1858	-0.0578	5	YES	YES	
b2289	lrhA	TU-1220	-			0.2601	0.1951	0.1134	-0.1501				
b2290	b2290	TU-1221	+			0.2033	0.0389	0.1408	-0.2852				
b2291	b2291	TU-1221	+			0.0773	0.4935	0.1317	0.0686				
b2292	yfbS	TU-1222	-			0.4716	0.4622	0.0889	-0.0441				
b2293	yfbT	TU-1223	-	S		0.0011	0.0017	0.2497	-0.1155	1			
b2294	b2294	TU-1223	-			0.0030	0.0263	0.2977	0.0296	5			
b2295	b2295	TU-1223	-			0.0477	0.0074	0.2874	-0.2185	5	YES	YES	
b2296	ackA	TU-1224	+	S	S	0.0000	0.0000	0.7591	0.1669	1	YES	YES	
b2297	pta	TU-1225	+		S	0.0316	0.0001	0.1667	-0.3655				
b2298	yfcC	TU-1226	+			0.1294	0.1219	0.2291	-0.1130	5	NO	NO	ORF
b2299	b2299	TU-1227	-			0.0408	0.3535	0.1647	0.0691	5			
b2300	yfcE	TU-1227	-			0.0781	0.2147	0.1176	-0.0096	5			
b2301	yfcF	TU-1227	-			0.4179	0.3355	-0.1006	0.0735	5	NO	NO	

b2302	yfcG	TU-1228	+	S	0.0005	0.3496	-0.6137	-0.3735	1	NO	NO	
b2303	folX	TU-1228	+		0.9574	0.0709	0.0029	-0.2116	5	YES	NO	
b2304	b2304	TU-1228	+		0.0103	0.2651	-0.2095	-0.0956	5			
b2305	yfcI	TU-1229	-		0.0044	0.2713	0.3386	0.5119				
b2306	hisP	TU-1230	-		0.8073	0.0877	0.0242	0.3427				
b2307	hisM	TU-1230	-		0.3098	0.1850	0.1687	0.4275				
b2308	hisQ	TU-1230	-		0.1904	0.9875	-0.2612	-0.2646				
b2309	hisJ	TU-1230	-		0.0120	0.4745	0.3078	0.4300				
b2310	argT	TU-1230	-		0.0073	0.0219	-0.4464	0.0998				
b2311	ubiX	TU-1231	-		0.1402	0.7365	-0.3176	-0.2279				
b2312	purF	TU-1232	-		0.2263	0.5615	-0.3199	-0.5264	5			
b2313	cvpA	TU-1232	-		0.3249	0.5722	-0.2388	-0.0784	5	YES	NO	
b2314	dedD	TU-1233	-	S	0.0006	0.3350	0.2910	0.1859	4			
b2315	folC	TU-1233	-		0.0067	0.0167	0.4560	-0.0177				
b2316	accD	TU-1234	-		0.1512	0.0191	0.2455	-0.2205	5	YES	YES	
b2317	dedA	TU-1235	-		0.2523	0.0189	0.2451	-0.3503				
b2318	truA	TU-1235	-	S	0.0012	0.0234	0.3716	0.0633	1	YES	YES	ORF
b2319	usg	TU-1235	-		0.0615	0.0057	0.3226	-0.2701				
b2320	pdxB	TU-1235	-		0.0026	0.6523	0.3658	0.3045				
b2321	div	TU-1236	+		0.0248	0.0904	0.2418	0.0418	5	NO	NO	ORF
b2322	b2322	TU-1237	-	S	0.0000	0.5997	0.4856	0.4407	4			
b2323	fabB	TU-1238	-		0.0666	0.3499	-0.1831	-0.2957	5	YES	YES	
b2324	b2324	TU-1239	+		0.0495	0.4772	0.2646	0.3684	5	YES	YES	
b2325	b2325	TU-1240	-	S	0.0002	0.1080	0.2523	0.1139	4			
b2326	b2326	TU-1240	-		0.0854	0.0838	-0.1627	-0.3512				
b2327	yfcA	TU-1240	-		0.0247	0.1527	0.1661	0.0206				
b2328	mepA	TU-1240	-		0.2108	0.0879	-0.1538	-0.4073				
b2329	aroC	TU-1240	-		0.0215	0.4977	0.1465	0.0878				
b2330	yfcB	TU-1240	-		0.5640	0.0006	0.0326	-0.2340				
b2331	b2331	TU-1241	+		0.6310	0.1496	-0.0323	-0.1589	5	YES	YES	
b2332	b2332	TU-1242	-	S	0.0000	0.8800	-0.6136	-0.6379	1			
b2333	b2333	TU-1242	-		0.0161	0.3569	0.3968	0.5917	5			
b2334	b2334	TU-1242	-		0.0189	0.2179	0.5143	0.8058	5			
b2335	b2335	TU-1242	-		0.0092	0.3636	0.4722	0.6520	5			
b2336	yfcS	TU-1242	-		0.0184	0.8637	0.3509	0.3793	5			
b2337	b2337	TU-1242	-		0.0160	0.3694	0.3742	0.5418	5			
b2338	yfcU	TU-1242	-		0.0123	0.8477	0.3210	0.2917	5			
b2339	b2339	TU-1242	-		0.1722	0.6006	0.1876	0.0950	5	YES	YES	
b2340	b2340	TU-1243	-	S	0.0001	0.3315	0.2720	0.1739	1	YES	YES	
b2341	b2341	TU-1243	-		0.1758	0.0384	-0.1682	0.1734				
b2342	b2342	TU-1243	-		0.4274	0.0002	0.0508	0.5727				
b2343	b2343	TU-1244	-		0.0029	0.8005	-0.2277	-0.1836				
b2344	fadL	TU-1245	+		0.1328	0.8716	0.3504	0.3121	5	YES	YES	
b2345	b2345	TU-1246	+		0.1560	0.5542	0.2493	0.1175				
b2346	vacJ	TU-1247	-		0.2375	0.3464	0.0993	0.2383				
b2347	yfdC	TU-1248	+		0.0095	0.1981	-0.5055	-0.1895				
b2348	argW	TU-1249	+		0.0886	0.3005	-0.3410	-0.0355	5	YES	YES	
b2349	intC	TU-1250	+		0.0041	0.0845	-0.2705	0.1506				
b2350	b2350	TU-1251	+		0.0182	0.8112	-0.6681	-0.6018				
b2351	b2351	TU-1251	+		0.0600	0.5199	-0.4564	-0.6240				
b2352	b2352	TU-1251	+		0.0414	0.8581	-0.7662	-0.6874				
b2353	b2353	TU-1252	+		0.0036	0.4774	0.4634	0.5664	5	YES	YES	
b2354	b2354	TU-1253	-		0.0090	0.9607	0.3524	0.3453	5	NO	NO	ORF
b2355	yfdL	TU-1253	-	S	0.0008	0.5454	0.6790	0.7831	4			
b2356	yfdM	TU-1253	-	S	0.0003	0.6993	0.7078	0.7713	4			
b2357	yfdN	TU-1253	-	S	0.0007	0.8519	0.6211	0.5916	4			
b2358	yfdO	TU-1253	-	S	0.0006	0.5701	0.4833	0.5535	4			
b2359	b2359	TU-1254	+	S	0.0003	0.0957	0.5266	0.3205	4			
b2360	b2360	TU-1255	+	S	0.0003	0.0512	0.5316	0.2861	4			
b2361	b2361	TU-1256	+	S	0.0003	0.9654	0.5755	0.5697	4			
b2362	b2362	TU-1256	+	S	0.0002	0.1758	0.6055	0.4092	4			
b2363	b2363	TU-1256	+		0.0022	0.8204	0.4480	0.4849	3	YES	YES	IG2
b2364	dsdC	TU-1257	-		0.0271	0.4790	0.1568	0.0859	5	NO	NO	

b2365	dsdX	TU-1258	+		0.0395	0.6776	0.2292	0.1759	5	NO	NO	
b2366	dsdA	TU-1258	+		0.1039	0.3170	0.2086	0.3673	5			
b2367	emrY	TU-1259	-		0.5009	0.0042	0.0579	-0.3334				
b2368	emrK	TU-1259	-		0.0124	0.6606	0.3738	0.4426				
b2369	evgA	TU-1260	+	S	0.0012	0.6776	-0.5007	-0.4082	1	NO	NO	ORF
b2370	evgS	TU-1260	+		0.0377	0.8502	-0.4347	-0.4792	5	YES	NO	ORF
b2371	yfdE	TU-1261	-		0.1710	0.6727	0.2624	0.3576	5	YES	NO	ORF
b2372	b2372	TU-1261	-		0.0185	0.5217	0.4612	0.5946				
b2373	b2373	TU-1262	-		0.2166	0.6806	0.2313	0.3257				
b2374	b2374	TU-1262	-		0.0741	0.4711	0.2957	0.4236				
b2375	b2375	TU-1263	-		0.2107	0.3170	0.2197	0.4248				
b2376	b2376	TU-1264	+		0.0301	0.9289	0.3109	0.2961				
b2377	b2377	TU-1265	-		0.1493	0.0306	-0.2318	0.2149	5	YES	YES	
b2378	ddg	TU-1266	+		0.0069	0.2335	0.4533	0.2375	5	NO	NO	ORF
b2379	b2379	TU-1267	-		0.0202	0.0627	-0.1776	0.0179				
b2380	b2380	TU-1268	+		0.0026	0.0172	-0.2365	0.0895				
b2381	b2381	TU-1268	+	S	0.0001	0.1291	-0.3140	-0.1648	4			
b2382	b2382	TU-1268	+		0.9486	0.2609	0.0066	0.1797	5	NO	YES	
b2383	b2383	TU-1269	-		0.4323	0.0500	0.0981	0.4306	5	NO	NO	ORF
b2384	b2384	TU-1269	-		0.0522	0.0848	0.2155	0.4818				
b2385	b2385	TU-1269	-		0.0952	0.2958	0.1940	0.4820				
b2386	b2386	TU-1269	-		0.3073	0.0762	0.1111	0.4480				
b2387	b2387	TU-1269	-		0.0127	0.7753	0.3226	0.3695				
b2388	glk	TU-1270	-		0.5372	0.1592	0.1338	-0.2503				
b2389	b2389	TU-1271	+		0.1342	0.2600	0.2179	0.0359				
b2390	b2390	TU-1272	+	S	0.0004	0.2962	0.6697	0.4944	4			
b2392	b2392	TU-1273	-		0.1130	0.0348	-0.1626	0.1893				
b2393	nupC	TU-1274	+		0.1628	0.3265	-0.1748	-0.3922				
b2395	yfeA	TU-1275	-		0.3189	0.9808	-0.1222	-0.1258	5	YES	YES	
b2396	alaX	TU-1276	-		0.0257	0.8737	-0.3977	-0.3592	5			
b2397	alaW	TU-1276	-		0.0103	0.4840	-0.4653	-0.6709	5	YES	YES	
b2398	yfeC	TU-1277	+		0.5763	0.2721	0.0527	-0.0921				
b2399	yfeD	TU-1277	+		0.0776	0.1487	0.1087	-0.0616				
b2400	gltX	TU-1278	-		0.2683	0.7791	0.0780	0.0541	5	YES	YES	
b2402	valX	TU-1279	+		0.6392	0.7010	0.0438	-0.0152				
b2403	valY	TU-1279	+		0.4364	0.7715	-0.0951	-0.1451				
b2405	xapR	TU-1280	-		0.0195	0.2733	0.1466	0.0512				
b2406	xapB	TU-1281	-		0.0063	0.9898	0.2974	0.2959				
b2407	xapA	TU-1281	-	S	0.0011	0.4577	0.5173	0.6215	4			
b2408	yfeN	TU-1282	+		0.0528	0.9496	0.2170	0.2279				
b2409	yfeR	TU-1283	-	S	0.0008	0.9513	0.5250	0.5345	4			
b2410	yfeH	TU-1284	+	S	0.0021	0.0559	0.3141	0.0082	4			
b2411	lig	TU-1285	-		0.1737	0.9306	0.1601	0.1737	5			
b2412	zipA	TU-1285	-	S	0.0002	0.0384	-0.2800	-0.4878	1	YES	YES	
b2413	cysZ	TU-1286	+		0.2919	0.2670	-0.0633	0.0455	5	YES	YES	
b2414	cysK	TU-1287	+	S	0.0013	0.0252	0.2196	0.0449	4			
b2415	ptsH	TU-1288	+		0.9167	0.2225	0.0110	0.1600	5	YES	YES	
b2416	ptsI	TU-1288	+		0.0211	0.3896	-0.3313	-0.1953	5			
b2417	crr	TU-1288	+		0.9608	0.4300	0.0063	0.1393	5			
b2418	pdxK	TU-1289	-		0.0896	0.4397	-0.1959	-0.0906				
b2419	yfeK	TU-1290	+		0.2361	0.8334	0.1219	0.1657				
b2420	b2420	TU-1290	+		0.0144	0.0085	-0.3732	-0.8257				
b2421	cysM	TU-1291	-		0.0448	0.0019	0.2117	-0.1918	5	NO	YES	
b2422	cysA	TU-1291	-		0.0763	0.0087	0.2665	-0.2179				
b2423	cysW	TU-1291	-		0.1092	0.0854	0.2398	-0.0593				
b2424	cysU	TU-1291	-		0.5521	0.1498	0.1669	-0.2818				
b2425	cysP	TU-1291	-		0.2604	0.0383	0.1874	-0.1990	5	NO	NO	ORF
b2426	ucpA	TU-1292	-		0.4928	0.0125	0.0678	0.4077	5	NO	NO	
b2427	yfeT	TU-1292	-		0.2792	0.9128	0.1232	0.1042				
b2428	yfeU	TU-1293	+		0.5381	0.2701	0.0554	0.3241				
b2429	b2429	TU-1293	+		0.6360	0.0681	0.0544	0.3807	5	NO	NO	ORF
b2430	b2430	TU-1293	+		0.8638	0.0148	0.0150	0.3554				
b2431	b2431	TU-1294	-		0.0113	0.0695	0.5123	0.1531	5			

b2432	b2432	TU-1294	-		0.0644	0.1824	0.3307	0.0746	5			
b2433	b2433	TU-1294	-		0.3318	0.7052	0.1910	0.1100	5			
b2434	b2434	TU-1294	-		0.2936	0.0473	0.1004	-0.1788	5	YES	YES	
b2435	amiA	TU-1295	+		0.0744	0.0574	0.2796	-0.0751	5	YES	YES	
b2436	hemF	TU-1295	+		0.0221	0.0779	0.2287	0.0151	5			
b2437	yfeG	TU-1296	-		0.0025	0.7326	0.2976	0.3348				
b2438	b2438	TU-1296	-		0.0472	0.1950	0.2420	0.0665				
b2439	b2439	TU-1296	-		0.1531	0.7215	0.2076	0.1480				
b2440	eutC	TU-1296	-		0.0275	0.6396	0.3791	0.2926				
b2441	eutB	TU-1296	-	S	0.0003	0.0382	-0.3219	-0.5847	4			
b2442	b2442	TU-1297	+		0.0985	0.2473	0.1392	-0.0044				
b2443	b2443	TU-1298	+		0.0099	0.9650	0.1600	0.1663	5	YES	YES	ORF
b2444	b2444	TU-1299	+	S	0.0013	0.7598	0.5230	0.5754	4			
b2445	b2445	TU-1299	+	S	0.0013	0.7554	0.5090	0.4509	4			
b2446	b2446	TU-1300	+		0.0482	0.7724	0.2439	0.1934				
b2447	b2447	TU-1300	+		0.0098	0.6813	0.3500	0.4112				
b2448	b2448	TU-1301	+		0.0336	0.8721	0.2999	0.2652	5	YES	NO	
b2449	b2449	TU-1301	+	S	0.0012	0.9009	0.3714	0.3507	1			
b2450	b2450	TU-1302	+		0.4260	0.8931	0.0950	0.0721				
b2451	b2451	TU-1303	-		0.0039	0.9717	0.4444	0.4501				
b2452	eutH	TU-1303	-		0.0113	0.2310	0.4213	0.6382				
b2453	eutG	TU-1304	-		0.0128	0.3922	0.4367	0.5959				
b2454	eutJ	TU-1304	-		0.0056	0.1806	0.4267	0.6747				
b2455	eutE	TU-1304	-		0.0287	0.0720	0.2576	0.5367				
b2456	cchB	TU-1304	-		0.0286	0.1849	0.2900	0.4988				
b2457	cchA	TU-1305	-		0.0229	0.2303	0.2952	0.4617				
b2458	eutI	TU-1305	-		0.0158	0.1669	0.2483	0.4325	5	NO	NO	ORF
b2459	b2459	TU-1305	-		0.1111	0.0511	0.1638	0.4278				
b2460	b2460	TU-1305	-		0.0060	0.0496	0.3034	0.5594				
b2461	b2461	TU-1305	-		0.0184	0.1437	0.3258	0.5857				
b2462	b2462	TU-1305	-		0.1138	0.0626	0.1899	0.5095				
b2463	b2463	TU-1306	-		0.0597	0.0022	-0.1342	0.2815				
b2464	talA	TU-1307	+	S	0.0000	0.0495	-1.2154	-0.6480	1	NO	NO	ORF
b2465	tktB	TU-1307	+	S	0.0000	0.0190	-1.3505	-0.6336	4			
b2466	b2466	TU-1308	-		0.1141	0.1447	0.2092	0.5059				
b2467	yffH	TU-1309	-		0.0286	0.1960	0.2929	0.0711				
b2468	yffG	TU-1309	-	S	0.0006	0.1216	0.5528	0.3153	4			
b2469	narQ	TU-1310	+		0.0074	0.1184	0.4330	0.1463				
b2470	acrD	TU-1311	+		0.0277	0.4016	0.3316	0.1932	5	NO	NO	ORF
b2471	yffB	TU-1312	+		0.1363	0.7759	-0.1926	-0.1515	5	YES	NO	
b2472	dapE	TU-1312	+		0.5204	0.1618	-0.0470	-0.1662	5			
b2473	ypfH	TU-1313	-		0.0068	0.7231	0.3382	0.3852				
b2474	ypfI	TU-1313	-		0.7346	0.5074	0.0375	0.1231	5	NO	NO	ORF
b2475	b2475	TU-1313	-		0.0983	0.8411	-0.1511	-0.1771				
b2476	purC	TU-1314	-		0.0053	0.2502	0.2097	0.1025				
b2477	nlpB	TU-1315	-		0.0042	0.5787	0.2234	0.1701				
b2478	dapA	TU-1316	-	S	0.0000	0.0014	0.3764	0.1449	4			
b2479	gcvR	TU-1317	+		0.0270	0.6335	-0.1572	-0.0957				
b2480	bcp	TU-1317	+		0.0048	0.6865	0.1374	0.1085				
b2481	hyfA	TU-1318	+		0.0036	0.9252	0.4930	0.5090				
b2482	hyfB	TU-1318	+		0.0028	0.4663	0.3269	0.2432				
b2483	hyfC	TU-1318	+	S	0.0007	0.8254	0.6291	0.6660	4			
b2484	hyfD	TU-1318	+		0.0135	0.4304	0.2370	0.1518				
b2485	hyfE	TU-1318	+		0.0498	0.5460	0.2686	0.3697				
b2486	hyfF	TU-1318	+		0.0570	0.7335	0.2901	0.3486				
b2487	hyfG	TU-1318	+		0.0098	0.4726	0.3785	0.4820	5	NO	NO	ORF
b2488	hyfH	TU-1318	+		0.5073	0.0337	0.0478	0.2823				
b2489	hyfI	TU-1318	+		0.0101	0.2340	0.4437	0.6502				
b2490	b2490	TU-1318	+		0.0175	0.6762	0.3695	0.4455				
b2491	hyfR	TU-1318	+		0.0461	0.3026	0.2599	0.4207				
b2492	focB	TU-1318	+		0.0838	0.2330	-0.1785	-0.0388				
b2493	perM	TU-1319	-		0.0510	0.9908	-0.1348	-0.1357				
b2494	b2494	TU-1320	+		0.4273	0.7134	0.0391	-0.0022				

b2495	b2495	TU-1320	+		0.2957	0.8703	-0.0960	-0.0705				
b2496	b2496	TU-1321	-		0.0044	0.6703	-0.5257	-0.4499				
b2497	uraA	TU-1322	-		0.0512	0.1621	-0.2272	0.1398				
b2498	upp	TU-1322	-		0.8122	0.5141	-0.0210	-0.1265				
b2499	purM	TU-1323	+		0.0315	0.2141	-0.7554	-1.2068				
b2500	purN	TU-1323	+		0.3571	0.2224	-0.1591	-0.4933				
b2501	ppk	TU-1324	+		0.0224	0.9088	-0.2838	-0.2671	5	YES	YES	
b2502	ppx	TU-1324	+		0.0091	0.4105	-0.4820	-0.3343	5			
b2503	b2503	TU-1325	-		0.0022	0.2487	0.7209	0.4789	5	NO	NO	ORF
b2504	b2504	TU-1326	+		0.7937	0.4446	-0.0463	-0.2336				
b2505	b2505	TU-1327	+	S	0.0002	0.0815	0.6668	0.3839	4			
b2506	b2506	TU-1327	+	S	0.0002	0.2447	0.4983	0.3354	4			
b2507	guaA	TU-1328	-		0.8716	0.4417	0.0235	-0.1646				
b2508	guaB	TU-1328	-		0.4215	0.3913	0.0921	-0.0833				
b2509	xseA	TU-1329	+		0.5838	0.1173	0.0584	-0.1470	5	NO	NO	ORF
b2510	b2510	TU-1330	-		0.4557	0.0508	-0.0854	-0.4297				
b2511	b2511	TU-1330	-		0.7581	0.0973	0.0327	-0.2002				
b2512	b2512	TU-1330	-		0.2429	0.0232	0.0878	-0.1403				
b2513	b2513	TU-1330	-		0.1203	0.0094	0.1262	-0.1429				
b2514	hisS	TU-1330	-		0.0841	0.0289	0.1386	-0.1051				
b2515	gcpE	TU-1331	-		0.3785	0.0214	0.0440	-0.1406				
b2516	yfgA	TU-1331	-		0.5077	0.0066	0.0375	-0.2769	5	YES	YES	
b2517	yfgB	TU-1331	-		0.0074	0.1613	0.3036	0.1329	5	YES	YES	
b2518	ndk	TU-1331	-		0.0046	0.9191	0.4350	0.4200				
b2519	pbpC	TU-1332	-		0.0026	0.7088	0.3995	0.4517				
b2520	b2520	TU-1332	-		0.1114	0.6492	0.1922	0.1273				
b2521	sseA	TU-1333	+		0.5838	0.7959	0.0732	0.1142				
b2522	sseB	TU-1334	-		0.2219	0.7159	0.1786	0.2453	5	NO	NO	
b2523	pepB	TU-1334	-	S	0.0000	0.9682	0.3431	0.3467	4			
b2524	yfhJ	TU-1334	-		0.0069	0.5194	0.2278	0.1513				
b2525	fdx	TU-1335	-	S	0.0000	0.1896	0.5522	0.4390	4			
b2526	hscA	TU-1335	-	S	0.0000	0.0441	0.5734	0.3925	4			
b2527	yfhE	TU-1335	-	S	0.0003	0.1152	0.3129	0.1592	4			
b2528	yfhF	TU-1336	-		0.8739	0.1777	0.0090	-0.0991	5			
b2529	b2529	TU-1336	-		0.2371	0.4289	0.0888	0.1603	5			
b2530	yfhO	TU-1336	-		0.5418	0.3656	0.0274	0.1152	5			
b2531	b2531	TU-1336	-		0.3491	0.4905	0.0767	0.1515	5	YES	YES	
b2532	b2532	TU-1336	-		0.3607	0.1680	0.0969	-0.0644				
b2533	suhB	TU-1337	+		0.3080	0.1637	-0.0826	0.1024				
b2534	b2534	TU-1338	+		0.2371	0.3919	0.0958	0.2213	5	NO	NO	ORF
b2535	csiE	TU-1339	+	S	0.0018	0.0080	-0.5068	0.0585	4			
b2536	hcaT	TU-1340	-		0.7289	0.2306	0.0456	0.2758	5	NO	NO	
b2537	hcaR	TU-1340	-		0.0305	0.0025	-0.2553	0.2805				
b2538	hcaA1	TU-1341	+		0.4409	0.3873	0.0819	0.2239				
b2539	hcaA2	TU-1341	+		0.0037	0.1848	0.4181	0.2297				
b2540	hcaC	TU-1341	+		0.0098	0.7803	0.3663	0.3252				
b2541	hcaB	TU-1341	+	S	0.0012	0.7706	0.4663	0.4263	1	NO	NO	ORF
b2542	hcaD	TU-1341	+		0.1733	0.7382	0.1454	0.1010				
b2543	yphA	TU-1341	+		0.0028	0.1790	-0.4928	-0.1496				
b2544	yphB	TU-1342	-	S	0.0019	0.6324	0.4002	0.3469	4			
b2545	yphC	TU-1342	-		0.0077	0.7368	0.3162	0.3537	5	NO	NO	ORF
b2546	yphD	TU-1342	-		0.0052	0.5458	0.3803	0.4515				
b2547	yphE	TU-1342	-	S	0.0002	0.8800	0.5621	0.5425	4			
b2548	yphF	TU-1342	-	S	0.0016	0.6418	0.5137	0.5821	4			
b2549	yphG	TU-1343	-		0.0030	0.7075	0.4689	0.5256				
b2550	yphH	TU-1344	+	S	0.0005	0.4068	0.2976	0.2250	4			
b2551	glyA	TU-1345	-		0.2225	0.0265	0.0698	-0.1029				
b2552	hmpA	TU-1346	+	S	0.0015	0.6939	0.2195	0.1806	4			
b2553	glnB	TU-1347	-		0.0958	0.4444	-0.1238	-0.2395				
b2554	yfhA	TU-1348	-		0.0047	0.2404	0.1837	0.0684				
b2555	yfhG	TU-1348	-		0.0024	0.1371	0.3070	0.1516				
b2556	yfhK	TU-1348	-		0.7028	0.0910	0.0296	-0.1907				
b2557	purL	TU-1349	-	S	0.0018	0.0235	0.2472	-0.0459	1	NO	NO	ORF

b2558	yfhD	TU-1350	+			0.0041	0.6834	0.3673	0.4180	5	NO	NO	ORF
b2559	yfhC	TU-1351	-			0.0370	0.4934	0.2357	0.1474	5			
b2560	yfhB	TU-1351	-			0.0262	0.6499	-0.2405	-0.1835	5	YES	NO	
b2561	yfhH	TU-1352	+			0.7784	0.3352	-0.0246	0.1420	5	YES	NO	
b2562	yfhL	TU-1352	+			0.0189	0.8612	0.3623	0.3252	5			
b2563	acpS	TU-1353	-			0.9172	0.0048	0.0044	0.2704				
b2564	pdxJ	TU-1353	-			0.0954	0.6156	-0.1587	-0.1032				
b2565	recO	TU-1353	-			0.3514	0.0901	-0.0544	-0.2038				
b2566	era	TU-1353	-			0.2534	0.3098	-0.1756	-0.3597				
b2567	rnc	TU-1353	-	S		0.0004	0.9382	0.2867	0.2941	4			
b2568	lepB	TU-1354	-			0.0181	0.0569	0.2822	0.0381				
b2569	lepA	TU-1354	-			0.2077	0.3476	-0.3130	-0.5578				
b2570	rseC	TU-1355	-			0.0647	0.5655	-0.2263	-0.1456				
b2571	rseB	TU-1355	-			0.0193	0.4099	-0.6259	-0.8394				
b2572	rseA	TU-1355	-	S		0.0015	0.0249	-0.5878	-0.9599	4			
b2573	rpoE	TU-1355	-			0.0106	0.3628	-0.5650	-0.7840				
b2574	nadB	TU-1356	+			0.0035	0.7471	-0.4752	-0.3652	5	YES	YES	
b2575	yfiC	TU-1357	-			0.0071	0.2030	0.3549	0.1730	3	NO	NO	IG2
b2576	srmB	TU-1358	+	S		0.0007	0.0327	0.6733	0.3166	4			
b2577	yfiE	TU-1359	-			0.0126	0.6181	0.4249	0.3367				
b2578	yfiK	TU-1360	+			0.0472	0.5765	0.3205	0.2263				
b2579	yfiD	TU-1361	-			0.8936	0.2010	0.0277	-0.5529	5	YES	NO	
b2580	ung	TU-1362	+			0.2557	0.4069	0.1432	0.0222	5	YES	NO	
b2581	yfiF	TU-1363	-	S		0.0001	0.1618	0.4321	0.3130	4			
b2582	trxC	TU-1364	+			0.0255	0.7131	0.3606	0.2812	5	YES	NO	ORF
b2583	yfiP	TU-1364	+			0.0299	0.0190	0.3481	-0.0542				
b2584	yfiQ	TU-1364	+			0.0159	0.6261	-0.2225	-0.3118				
b2585	pssA	TU-1364	+			0.0185	0.0838	-0.1870	0.0292				
b2586	yfiM	TU-1365	+		S	0.5333	0.0001	-0.0527	0.4471				
b2587	kgtP	TU-1366	-	S		0.0000	0.0053	-0.5406	-0.1483	4			
b2588	rrfG	TU-1367	-			0.6886	0.4899	-0.0260	0.0460				
b2589	rrlG	TU-1368	-			0.0631	0.8098	0.0783	0.0891				
b2590	gltW	TU-1369	-			0.0135	0.3963	-0.2219	-0.1092				
b2591	rrsG	TU-1370	-			0.4199	0.1484	0.0188	-0.0260	5	YES	YES	
b2592	clpB	TU-1371	-	S		0.0007	0.3096	-0.5961	-0.8487	1	YES	YES	
b2593	yfiH	TU-1372	-			0.4050	0.6763	0.0769	0.0153				
b2594	sfhB	TU-1372	-			0.0105	0.4764	-0.2856	-0.3613				
b2595	b2595	TU-1373	+	S		0.0001	0.0049	0.3262	0.0566	4			
b2596	b2596	TU-1373	+			0.0235	0.0085	0.3126	-0.1414				
b2597	yfiA	TU-1373	+			0.0048	0.1280	-0.4707	-0.0827				
b2598	pheL	TU-1374	+			0.6963	0.8506	-0.1451	-0.2608				
b2599	pheA	TU-1374	+			0.4401	0.6615	-0.1290	-0.2543				
b2600	tyrA	TU-1375	-	S		0.0003	0.9258	-0.3331	-0.3165	1	NO	NO	
b2601	aroF	TU-1375	-			0.3477	0.2644	0.1624	0.4689				
b2602	yfiL	TU-1376	+			0.3680	0.9513	-0.1424	-0.1235				
b2603	b2603	TU-1377	+			0.9275	0.1230	0.0125	0.2847				
b2604	yfiN	TU-1377	+			0.9606	0.7004	0.0042	0.0664				
b2605	yfiB	TU-1377	+			0.2670	0.8777	0.1109	0.1333				
b2606	rplS	TU-1378	-			0.0065	0.9539	-0.5406	-0.5575	5	NO	NO	
b2607	trmD	TU-1378	-			0.0092	0.4994	-0.0999	-0.1374				
b2608	yfjA	TU-1378	-			0.0733	0.0464	-0.0467	-0.1398				
b2609	rpsP	TU-1378	-	S		0.0001	0.7475	0.2019	0.2366	4			
b2610	ffh	TU-1379	-			0.7015	0.9340	0.0478	0.0365	5	YES	YES	
b2611	b2611	TU-1380	+			0.1724	0.4174	-0.1315	-0.2213	5	YES	YES	
b2612	ypjE	TU-1380	+			0.3672	0.6339	-0.1298	-0.2112	5			
b2613	yfjD	TU-1380	+			0.2911	0.9997	0.1288	0.1288	5			
b2614	grpE	TU-1381	-			0.0155	0.4177	-0.2527	-0.1374				
b2615	yfjB	TU-1382	+			0.0083	0.7713	-0.4454	-0.4932				
b2616	recN	TU-1383	+			0.5419	0.2428	0.0598	-0.0970	5	NO	NO	ORF
b2617	smpA	TU-1383	+			0.2610	0.1625	0.2457	-0.1252				
b2618	b2618	TU-1384	-	S		0.0003	0.0026	0.6737	0.1784	4			
b2619	b2619	TU-1384	-	S		0.0020	0.0351	0.6427	0.2391	4			
b2620	smpB	TU-1385	+			0.0851	0.1194	0.3102	-0.0016				

b-number	gene	TU	str	S								
b2621	ssrA	TU-1386	+	S	0.0020	0.9968	0.2901	0.2905	1	YES	YES	
b2622	intA	TU-1387	+		0.9824	0.1786	-0.0041	-0.2927				
b2623	yfjH	TU-1388	-		0.3749	0.5910	0.1343	0.0386				
b2624	alpA	TU-1389	+	S	0.0006	0.2117	0.6691	0.4435	4			
b2625	yfjI	TU-1390	+	S	0.0008	0.0034	0.5185	0.0078	4			
b2626	yfjJ	TU-1391	+	S	0.0004	0.4774	0.4505	0.3563	4			
b2627	yfjK	TU-1392	-	S	0.0001	0.0411	-0.4602	-0.7336	1			
b2628	yfjL	TU-1392	-		0.0155	0.1144	0.2400	0.0207	5	YES	YES	
b2629	yfjM	TU-1393	-	S	0.0004	0.1193	0.4903	0.2448	4			
b2630	yfjN	TU-1394	+	S	0.0001	0.2404	0.4842	0.3377	1	YES	YES	ORF
b2631	yfjO	TU-1394	+		0.0164	0.0014	0.2554	-0.2638				
b2632	yfjP	TU-1395	+	S	0.0015	0.5510	0.4153	0.4929	4			
b2633	yfjQ	TU-1396	+	S	0.0008	0.5476	0.6060	0.7055	4			
b2634	yfjR	TU-1397	+	S	0.0015	0.9017	0.4145	0.4304	4			
b2636	b2636	TU-1397	+		0.0053	0.1132	0.4965	0.7740				
b2637	yfjT	TU-1397	+		0.0113	0.2763	0.3310	0.4684				
b2638	b2638	TU-1398	-	S	0.0004	0.6150	-0.6597	-0.5472	4			
b2639	b2639	TU-1398	-		0.1565	0.9084	0.1160	0.1029				
b2640	b2640	TU-1399	-		0.0021	0.1716	0.4638	0.6720	5			
b2641	b2641	TU-1399	-		0.0026	0.2667	0.4679	0.6264	5	YES	YES	
b2642	yfjW	TU-1400	+		0.0751	0.0412	-0.3175	-0.8285	5	YES	YES	
b2643	yfjX	TU-1401	+		0.0391	0.9402	0.2683	0.2573				
b2644	yfjY	TU-1401	+		0.0100	0.6741	0.2565	0.3113				
b2645	yfjZ	TU-1402	+	S	0.0007	0.5776	0.5260	0.6260	4			
b2646	ypjF	TU-1402	+		0.0679	0.6625	0.2028	0.1063	3	NO	YES	IG2
b2647	ypjA	TU-1403	-		0.0241	0.1523	0.2088	0.4240	5	YES	YES	ORF
b2648	b2648	TU-1404	-		0.0435	0.0671	0.2815	0.6274				
b2649	b2649	TU-1405	-		0.0569	0.5305	0.2499	0.3441				
b2650	b2650	TU-1406	-		0.2516	0.6720	0.1537	0.2453				
b2651	b2651	TU-1407	+		0.2991	0.6177	0.1281	0.2366				
b2652	ileY	TU-1408	-		0.0259	0.3070	0.2689	0.4331				
b2653	b2653	TU-1408	-		0.0540	0.0801	0.2573	0.6071				
b2654	b2654	TU-1409	+		0.0029	0.3002	0.4359	0.2133				
b2655	b2655	TU-1409	+	S	0.0003	0.2433	0.7900	0.5551	4			
b2656	b2656	TU-1409	+	S	0.0001	0.6080	0.9213	0.8312	4			
b2657	b2657	TU-1410	+	S	0.0009	0.9849	0.7310	0.7348	4			
b2658	b2658	TU-1411	+	S	0.0000	0.8282	0.9343	0.8937	4			
b2659	b2659	TU-1412	+		0.5723	0.0295	-0.0889	0.3241	5	NO	YES	
b2660	ygaF	TU-1412	+		0.5624	0.8346	-0.0950	-0.0474	5			
b2661	gabD	TU-1412	+		0.0353	0.4992	-0.2372	-0.1159	5	NO	NO	ORF
b2662	gabT	TU-1412	+		0.3271	0.1393	-0.0930	0.1620	5			
b2663	gabP	TU-1412	+		0.1960	0.0430	-0.1764	0.1776	5	NO	NO	ORF
b2664	ygaE	TU-1412	+		0.0357	0.3937	-0.1872	-0.1027	5			
b2665	ygaU	TU-1413	-	S	0.0006	0.0953	-0.7572	-0.1425	4			
b2666	b2666	TU-1413	-	S	0.0000	0.0640	-1.0042	-0.6997	4			
b2667	b2667	TU-1414	+		0.0207	0.4657	0.2206	0.1432				
b2668	ygaP	TU-1414	+		0.0948	0.7106	-0.1843	-0.2374				
b2669	stpA	TU-1415	-		0.4996	0.2915	0.0743	0.3711	5	YES	NO	
b2670	b2670	TU-1416	+		0.0061	0.6356	0.4477	0.1039	5	YES	NO	
b2671	ygaC	TU-1417	-		0.1588	0.7245	0.2072	0.1228				
b2672	ygaM	TU-1418	+	S	0.0002	0.0848	-1.0808	-0.4903	4			
b2673	nrdH	TU-1419	+		0.9923	0.7745	-0.0038	0.1145				
b2674	nrdI	TU-1419	+		0.1815	0.7744	0.6658	0.5224				
b2675	nrdE	TU-1419	+		0.8006	0.1804	0.0678	0.4642	5	NO	NO	ORF
b2676	nrdF	TU-1419	+		0.1474	0.6450	0.3224	0.4385				
b2677	proV	TU-1420	+	S	0.0001	0.0245	-0.8662	-0.0376	4			
b2678	proW	TU-1420	+	S	0.0000	0.0330	-0.5205	0.0829	4			
b2679	proX	TU-1420	+		0.0817	0.0011	-0.2851	0.4196				
b2680	b2680	TU-1421	+		0.0715	0.2259	0.2153	0.3642				
b2681	b2681	TU-1421	+		0.0475	0.2333	0.1736	0.2974				
b2682	b2682	TU-1422	+	S	0.0014	0.5907	-0.3128	-0.2135	4			
b2683	ygaH	TU-1422	+		0.4720	0.0595	0.0592	0.4507				
b2684	emrR	TU-1423	+		0.2023	0.3575	-0.1110	0.0215				

				S	S								
b2685	emrA	TU-1423	+	S		0.0007	0.4642	-0.6456	-0.5042	4			
b2686	emrB	TU-1423	+			0.2215	0.0983	0.1491	0.4365				
b2687	ygaG	TU-1424	-	S		0.0001	0.7549	-0.4924	-0.5335	4			
b2688	gshA	TU-1424	-			0.0199	0.2945	-0.2633	-0.1336				
b2689	b2689	TU-1424	-			0.5026	0.3851	-0.1007	0.0611				
b2690	yqaB	TU-1424	-			0.3960	0.3158	0.0684	0.1976				
b2691	argQ	TU-1425	-			0.1638	0.3392	0.1945	0.4168				
b2692	argZ	TU-1425	-			0.0270	0.6614	0.3333	0.4451				
b2694	argV	TU-1426	-			0.4294	0.3945	0.0942	0.2899				
b2695	serV	TU-1426	-			0.2020	0.3250	0.1424	-0.0998				
b2696	csrA	TU-1427	-			0.5834	0.4134	0.0861	-0.0979				
b2697	alaS	TU-1428	-			0.6764	0.0299	-0.0447	-0.3806				
b2698	oraA	TU-1429	-	S		0.0001	0.2099	0.6243	0.4460	4			
b2699	recA	TU-1430	-			0.0172	0.0494	0.2662	0.0349				
b2700	ygaD	TU-1431	-			0.0040	0.4014	0.5687	0.4209				
b2701	mltB	TU-1432	-			0.1346	0.0956	0.3045	-0.0527				
b2702	srlA	TU-1433	+			0.1679	0.6827	0.2808	0.3740				
b2703	srlE	TU-1433	+			0.0603	0.6549	0.3946	0.4910				
b2704	srlB	TU-1433	+			0.0168	0.7135	0.3837	0.4393	5	NO	NO	
b2705	srlD	TU-1433	+			0.0295	0.5743	0.2393	0.2997				
b2706	gutM	TU-1433	+			0.8313	0.9433	0.0168	0.0239				
b2707	srlR	TU-1433	+			0.2183	0.8091	0.1202	0.0881	5	NO	NO	ORF
b2708	gutQ	TU-1433	+			0.1144	0.9603	0.1337	0.1383				
b2709	ygaA	TU-1434	-			0.0735	0.5910	0.2484	0.3266				
b2710	b2710	TU-1435	+			0.0028	0.6202	0.4885	0.4139				
b2711	ygbD	TU-1435	+			0.0148	0.3488	0.3150	0.1867				
b2712	hypF	TU-1436	-	S		0.0014	0.2382	0.5688	0.3823	4			
b2713	hydN	TU-1436	-		S	0.0144	0.0000	0.3512	-0.8080				
b2714	ascG	TU-1437	-			0.0023	0.9116	0.2826	0.2704	5	NO	YES	
b2715	ascF	TU-1438	+			0.1529	0.3583	0.2269	0.3958	5	NO	YES	
b2716	ascB	TU-1438	+			0.0073	0.2760	0.3554	0.5126	5			
b2717	hycI	TU-1439	-			0.3724	0.0048	0.0762	-0.3601				
b2718	hycH	TU-1439	-			0.0275	0.0002	0.2516	-0.6002				
b2719	hycG	TU-1439	-			0.1219	0.0007	0.1880	-0.7221				
b2720	hycF	TU-1439	-	S		0.0000	0.0004	0.4831	-0.5873	4			
b2721	hycE	TU-1439	-			0.0121	0.0032	0.3575	-0.5276				
b2722	hycD	TU-1439	-			0.0079	0.0007	0.2670	-0.6200				
b2723	hycC	TU-1439	-			0.0030	0.0004	0.3416	-0.6902	5	NO	NO	ORF
b2724	hycB	TU-1439	-		S	0.1485	0.0000	0.1517	-1.2390				
b2725	hycA	TU-1439	-		S	0.0126	0.0000	0.3676	-1.2882				
b2726	hypA	TU-1440	+			0.0619	0.0271	0.1325	-0.2574				
b2727	hypB	TU-1440	+		S	0.0967	0.0001	-0.2725	-1.3264				
b2728	hypC	TU-1440	+			0.0157	0.0225	-0.1739	-0.5483				
b2729	hypD	TU-1440	+			0.0089	0.1005	-0.3407	-0.6434				
b2730	hypE	TU-1440	+			0.1346	0.1766	0.1759	0.3706				
b2731	fhlA	TU-1441	+			0.5361	0.1255	0.0557	0.2477				
b2732	ygbA	TU-1442	-	S		0.0004	0.5671	0.5838	0.4955	4			
b2733	mutS	TU-1443	+	S		0.0004	0.0236	0.5164	0.1548	4			
b2734	pphB	TU-1444	+	S		0.0000	0.1143	0.6161	0.4214	4			
b2735	ygbI	TU-1445	-			0.0707	0.6669	0.2027	0.1526	5	YES	NO	
b2736	b2736	TU-1446	+	S		0.0014	0.9057	0.5457	0.5284	1	YES	NO	
b2737	b2737	TU-1446	+			0.0075	0.3743	0.5356	0.3700	5			
b2738	ygbL	TU-1446	+			0.0120	0.7186	0.4266	0.3694	5			
b2739	ygbM	TU-1446	+			0.0041	0.7787	0.5133	0.4661	5			
b2740	b2740	TU-1447	+			0.0047	0.7386	0.3885	0.4294	5	NO	NO	ORF
b2741	rpoS	TU-1448	-			0.9771	0.0597	-0.0038	0.3127				
b2742	nlpD	TU-1448	-			0.0299	0.9951	-0.1312	-0.1307	5	YES	YES	ORF
b2743	pcm	TU-1449	-			0.6234	0.0331	-0.0329	-0.2460				
b2744	surE	TU-1449	-			0.7530	0.3564	0.0170	-0.0581				
b2745	ygbO	TU-1449	-	S		0.0011	0.3353	0.1437	0.0861	4			
b2746	ygbB	TU-1449	-	S		0.0003	0.0102	0.2337	-0.0258	4			
b2747	ygbP	TU-1449	-	S		0.0001	0.0228	0.3456	0.1639	4			
b2748	b2748	TU-1449	-	S		0.0000	0.1335	0.4459	0.3189	4			

b2749	ygbE	TU-1449	-		0.0041	0.0013	0.4139	-0.1921				
b2750	cysC	TU-1450	-	S	0.0011	0.0026	0.5303	0.0652	4			
b2751	cysN	TU-1450	-		0.1302	0.0004	0.1919	-0.3799	5	NO	NO	
b2752	cysD	TU-1450	-		0.0195	0.0023	0.3061	-0.1635				
b2753	iap	TU-1451	+		0.0198	0.7776	0.3432	0.3939	5	NO	NO	ORF
b2754	ygbF	TU-1452	-		0.4147	0.5074	0.1198	0.2588				
b2755	b2755	TU-1452	-		0.9892	0.3814	-0.0016	0.1536				
b2756	b2756	TU-1452	-		0.4707	0.5640	-0.0862	0.0090				
b2757	b2757	TU-1452	-		0.0601	0.0973	-0.1927	0.0352				
b2758	b2758	TU-1452	-		0.0942	0.0596	-0.1728	0.1433	5	NO	NO	ORF
b2759	ygcK	TU-1452	-		0.0461	0.4075	-0.1689	-0.0503				
b2760	b2760	TU-1452	-		0.1703	0.0897	-0.1735	0.2081	5	NO	NO	ORF
b2761	ygcB	TU-1453	-		0.0721	0.8830	0.2667	0.2392	5	NO	NO	ORF
b2762	cysH	TU-1454	-		0.4020	0.0416	0.1809	-0.3480				
b2763	cysI	TU-1454	-		0.1775	0.1376	0.3001	-0.0584	5	NO	NO	
b2764	cysJ	TU-1454	-		0.0458	0.0802	0.4182	0.0158				
b2765	ygcM	TU-1455	+		0.1199	0.7847	0.2903	0.2288				
b2766	ygcN	TU-1455	+		0.7660	0.0208	0.0234	0.3046				
b2767	ygcO	TU-1455	+		0.2693	0.0140	0.0943	0.4099				
b2768	ygcP	TU-1455	+	S	0.0005	0.6034	0.6709	0.5736	4			
b2769	ygcQ	TU-1456	-	S	0.0000	0.8029	0.6081	0.5731	4			
b2770	ygcR	TU-1456	-	S	0.0001	0.7358	0.5012	0.4607	4			
b2771	ygcS	TU-1456	-	S	0.0001	0.2271	0.6063	0.7841	4			
b2772	b2772	TU-1456	-		0.0234	0.2825	0.3667	0.1949				
b2773	ygcU	TU-1456	-		0.0102	0.5551	0.4960	0.3945				
b2774	ygcW	TU-1457	-		0.0022	0.1489	0.6148	0.3458				
b2775	yqcE	TU-1458	+		0.0046	0.4767	0.5732	0.4359				
b2776	ygcE	TU-1458	+	S	0.0003	0.3246	0.6381	0.4839	4	YES	YES	IG2
b2777	ygcF	TU-1459	-		0.2871	0.0006	0.0925	-0.3754	3	YES	YES	IG2
b2778	ygcG	TU-1460	+	S	0.0006	0.2749	0.5255	0.3675	4	NO	NO	IG2
b2779	eno	TU-1461	-		0.4989	0.0235	0.0489	-0.1568	3	NO	NO	IG2
b2780	pyrG	TU-1461	-		0.0133	0.0565	-0.3862	-0.6750				
b2781	mazG	TU-1462	-		0.0220	0.7442	0.2505	0.3027				
b2782	chpA	TU-1463	-		0.1479	0.9897	0.1323	0.1339				
b2783	chpR	TU-1463	-		0.0772	0.1433	-0.1310	-0.3184	5	YES	YES	
b2784	relA	TU-1463	-		0.0576	0.3126	-0.1221	-0.1993				
b2785	ygcA	TU-1464	-		0.3846	0.1845	-0.0915	-0.3033				
b2786	barA	TU-1465	+		0.0024	0.1081	0.2146	0.0760	5	YES	YES	
b2787	ygcX	TU-1466	-		0.0046	0.9572	0.4250	0.4168				
b2788	ygcY	TU-1466	-	S	0.0020	0.8314	0.4445	0.4756	4			
b2789	b2789	TU-1466	-		0.0243	0.6081	0.3955	0.4953				
b2790	b2790	TU-1467	-		0.1895	0.9208	-0.1775	-0.1951				
b2791	yqcB	TU-1467	-		0.0113	0.0740	0.2648	0.0713				
b2792	b2792	TU-1467	-	S	0.0003	0.5913	0.4009	0.3398	4			
b2793	syd	TU-1468	-		0.0514	0.9206	-0.1639	-0.1805	5	YES	YES	
b2794	yqcD	TU-1469	+		0.0702	0.0808	-0.4236	-0.8649				
b2795	ygdH	TU-1469	+	S	0.0005	0.9226	-0.6648	-0.6459	4			
b2796	sdaC	TU-1470	+		0.2042	0.3691	0.2338	-0.1250	5	YES	YES	
b2797	sdaB	TU-1470	+	S	0.0007	0.2511	0.3289	0.4389	1			
b2798	exo	TU-1471	+		0.0816	0.8755	0.1161	0.1007				
b2799	fucO	TU-1472	-		0.0921	0.2569	0.1502	0.2942				
b2800	fucA	TU-1472	-		0.4266	0.2209	0.0677	0.2520				
b2801	fucP	TU-1473	+		0.0166	0.0746	0.2021	0.4597	5	NO	NO	ORF
b2802	fucI	TU-1473	+		0.5735	0.1235	0.0422	0.2081				
b2803	fucK	TU-1473	+		0.7764	0.0081	0.0237	0.4617				
b2804	fucU	TU-1473	+		0.8718	0.7786	0.0311	0.0913				
b2805	fucR	TU-1473	+		0.0844	0.5216	0.3345	0.1981				
b2806	ygdE	TU-1474	-	S	0.0013	0.0829	0.4340	0.2006	1	NO	NO	ORF
b2807	ygdD	TU-1474	-		0.2134	0.2838	0.1857	-0.0134				
b2808	gcvA	TU-1475	-		0.3522	0.2055	0.1578	-0.0713	5	NO	YES	ORF
b2809	b2809	TU-1476	-	S	0.0004	0.8103	-0.6072	-0.5359	4			
b2810	b2810	TU-1477	+		0.0072	0.0327	0.4066	0.0864				
b2811	ygdK	TU-1477	+		0.0367	0.1247	0.2470	0.0517				

b2812	ygdL	TU-1478	-	S	0.0006	0.0137	0.3472	0.1242	1			
b2813	mltA	TU-1478	-		0.0251	0.6903	0.2079	0.1661	5	YES	YES	
b2814	metZ	TU-1479	+		0.2778	0.3738	-0.1858	0.0440	5	YES	YES	
b2815	metW	TU-1479	+		0.6645	0.6875	-0.0578	0.0442	5			
b2816	metV	TU-1479	+		0.0196	0.3319	-0.4312	-0.1787	5			
b2817	b2817	TU-1480	-		0.0092	0.5433	0.2523	0.1875	5	YES	YES	
b2818	argA	TU-1481	+		0.1107	0.0595	0.2981	-0.1280	5	YES	YES	
b2819	recD	TU-1482	-	S	0.0000	0.0450	0.3899	0.2132	1			
b2820	recB	TU-1482	-	S	0.0001	0.0003	0.6085	0.1226	1			
b2821	ptr	TU-1482	-	S	0.0000	0.0423	0.8703	0.6183	1	NO	NO	
b2822	recC	TU-1483	-		0.3653	0.0262	0.0547	-0.1477				
b2823	ppdC	TU-1483	-		0.1219	0.3667	-0.1333	-0.2253				
b2824	ygdB	TU-1483	-		0.1967	0.5626	0.1184	0.0557				
b2825	ppdB	TU-1483	-		0.0222	0.6494	0.4380	0.5293				
b2826	ppdA	TU-1483	-		0.0030	0.5715	0.5424	0.6407				
b2827	thyA	TU-1484	-	S	0.0001	0.1851	0.2671	0.1333	4			
b2828	lgt	TU-1484	-		0.1632	0.5314	-0.1567	-0.2584				
b2829	ptsP	TU-1485	-		0.1109	0.6695	-0.1436	-0.1967	5			
b2830	ygdP	TU-1485	-		0.0253	0.2250	-0.2636	-0.0904	5	YES	YES	
b2831	mutH	TU-1486	+	S	0.0002	0.1665	0.4450	0.5838	1	YES	YES	
b2832	b2832	TU-1486	+		0.0070	0.2092	0.2214	0.3644	5			
b2833	b2833	TU-1487	+		0.2595	0.6572	-0.1017	-0.0138				
b2834	b2834	TU-1488	+		0.0163	0.0343	-0.2192	-0.0153				
b2835	ygeD	TU-1489	-		0.1629	0.0042	-0.1100	0.1663				
b2836	aas	TU-1489	-		0.1887	0.1760	0.1331	0.2963				
b2837	galR	TU-1490	+	S	0.0001	0.0319	-0.5570	-0.2998	4			
b2838	lysA	TU-1491	-		0.1414	0.0413	-0.2979	-0.7524				
b2839	lysR	TU-1492	+		0.0643	0.0746	-0.1582	0.0575				
b2840	ygeA	TU-1493	-	S	0.0001	0.6021	-0.2987	-0.2459	1	NO	NO	ORF
b2841	araE	TU-1494	-		0.4130	0.2953	-0.0415	0.0786	5	YES	YES	
b2842	kduD	TU-1495	-		0.0197	0.0234	-0.2371	0.1005				
b2843	kduI	TU-1495	-	S	0.0000	0.1768	0.4106	0.5798	4			
b2844	yqeF	TU-1496	-	S	0.0005	0.5705	0.6612	0.7659	1	NO	YES	
b2845	b2845	TU-1497	+		0.0142	0.3563	0.4626	0.2773	5	NO	YES	
b2846	yqeH	TU-1498	+		0.0037	0.8192	0.5756	0.5342	5	YES	YES	
b2847	yqeI	TU-1499	+		0.0189	0.0004	0.4787	-0.3352				
b2848	yqeJ	TU-1499	+		0.0034	0.0109	0.5829	0.0212				
b2849	yqeK	TU-1500	-	S	0.0011	0.0522	0.7206	0.2915	4			
b2850	ygeF	TU-1501	+		0.0684	0.1493	0.3320	0.0441				
b2851	ygeG	TU-1502	+	S	0.0017	0.0970	0.5585	0.2177	4			
b2852	ygeH	TU-1503	+	S	0.0018	0.3714	0.5902	0.4208	4			
b2853	b2853	TU-1504	+		0.1139	0.0473	0.1941	-0.0975				
b2854	b2854	TU-1505	+	S	0.0001	0.0682	0.8052	0.4167	4			
b2855	ygeK	TU-1506	-	S	0.0000	0.0844	0.6600	0.4032	4			
b2856	b2856	TU-1506	-		0.0026	0.6429	0.5105	0.5894				
b2857	b2857	TU-1507	-	S	0.0015	0.0888	0.4903	0.2007	4			
b2858	b2858	TU-1507	-		0.1958	0.0136	0.2428	-0.3789				
b2859	b2859	TU-1507	-		0.6156	0.9854	-0.0549	-0.0587				
b2860	yi22	TU-1507	-	S	0.0000	0.0135	-0.3561	-0.6067	4			
b2862	b2862	TU-1507	-		0.6077	0.9863	-0.0652	-0.0688				
b2863	b2863	TU-1507	-		0.6590	0.4113	0.0468	0.1641				
b2864	glyU	TU-1508	-		0.0386	0.7259	-0.7463	-0.5494	5	YES	YES	
b2865	b2865	TU-1509	-		0.1281	0.5959	0.1321	0.1892				
b2866	b2866	TU-1510	+		0.0162	0.6503	0.2561	0.3167				
b2867	ygeT	TU-1510	+		0.0897	0.0866	0.1711	0.3668				
b2868	b2868	TU-1510	+		0.0082	0.1357	0.3772	0.6096				
b2869	ygeV	TU-1511	-		0.5826	0.4628	-0.0748	0.0665	5	YES	NO	
b2870	ygeW	TU-1512	+		0.0033	0.4201	0.5371	0.6795	5	NO	NO	
b2871	ygeX	TU-1513	+		0.0022	0.0380	0.2625	0.4556	5	NO	NO	ORF
b2872	ygeY	TU-1513	+		0.0042	0.0440	0.3366	0.6071				
b2873	b2873	TU-1513	+		0.0114	0.3183	0.4477	0.6378	5	NO	NO	ORF
b2874	yqeA	TU-1513	+		0.8578	0.6697	-0.0202	0.0447				
b2875	b2875	TU-1514	-		0.0966	0.3724	0.1705	0.2882				

b2876	b2876	TU-1514	-		0.1650	0.1291	0.1519	0.3675				
b2877	ygfJ	TU-1515	+		0.2267	0.4282	-0.1394	-0.0138				
b2878	b2878	TU-1516	+		0.9872	0.1031	0.0013	0.1861				
b2879	b2879	TU-1516	+		0.2043	0.4276	0.1368	0.2501				
b2880	b2880	TU-1516	+		0.6752	0.1564	0.0288	0.1838				
b2881	b2881	TU-1516	+		0.1355	0.0535	0.1318	0.4190				
b2882	ygfO	TU-1517	+		0.0206	0.0988	0.2451	0.4583				
b2883	ygfP	TU-1517	+		0.0045	0.7173	0.5701	0.5013				
b2884	ygfQ	TU-1517	+		0.0114	0.9308	0.4651	0.4809	5	NO	NO	ORF
b2885	ygfR	TU-1517	+		0.0175	0.1001	0.4335	0.1219				
b2886	ygfS	TU-1518	-	S	0.0011	0.4158	0.6444	0.5079	4			
b2887	ygfT	TU-1518	-		0.0034	0.8767	0.5343	0.5088				
b2888	ygfU	TU-1519	+		0.0052	0.5847	0.5644	0.6676				
b2889	b2889	TU-1520	+		0.8167	0.0906	0.0234	-0.2243				
b2890	lysS	TU-1521	-		0.0166	0.0570	0.2546	0.0010				
b2891	prfB	TU-1521	-		0.0101	0.0342	0.2475	0.0210				
b2892	recJ	TU-1522	-	S	0.0013	0.0545	0.4837	0.2258	4			
b2893	dsbC	TU-1522	-	S	0.0001	0.0699	0.6088	0.3567	4			
b2894	xerD	TU-1522	-		0.0048	0.0517	0.3938	0.1280				
b2895	fldB	TU-1523	+		0.0036	0.0858	0.2443	0.0822				
b2896	b2896	TU-1524	-		0.0027	0.1149	0.2626	0.1218				
b2897	ygfY	TU-1524	-		0.5398	0.0131	-0.0439	-0.3139				
b2898	ygfZ	TU-1525	+		0.0210	0.0033	-0.1452	-0.4138				
b2899	b2899	TU-1526	-		0.5062	0.1766	0.0624	0.2388				
b2900	yqfB	TU-1527	-	S	0.0000	0.0068	0.5488	0.2054	4			
b2901	bglA	TU-1528	+		0.5721	0.8531	0.0580	0.0292	5	YES	YES	
b2902	ygfF	TU-1529	-	S	0.0011	0.5476	0.4100	0.4870	4			
b2903	gcvP	TU-1530	-		0.1324	0.0091	-0.1185	0.2036	5	NO	NO	ORF
b2904	gcvH	TU-1530	-	S	0.0009	0.7618	0.2006	0.2487	1			
b2905	gcvT	TU-1530	-	S	0.0007	0.1683	0.2851	0.0941	1	YES	YES	
b2906	visC	TU-1531	-	S	0.0000	0.2105	0.2527	0.4155	4			
b2907	ubiH	TU-1531	-		0.9411	0.2575	0.0035	0.0991				
b2908	pepP	TU-1531	-	S	0.0002	0.6641	-0.2540	-0.2097	1	NO	NO	ORF
b2909	ygfB	TU-1531	-		0.7001	0.8561	-0.0487	-0.0746				
b2910	ygfE	TU-1532	+		0.0343	0.9046	-0.1126	-0.1291				
b2911	ssrS	TU-1532	+		0.0164	0.5583	0.7932	0.5251				
b2912	ygfA	TU-1532	+		0.4352	0.3918	0.0849	-0.0469				
b2913	serA	TU-1533	-	S	0.0015	0.5706	-0.2850	-0.3344	4			
b2914	rpiA	TU-1534	-		0.0055	0.8985	-0.3855	-0.4015				
b2915	yqfE	TU-1534	-		0.4851	0.1181	0.0565	0.2550				
b2916	iciA	TU-1535	+		0.0674	0.8310	-0.2010	-0.1729				
b2917	sbm	TU-1536	+		0.1645	0.0429	0.1564	0.4688				
b2918	ygfD	TU-1536	+		0.6964	0.0454	0.0344	0.3123				
b2919	ygfG	TU-1536	+		0.0049	0.8828	0.2042	0.1901				
b2920	ygfH	TU-1536	+	S	0.0001	0.1437	0.6338	0.4375	4			
b2921	ygfI	TU-1537	-		0.0051	0.4102	0.3904	0.2592				
b2922	yggE	TU-1538	-		0.1151	0.1444	-0.2787	-0.6364				
b2923	yggA	TU-1538	-		0.7660	0.2871	0.0372	-0.1419				
b2924	yggB	TU-1539	-		0.0055	0.5924	-0.6068	-0.4870	5	YES	YES	
b2925	fba	TU-1540	-		0.2372	0.4189	-0.1796	-0.3181				
b2926	pgk	TU-1541	-		0.4310	0.1373	-0.1139	-0.3640	5	YES	YES	
b2927	epd	TU-1541	-		0.0146	0.3014	-0.3894	-0.2168	5	YES	YES	
b2928	yggC	TU-1542	-		0.1190	0.1025	0.1678	-0.0232				
b2929	yggD	TU-1542	-		0.1309	0.0245	0.2320	-0.1909				
b2930	yggF	TU-1542	-	S	0.0010	0.5371	0.4998	0.5801	4			
b2931	b2931	TU-1542	-		0.0038	0.4686	0.3093	0.3955				
b2932	yggP	TU-1542	-		0.0051	0.2305	0.3347	0.1786				
b2933	cmtA	TU-1542	-		0.0025	0.7159	0.6139	0.6819				
b2934	cmtB	TU-1542	-		0.0054	0.2425	0.4482	0.2624				
b2935	tktA	TU-1543	-		0.5492	0.1841	0.0561	-0.1686				
b2936	yggG	TU-1544	+	S	0.0007	0.8419	0.2950	0.2709	4	NO	NO	IG2
b2937	speB	TU-1545	-	S	0.0003	0.0022	0.3543	0.0178	4	NO	NO	IG2
b2938	speA	TU-1545	-		0.3313	0.2308	0.0775	-0.0340				

b#	gene	TU	strand	S	S2	v1	v2	v3	v4	n	c1	c2	ORF
b2939	yqgB	TU-1546	-			0.9283	0.0658	0.0171	-0.4324				
b2940	yqgC	TU-1547	+			0.3357	0.6270	0.0979	0.1635	5	YES	YES	
b2941	yqgD	TU-1548	-			0.0300	0.3728	0.3270	0.4778				
b2942	metK	TU-1549	+			0.6777	0.2830	-0.0450	-0.2064				
b2943	galP	TU-1550	+			0.0157	0.2415	0.2829	0.0996				
b2944	sprT	TU-1550	+			0.8362	0.0631	-0.0098	0.1405				
b2945	endA	TU-1551	+			0.0078	0.6820	0.3002	0.3461	5	NO	NO	
b2946	yggJ	TU-1552	+			0.6127	0.5355	-0.0984	-0.2275				
b2947	gshB	TU-1552	+			0.0040	0.3817	0.2108	0.3225				
b2948	yqgE	TU-1552	+	S		0.0000	0.8507	0.3813	0.3655	4			
b2949	yqgF	TU-1552	+	S		0.0010	0.0820	0.4019	0.1576	4			
b2950	yggR	TU-1553	-			0.0455	0.0538	0.2570	0.5476				
b2951	yggS	TU-1554	+			0.3534	0.8207	-0.0819	-0.1156				
b2952	yggT	TU-1554	+			0.0455	0.7478	-0.3207	-0.2558				
b2953	yggU	TU-1554	+			0.4981	0.5194	-0.0863	0.0384				
b2954	yggV	TU-1554	+			0.1450	0.3328	-0.1218	0.0166	5	NO	NO	ORF
b2955	yggW	TU-1554	+			0.5449	0.3574	-0.0681	0.0811				
b2956	yggM	TU-1555	-	S		0.0001	0.0827	0.7276	0.3363	4			
b2957	ansB	TU-1556	-			0.0025	0.0607	0.5964	0.1467				
b2958	yggN	TU-1557	-	S		0.0001	0.0178	0.4683	0.2036	4			
b2959	yggL	TU-1557	-			0.6797	0.2573	-0.0543	-0.2535				
b2960	yggH	TU-1557	-			0.3336	0.2993	0.1479	-0.0187				
b2961	mutY	TU-1558	+	S		0.0002	0.1548	0.5961	0.3874	1	YES	YES	
b2962	yggX	TU-1558	+	S		0.0000	0.0017	0.6185	0.2865	1	NO	NO	ORF
b2963	mltC	TU-1558	+	S		0.0001	0.2738	0.5150	0.3846	1			
b2964	nupG	TU-1559	+			0.0228	0.3973	0.2650	0.1643				
b2965	speC	TU-1560	-	S		0.0003	0.0986	0.4337	0.1505	4			
b2966	yqgA	TU-1561	+			0.0266	0.1105	0.2521	0.0662				
b2967	pheV	TU-1562	+			0.0136	0.5799	0.5830	0.4369	5	YES	YES	
b2968	yghD	TU-1563	-	S		0.0002	0.1164	0.4643	0.2645	1			
b2969	yghE	TU-1563	-			0.0932	0.1420	0.1149	-0.0005	5			
b2970	b2970	TU-1563	-			0.0037	0.6229	0.2888	0.3436	5	YES	NO	
b2971	b2971	TU-1564	-			0.3993	0.4239	0.0934	-0.0235				
b2972	b2972	TU-1565	-			0.1807	0.9305	0.1184	0.1345				
b2973	b2973	TU-1565	-			0.0031	0.9730	0.1915	0.1885				
b2974	b2974	TU-1565	-			0.0995	0.4178	-0.1080	-0.0122				
b2975	yghK	TU-1566	-			0.3111	0.6773	0.0924	0.1372	5			
b2976	glcB	TU-1566	-			0.5796	0.0810	-0.0676	0.2085	5	NO	NO	ORF
b2977	glcG	TU-1566	-			0.1832	0.1122	0.1408	0.3564	5			
b2978	glcF	TU-1566	-			0.3391	0.0429	-0.0994	0.2158	5	NO	NO	ORF
b2979	glcD	TU-1566	-			0.4588	0.0290	0.0733	0.4201	5	YES	NO	
b2980	glcC	TU-1567	+		S	0.0063	0.0000	-0.3997	0.3562	5	YES	NO	
b2981	b2981	TU-1568	-			0.0384	0.0577	0.2184	0.4782				
b2983	yghQ	TU-1569	-			0.1277	0.0333	0.1580	0.4463				
b2984	yghR	TU-1570	-			0.0236	0.8747	0.3839	0.4114				
b2985	yghS	TU-1570	-	S		0.0011	0.1567	0.3968	0.5577	4			
b2986	yghT	TU-1571	+			0.0097	0.6158	0.3317	0.4013				
b2987	pitB	TU-1572	-			0.0259	0.2562	0.2831	0.0855	5	YES	YES	
b2988	gsp	TU-1573	-			0.0155	0.5973	0.2166	0.1533	5	YES	YES	
b2989	b2989	TU-1574	+			0.2461	0.4358	-0.1716	-0.0178	5	YES	YES	
b2990	hybG	TU-1575	-			0.3340	0.8638	-0.1328	-0.1017				
b2991	hybF	TU-1575	-			0.1523	0.4702	-0.1169	-0.2291				
b2992	hybE	TU-1575	-			0.5927	0.3908	-0.0611	-0.2801				
b2993	hybD	TU-1575	-			0.0252	0.7128	0.1631	0.2209				
b2994	hybC	TU-1575	-			0.0974	0.0563	0.3894	-0.1709				
b2995	hybB	TU-1575	-			0.0297	0.1135	0.5361	-0.0125				
b2996	hybA	TU-1575	-	S		0.0019	0.0180	0.6620	0.0408	4			
b2997	b2997	TU-1575	-			0.4480	0.0829	0.1017	-0.3859				
b2998	b2998	TU-1576	-	S		0.0006	0.3278	0.6199	0.4588	4			
b2999	b2999	TU-1577	-	S		0.0000	0.5503	0.6393	0.5564	1			
b3000	b3000	TU-1577	-	S		0.0000	0.5347	0.7822	0.6241	1	NO	NO	
b3001	b3001	TU-1578	+			0.0058	0.8767	0.2635	0.2491	5	NO	NO	
b3002	yqhA	TU-1579	-			0.0520	0.8937	0.2443	0.2247				

b3003	yghA	TU-1580	+		0.0360	0.0142	-0.3352	0.2017				
b3004	b3004	TU-1581	+		0.1419	0.0251	0.2139	0.5959				
b3005	exbD	TU-1582	-		0.3039	0.4229	0.2496	-0.0638	5	NO	NO	ORF
b3006	exbB	TU-1582	-		0.3787	0.1627	0.2297	-0.2944				
b3007	b3007	TU-1582	-		0.0137	0.0615	0.4989	-0.2224				
b3008	metC	TU-1583	+		0.0851	0.0278	0.1342	-0.1169				
b3009	yghB	TU-1584	+		0.0025	0.0188	0.2133	0.0084				
b3010	yqhC	TU-1585	-		0.0179	0.4322	0.2134	0.1351	5	YES	YES	
b3011	yqhD	TU-1586	+		0.1352	0.1103	0.5476	-0.0451	5	YES	YES	
b3012	yqhE	TU-1586	+	S	0.0019	0.0938	-0.5160	-0.1392	1			
b3013	yqhG	TU-1587	+		0.1750	0.9013	0.1824	0.2026				
b3014	yqhH	TU-1587	+		0.0117	0.9440	0.3624	0.3528	5	NO	NO	ORF
b3015	b3015	TU-1588	-	S	0.0003	0.6377	0.6968	0.6190	4			
b3016	ygiR	TU-1588	-	S	0.0000	0.1004	0.8241	0.5676	4			
b3017	sufI	TU-1589	-	S	0.0000	0.3023	0.4385	0.5134	1	NO	NO	
b3018	plsC	TU-1589	-		0.2545	0.8474	-0.0998	-0.0777				
b3019	parC	TU-1590	-		0.0460	0.0978	-0.1145	0.0061				
b3020	b3020	TU-1591	-		0.2514	0.4176	0.2818	0.5619				
b3021	b3021	TU-1592	-		0.0071	0.2797	-0.2289	-0.0949				
b3022	b3022	TU-1592	-	S	0.0000	0.4782	-0.6314	-0.7440	4			
b3023	b3023	TU-1593	-		0.5765	0.0341	0.0546	0.3430				
b3024	ygiW	TU-1593	-	S	0.0003	0.8647	-0.4759	-0.4471	4			
b3025	ygiX	TU-1594	+		0.0502	0.0739	0.1448	0.3434				
b3026	ygiY	TU-1594	+		0.2211	0.1066	0.1584	0.4067				
b3027	b3027	TU-1595	-		0.3820	0.1576	0.1217	0.3887	5	NO	NO	ORF
b3028	mdaB	TU-1596	+		0.2927	0.6178	-0.1468	-0.2289	5	YES	YES	
b3029	ygiN	TU-1596	+	S	0.0000	0.1713	-0.3127	-0.5189	1			
b3030	parE	TU-1597	-		0.0161	0.0119	0.4208	-0.0706				
b3031	yqiA	TU-1597	-		0.1265	0.0137	0.4570	-0.3605				
b3032	icc	TU-1597	-		0.7160	0.0136	-0.0870	-0.8155				
b3033	yqiB	TU-1597	-		0.0851	0.0593	0.3147	-0.0871				
b3034	yqiE	TU-1597	-	S	0.0017	0.5048	0.4243	0.3322	4			
b3035	tolC	TU-1598	+		0.0334	0.0395	0.3115	-0.0326				
b3036	ygiA	TU-1598	+		0.7526	0.0162	0.0873	-0.8029	5	NO	YES	
b3037	ygiB	TU-1598	+	S	0.0012	0.0677	0.4371	0.1793	4			
b3038	ygiC	TU-1598	+		0.6794	0.0207	0.0624	-0.4629				
b3039	ygiD	TU-1599	-		0.0092	0.6288	0.4906	0.3924				
b3040	ygiE	TU-1600	+		0.6446	0.4413	-0.0437	-0.1372				
b3041	ribB	TU-1601	-		0.9648	0.0354	0.0039	-0.3604				
b3042	b3042	TU-1602	+	S	0.0001	0.1410	0.5552	0.3306	1	YES	YES	
b3043	ygiL	TU-1603	+	S	0.0000	0.1086	0.4968	0.3103	4			
b3044	yi21	TU-1604	+	S	0.0008	0.0549	-0.2645	-0.4682	4			
b3046	yqiG	TU-1604	+		0.0038	0.6852	0.4676	0.4059				
b3047	yqiH	TU-1604	+	S	0.0011	0.0778	0.5129	0.2239	4			
b3048	yqiI	TU-1604	+	S	0.0015	0.6764	0.5364	0.4656	4			
b3049	glgS	TU-1605	-	S	0.0000	0.0768	-1.4620	-0.7764	4			
b3050	b3050	TU-1606	+	S	0.0008	0.5628	0.5756	0.4733	4			
b3051	b3051	TU-1606	+		0.0307	0.4495	0.3535	0.4924	5	NO	NO	ORF
b3052	b3052	TU-1607	-		0.8717	0.2966	-0.0116	-0.1150				
b3053	glnE	TU-1607	-		0.2648	0.5964	-0.1107	-0.0365				
b3054	ygiF	TU-1607	-		0.0875	0.0574	0.0964	-0.0652				
b3055	ygiM	TU-1608	+		0.6522	0.0010	0.0379	-0.4326				
b3056	cca	TU-1608	+		0.2532	0.6718	0.0670	0.1085				
b3057	bacA	TU-1609	-		0.7147	0.0741	-0.0242	0.1337				
b3058	ygiG	TU-1609	-		0.1729	0.9635	0.2085	0.2162				
b3059	ygiH	TU-1610	+		0.1097	0.8522	-0.2001	-0.2275				
b3060	ygiP	TU-1611	-		0.0655	0.6067	0.2089	0.1457				
b3061	ttdA	TU-1612	+		0.0091	0.8345	0.2571	0.2798				
b3062	ttdB	TU-1612	+		0.0110	0.5891	0.4021	0.4866				
b3063	ygjE	TU-1613	+		0.7321	0.2545	-0.0312	0.0956				
b3064	ygjD	TU-1614	-		0.0789	0.6808	0.1009	0.1409				
b3065	rpsU	TU-1615	+		0.1116	0.4291	-0.2566	-0.4369				
b3066	dnaG	TU-1615	+		0.4661	0.4112	-0.0730	0.0551				

b3067	rpoD	TU-1615	+			0.2361	0.2715	-0.1407	0.0466			
b3068	ygjF	TU-1616	-	S		0.0001	0.0133	0.4770	0.1455	4		
b3069	ileX	TU-1617	+			0.2004	0.0393	0.1821	0.5760	5	YES	YES
b3070	yqjH	TU-1618	-			0.0545	0.7647	0.4481	0.3738			
b3071	yqjI	TU-1619	+			0.0064	0.3181	0.5676	0.3582			
b3072	aer	TU-1620	-			0.0603	0.1689	0.3027	0.0584	5	YES	YES
b3073	ygjG	TU-1621	+			0.0827	0.0093	-0.3265	0.3110	5	YES	YES
b3074	ygjH	TU-1622	-	S		0.0010	0.4214	0.5789	0.7101	4		
b3075	ebgR	TU-1623	+			0.1013	0.9533	0.2469	0.2560			
b3076	ebgA	TU-1624	+	S		0.0003	0.6274	0.5027	0.4490	4		
b3077	ebgC	TU-1624	+	S		0.0005	0.6374	0.6306	0.5571	4		
b3078	ygjI	TU-1625	+			0.0078	0.3508	0.4095	0.2614			
b3079	ygjJ	TU-1626	+			0.0044	0.3145	0.3583	0.2274			
b3080	ygjK	TU-1626	+			0.0021	0.9565	0.4720	0.4793			
b3081	ygjL	TU-1627	+	S		0.0004	0.4732	0.3083	0.3699	4		
b3082	ygjM	TU-1628	-			0.0049	0.9645	0.3091	0.3138			
b3083	ygjN	TU-1628	-			0.9334	0.0596	0.0105	-0.3428			
b3084	ygjO	TU-1629	-	S		0.0002	0.0360	0.5235	0.2713	4		
b3085	ygjP	TU-1630	+	S	S	0.0000	0.0000	0.2880	-0.0934	4		
b3086	ygjQ	TU-1630	+			0.0061	0.5894	0.3264	0.4030			
b3087	ygjR	TU-1630	+			0.0555	0.4433	0.2102	0.0908			
b3088	ygjT	TU-1631	+	S		0.0001	0.2967	0.3198	0.2193	4		
b3089	ygjU	TU-1632	+			0.0022	0.2378	-0.2739	-0.4648	5	YES	YES
b3090	ygjV	TU-1633	-			0.1630	0.7632	0.2026	0.1531			
b3091	uxaA	TU-1633	-			0.0109	0.2572	0.3572	0.5421			
b3092	uxaC	TU-1633	-			0.5425	0.0348	-0.0471	0.2009			
b3093	exuT	TU-1634	+			0.3273	0.0849	-0.0986	0.1014			
b3094	exuR	TU-1635	+			0.2923	0.0344	0.1354	0.4677			
b3095	yqjA	TU-1636	+			0.1436	0.2313	-0.1301	-0.0051			
b3096	yqjB	TU-1636	+			0.8219	0.8343	-0.0143	0.0045			
b3097	yqjC	TU-1637	+			0.0393	0.0900	-0.2971	0.1364			
b3098	yqjD	TU-1637	+	S		0.0000	0.0294	-0.7464	-0.3365	4		
b3099	yqjE	TU-1637	+	S		0.0000	0.0329	-1.2613	-0.8377	4		
b3100	b3100	TU-1637	+	S		0.0000	0.0037	-0.8069	-0.3615	4		
b3101	yqjF	TU-1638	+			0.5643	0.0929	0.0361	0.2571			
b3102	yqjG	TU-1638	+	S		0.0002	0.0122	-0.3807	-0.0455	4		
b3103	yhaH	TU-1639	+	S		0.0001	0.0500	-0.5560	-0.2563	1	YES	YES
b3104	yhaI	TU-1640	+			0.2081	0.0508	-0.1089	0.1290			
b3105	yhaJ	TU-1641	-			0.2233	0.4887	0.1721	0.0568			
b3106	yhaK	TU-1642	+	S		0.0005	0.0756	0.7678	0.4373	4		
b3107	yhaL	TU-1642	+	S		0.0021	0.2995	0.8781	0.6232	4		
b3108	yhaM	TU-1643	-			0.0131	0.0757	0.4095	0.1291			
b3109	yhaN	TU-1644	-			0.0066	0.1507	0.4500	0.2309			
b3110	yhaO	TU-1644	-			0.0043	0.4062	0.5643	0.4187			
b3111	yhaP	TU-1645	-			0.0051	0.7376	0.4634	0.5136			
b3112	yhaQ	TU-1646	-			0.0618	0.7383	0.3132	0.3691			
b3113	yhaR	TU-1646	-	S		0.0015	0.7094	0.3512	0.3919	4		
b3114	tdcE	TU-1646	-			0.0089	0.7414	0.3405	0.2999			
b3115	tdcD	TU-1646	-			0.1245	0.7607	0.2523	0.3113			
b3116	tdcC	TU-1646	-			0.5804	0.7284	0.0737	0.1231	5	NO	NO
b3117	tdcB	TU-1646	-	S		0.0009	0.8678	0.5207	0.4977	4		
b3118	tdcA	TU-1646	-	S		0.0003	0.5225	0.6004	0.4915	4		
b3119	tdcR	TU-1647	+	S		0.0003	0.0199	0.5941	0.1009	4		
b3120	yhaB	TU-1648	+			0.0028	0.1205	0.5342	0.2448	5	YES	YES
b3121	yhaC	TU-1648	+			0.0025	0.1118	0.4730	0.1896	5		
b3123	rnpB	TU-1649	-			0.0661	0.5932	-0.1338	-0.0852			
b3124	yhaD	TU-1649	-			0.0691	0.4199	0.2962	0.4530			
b3125	yhaE	TU-1649	-			0.0746	0.4939	0.2280	0.3355			
b3126	yhaF	TU-1649	-			0.0052	0.6392	0.3438	0.2841			
b3127	yhaU	TU-1649	-			0.0226	0.2145	0.4117	0.6650			
b3128	yhaG	TU-1650	+			0.0237	0.2312	0.2904	0.4609			
b3129	sohA	TU-1651	+			0.0048	0.2013	0.2127	-0.0139	5	YES	NO
b3130	yhaV	TU-1651	+			0.0648	0.0173	0.1894	-0.3178	5		

b3131	agaR	TU-1652	-		0.0992	0.6733	-0.1083	-0.0582				
b3132	agaZ	TU-1653	+		0.0299	0.2320	0.2633	0.4211				
b3133	agaV	TU-1653	+		0.0963	0.1110	0.1658	0.3840				
b3134	agaW	TU-1653	+		0.0021	0.7354	0.2378	0.2752				
b3135	agaA	TU-1653	+		0.0240	0.0553	0.2276	0.4559				
b3136	agaS	TU-1654	+		0.0190	0.1353	0.2571	0.4506				
b3137	agaY	TU-1654	+		0.0560	0.1738	0.2967	0.5331				
b3138	agaB	TU-1655	+		0.8153	0.6102	0.0290	0.1032				
b3139	agaC	TU-1655	+		0.5048	0.2832	0.0425	0.1706				
b3140	agaD	TU-1655	+		0.6342	0.0717	-0.0254	0.1884				
b3141	agaI	TU-1655	+		0.0506	0.3003	0.1891	0.3430				
b3142	yraH	TU-1656	+	S	0.0000	0.7118	0.5526	0.5086	4			
b3143	yraI	TU-1657	+	S	0.0008	0.0086	0.8979	0.2371	4			
b3144	yraJ	TU-1657	+	S	0.0016	0.2708	0.9230	0.6414	4			
b3145	yraK	TU-1657	+		0.0040	0.7374	0.5701	0.5102				
b3146	yraL	TU-1658	-	S	0.0005	0.2588	0.6238	0.4638	4			
b3147	yraM	TU-1659	+		0.0685	0.1411	0.3197	0.0369				
b3148	yraN	TU-1659	+		0.0030	0.1836	0.5321	0.3178				
b3149	yraO	TU-1659	+		0.2714	0.0290	0.1378	-0.2033				
b3150	yraP	TU-1659	+	S	0.0005	0.0657	0.5919	0.3131	4			
b3151	yraQ	TU-1660	-		0.4156	0.9483	0.1431	0.1636				
b3152	yraR	TU-1660	-		0.0056	0.7365	0.3488	0.3940				
b3153	yhbO	TU-1661	+		0.0322	0.4199	-0.2307	-0.0855				
b3154	yhbP	TU-1662	-		0.0104	0.2480	0.2637	0.1343				
b3155	yhbQ	TU-1663	+		0.0419	0.1781	0.1028	-0.0069				
b3156	yhbS	TU-1664	-	S	0.0016	0.0967	0.3835	0.2034	4			
b3157	yhbT	TU-1664	-		0.1040	0.9142	0.1717	0.1837				
b3158	yhbU	TU-1665	+	S	0.0009	0.0825	0.5452	0.2872	4			
b3159	yhbV	TU-1665	+	S	0.0001	0.0239	0.6004	0.3453	4			
b3160	yhbW	TU-1666	+		0.0041	0.5912	-0.3549	-0.2764	5	NO	NO	ORF
b3161	mtr	TU-1667	-		0.0639	0.6489	0.1825	0.2471				
b3162	deaD	TU-1668	-		0.6778	0.6919	0.0400	-0.0152	5	NO	NO	ORF
b3163	yhbM	TU-1668	-		0.0568	0.7233	0.2591	0.2029				
b3164	pnp	TU-1669	-		0.8545	0.6324	0.0210	-0.0424				
b3165	rpsO	TU-1670	-		0.0166	0.9722	-0.3821	-0.3894				
b3166	truB	TU-1671	-		0.0252	0.7712	0.1722	0.1298				
b3167	rbfA	TU-1671	-		0.0257	0.6600	0.2076	0.1568				
b3168	infB	TU-1672	-		0.0247	0.0360	-0.2840	-0.6159				
b3169	nusA	TU-1672	-		0.7319	0.6718	0.0331	-0.0157	5	NO	YES	ORF
b3170	yhbC	TU-1673	-		0.1036	0.9631	-0.1474	-0.1421				
b3171	metY	TU-1674	-		0.3502	0.2160	0.0861	0.3083	5	YES	YES	
b3172	argG	TU-1675	+		0.0968	0.2241	-0.4460	-0.8033				
b3173	yhbX	TU-1676	-		0.7670	0.3815	-0.0215	0.0789				
b3174	leuU	TU-1677	-		0.6734	0.1356	0.0828	0.5981	5			
b3175	secG	TU-1677	-	S	0.0004	0.2416	-0.5325	-0.3314	1	YES	YES	
b3176	mrsA	TU-1678	-		0.0098	0.8775	-0.2489	-0.2302				
b3177	folP	TU-1678	-		0.0344	0.7963	-0.4136	-0.4730	5	NO	NO	ORF
b3178	hflB	TU-1679	-	S	0.0003	0.6487	-0.5843	-0.6581	4			
b3179	ftsJ	TU-1679	-	S	0.0000	0.1990	-0.4711	-0.3396	4			
b3180	yhbY	TU-1680	+		0.1086	0.0775	0.3841	-0.0699				
b3181	greA	TU-1681	-		0.0287	0.0980	0.4896	0.0909				
b3182	dacB	TU-1682	+		0.0508	0.0891	0.5359	0.0437				
b3183	yhbZ	TU-1683	-	S	0.0000	0.2469	0.7614	0.6007	4			
b3184	yhbE	TU-1683	-	S	0.0014	0.0206	0.6271	0.1512	1	NO	YES	ORF
b3185	rpmA	TU-1684	-		0.0919	0.7455	0.1691	0.1252				
b3186	rplU	TU-1684	-		0.4300	0.0341	-0.0586	-0.2757				
b3187	ispB	TU-1685	+		0.0152	0.0660	0.3143	0.0346				
b3188	nlp	TU-1686	+		0.0953	0.0928	0.1266	-0.0750				
b3189	murA	TU-1687	-	S	0.0004	0.3276	0.5462	0.3745	1	NO	NO	
b3190	yrbA	TU-1687	-	S	0.0013	0.0616	0.4601	0.2123	1			
b3191	yrbB	TU-1687	-		0.4512	0.2498	0.0694	-0.0767	5			
b3192	yrbC	TU-1687	-		0.0215	0.1103	-0.2078	-0.3632	5	YES	NO	
b3193	yrbD	TU-1687	-	S	0.0010	0.0058	0.3030	0.0415	1			

b3194	yrbE	TU-1687	-		0.2324	0.0264	0.1384	-0.2620	5			
b3195	yrbF	TU-1687	-		0.0044	0.0739	0.3271	0.1015	5	YES	YES	
b3196	yrbG	TU-1688	+		0.8470	0.2008	-0.0119	-0.1316	5	YES	YES	
b3197	yrbH	TU-1688	+	S	0.0013	0.1127	0.1494	0.0037	1			
b3198	yrbI	TU-1688	+		0.0173	0.9914	0.1610	0.1618	5			
b3199	yrbK	TU-1688	+		0.0169	0.0470	-0.3176	-0.5926	5			
b3200	yhbN	TU-1688	+		0.0795	0.3677	-0.1907	-0.3093	5			
b3201	yhbG	TU-1688	+		0.2501	0.0616	0.0631	0.2364	5			
b3202	rpoN	TU-1689	+	S	0.0008	0.1504	-0.3275	-0.1056	4			
b3203	yhbH	TU-1689	+		0.0027	0.5294	-0.4652	-0.3262				
b3204	ptsN	TU-1689	+		0.4700	0.8140	-0.0438	-0.0219				
b3205	yhbJ	TU-1689	+	S	0.0011	0.3287	-0.3063	-0.4043	4			
b3206	ptsO	TU-1689	+		0.0620	0.9642	-0.1244	-0.1280				
b3207	yrbL	TU-1690	+		0.0309	0.2810	-0.3545	-0.1347	5	YES	YES	
b3208	mtgA	TU-1691	-		0.5259	0.1687	-0.0386	0.0675				
b3209	yhbL	TU-1691	-		0.3157	0.2025	-0.0692	0.1183				
b3210	arcB	TU-1691	-		0.1360	0.3741	0.2027	0.3706				
b3211	yhcC	TU-1692	-		0.2332	0.2301	0.1243	0.2888	5	YES	YES	
b3212	gltB	TU-1693	+	S	0.0001	0.9062	-0.4350	-0.4232	1	YES	YES	
b3213	gltD	TU-1693	+	S	0.0010	0.3718	-0.3794	-0.2655	1			
b3214	gltF	TU-1693	+	S	0.0017	0.6738	0.4483	0.3840	1			
b3215	yhcA	TU-1694	+		0.3826	0.5052	0.1803	0.0211	5	NO	NO	
b3216	yhcD	TU-1694	+		0.4577	0.3533	0.0660	-0.0681	5	YES	YES	
b3217	yhcE	TU-1694	+		0.1648	0.0776	0.2570	-0.1115	5	NO	NO	IG2
b3219	yhcF	TU-1695	+		0.0191	0.0735	0.5516	0.1039	5	NO	YES	ORF
b3220	yhcG	TU-1696	+	S	0.0008	0.5726	0.6420	0.5478	4	NO	NO	IG2
b3221	yhcH	TU-1697	-		0.6190	0.7639	0.0586	0.1211	3	NO	NO	IG2
b3222	yhcI	TU-1697	-		0.0460	0.5626	0.2493	0.3380				
b3223	yhcJ	TU-1697	-		0.0154	0.6286	0.2901	0.3458				
b3224	nanT	TU-1697	-		0.0026	0.6184	0.3791	0.4346				
b3225	nanA	TU-1697	-	S	0.0003	0.8362	0.4317	0.4517	1	NO	NO	ORF
b3226	yhcK	TU-1698	-		0.4169	0.0946	0.1062	-0.2119				
b3227	yhcL	TU-1699	+		0.0526	0.5941	0.2940	0.3748				
b3228	sspB	TU-1700	-		0.1089	0.3679	-0.2150	-0.4032	5			
b3229	sspA	TU-1700	-	S	0.0002	0.0519	-0.4516	-0.7412	1	YES	YES	
b3230	rpsI	TU-1701	-		0.0030	0.0709	-0.4282	-0.7207				
b3231	rplM	TU-1701	-		0.1049	0.5255	-0.0674	-0.1034				
b3232	yhcM	TU-1702	-		0.0048	0.3802	0.3892	0.2648				
b3233	yhcB	TU-1703	+		0.0069	0.6777	-0.1866	-0.1418				
b3234	degQ	TU-1704	+		0.4208	0.8675	-0.0670	-0.0499				
b3235	degS	TU-1704	+		0.3051	0.3434	0.0780	-0.0255				
b3236	mdh	TU-1705	-		0.0074	0.0016	-0.2332	0.1536	5	YES	YES	
b3237	argR	TU-1706	+		0.6383	0.1554	0.0422	-0.1848	5	YES	YES	
b3238	yhcN	TU-1707	+		0.6483	0.5932	0.0775	0.2068				
b3239	yhcO	TU-1708	-		0.0315	0.1609	-0.4912	0.0910	5	YES	NO	
b3240	yhcP	TU-1709	-		0.0095	0.2076	0.5026	0.7463	5			
b3241	yhcQ	TU-1709	-		0.0074	0.5955	0.3252	0.3976	5			
b3242	yhcR	TU-1709	-		0.9140	0.0882	-0.0085	0.1663	5	YES	YES	
b3243	yhcS	TU-1710	+	S	0.0003	0.3289	-0.3095	-0.2054	1	YES	YES	
b3244	tldD	TU-1711	-		0.4947	0.6651	0.0441	0.0842				
b3245	yhdP	TU-1711	-		0.0944	0.1080	0.1715	0.3719				
b3246	yhdR	TU-1711	-		0.3969	0.0648	0.0793	0.2946				
b3247	cafA	TU-1712	-		0.7353	0.2769	-0.0282	0.0971	5			
b3248	yhdE	TU-1712	-		0.7566	0.5372	-0.0309	-0.1031	5			
b3249	mreD	TU-1712	-		0.0491	0.1118	-0.3662	-0.6998	5			
b3250	mreC	TU-1712	-		0.6835	0.1828	0.0482	-0.1924	5			
b3251	mreB	TU-1712	-		0.1336	0.8923	0.1444	0.1678	5	YES	YES	
b3252	yhdA	TU-1713	-		0.0720	0.1666	0.3328	0.0235				
b3253	yhdH	TU-1714	+		0.9262	0.1677	0.0241	-0.3944				
b3254	b3254	TU-1715	-		0.0250	0.1123	0.5546	0.1279	5	YES	YES	
b3255	accB	TU-1716	+		0.2252	0.0009	0.1730	-0.3868				
b3256	accC	TU-1716	+		0.1002	0.0825	-0.4292	-0.9094				
b3257	yhdT	TU-1717	+	S	0.0013	0.3979	0.4568	0.3207	4			

b3258	panF	TU-1717	+		0.0056	0.0009	0.3756	-0.1762				
b3259	prmA	TU-1717	+	S	0.0006	0.0084	0.4213	0.1098	4			
b3260	yhdG	TU-1718	+	S	0.0002	0.2025	-0.8052	-0.4779	1	YES	YES	
b3261	fis	TU-1718	+	S	0.0000	0.6331	-4.2931	-4.1649	1			
b3262	yhdJ	TU-1719	+		0.0052	0.6247	0.3149	0.2562				
b3263	yhdU	TU-1719	+	S	0.0014	0.1246	0.3840	0.1496	4			
b3264	envR	TU-1720	-		0.0237	0.8868	0.4499	0.4141				
b3265	acrE	TU-1721	+	S	0.0005	0.6807	0.5349	0.4723	4			
b3266	acrF	TU-1721	+	S	0.0009	0.9141	0.5484	0.5665	1	NO	NO	ORF
b3267	yhdV	TU-1722	+	S	0.0001	0.9591	0.5740	0.5675	4			
b3268	yhdW	TU-1723	+		0.1692	0.5522	0.2430	0.3914				
b3269	yhdX	TU-1723	+		0.0054	0.5932	0.4075	0.3326	5	NO	NO	
b3270	yhdY	TU-1724	+		0.0353	0.5718	0.2805	0.1958				
b3271	yhdZ	TU-1724	+		0.0066	0.5928	0.5257	0.4196				
b3272	rrfF	TU-1725	-		0.7693	0.6990	-0.0307	0.0365				
b3273	thrV	TU-1725	-		0.7512	0.3737	-0.0631	-0.3740				
b3274	rrfD	TU-1725	-		0.0661	0.9554	-0.1066	-0.1010				
b3275	rrlD	TU-1725	-		0.7956	0.4544	-0.0394	0.0961				
b3276	alaU	TU-1725	-		0.0190	0.0048	-0.2376	0.3028				
b3277	ileU	TU-1725	-		0.0060	0.9769	-0.3276	-0.3222				
b3279	yrdA	TU-1726	-		0.1091	0.9702	-0.1843	-0.1788				
b3280	yrdB	TU-1727	+		0.4016	0.1879	-0.1031	-0.3637				
b3281	aroE	TU-1727	-		0.0279	0.9705	-0.2474	-0.2415				
b3282	yrdC	TU-1727	-		0.1718	0.2665	0.1582	0.0024				
b3283	yrdD	TU-1727	-		0.1486	0.3010	0.0894	-0.0104				
b3284	smg	TU-1727	-		0.3472	0.2461	-0.1201	0.0965				
b3285	smf	TU-1727	-	S	0.0006	0.7397	-0.4189	-0.4623	4			
b3286	smf	TU-1727	-		0.0077	0.2646	0.3495	0.5002				
b3287	def	TU-1728	+		0.8606	0.8396	-0.0191	-0.0463				
b3288	fmt	TU-1728	+		0.0707	0.0399	-0.2914	-0.6615				
b3289	sun	TU-1729	+		0.4531	0.0864	-0.0989	-0.4044	5	NO	NO	
b3290	trkA	TU-1729	+		0.4755	0.6699	-0.0829	-0.0206	5			
b3291	mscL	TU-1730	+	S	0.0000	0.0060	-0.9099	-0.4582	4	NO	YES	IG2
b3292	yhdM	TU-1731	-		0.0495	0.2044	-0.1880	-0.3401	3	NO	YES	IG2
b3293	yhdN	TU-1731	-		0.2599	0.6739	0.0552	-0.0055				
b3294	rplQ	TU-1732	-		0.3743	0.8686	0.0944	0.1255				
b3295	rpoA	TU-1732	-		0.0722	0.1427	0.1827	-0.0104				
b3296	rpsD	TU-1732	-		0.1028	0.0860	0.2404	-0.0484				
b3297	rpsK	TU-1732	-		0.3872	0.0142	0.1037	-0.2558				
b3298	rpsM	TU-1732	-		0.8589	0.1476	-0.0207	-0.2305				
b3299	rpmJ	TU-1733	-		0.7155	0.0805	-0.0313	-0.2321				
b3300	prlA	TU-1733	-		0.3761	0.0382	-0.1085	-0.4394				
b3301	rplO	TU-1733	-		0.0332	0.2305	-0.1761	-0.3097				
b3302	rpmD	TU-1733	-		0.0119	0.1028	-0.3351	-0.6143				
b3303	rpsE	TU-1733	-		0.7290	0.1590	0.0221	-0.1506				
b3304	rplR	TU-1733	-		0.7531	0.5349	-0.0213	-0.1023				
b3305	rplF	TU-1733	-		0.7243	0.6606	-0.0171	-0.0576				
b3306	rpsH	TU-1733	-		0.2175	0.2690	-0.0662	-0.1709				
b3307	rpsN	TU-1733	-		0.0709	0.0500	0.0880	-0.0477				
b3308	rplE	TU-1733	-		0.0038	0.0115	-0.1765	-0.3258				
b3309	rplX	TU-1733	-		0.2115	0.0179	0.0680	-0.0943				
b3310	rplN	TU-1733	-		0.1525	0.6678	0.0773	0.0517				
b3311	rpsQ	TU-1734	-		0.5218	0.8072	0.0323	0.0547				
b3312	rpmC	TU-1734	-		0.0604	0.1081	-0.1102	-0.3539				
b3313	rplP	TU-1734	-		0.1955	0.9066	-0.0744	-0.0837				
b3314	rpsC	TU-1734	-		0.1247	0.1823	-0.1184	-0.2638				
b3315	rplV	TU-1734	-		0.0061	0.1137	-0.3191	-0.4925				
b3316	rpsS	TU-1734	-		0.0023	0.9079	-0.4463	-0.4289				
b3317	rplB	TU-1734	-		0.0184	0.9586	-0.3727	-0.3808				
b3318	rplW	TU-1734	-		0.7727	0.1749	-0.0194	-0.1457				
b3319	rplD	TU-1734	-		0.2523	0.3285	-0.0668	-0.1497				
b3320	rplC	TU-1734	-		0.3605	0.2146	-0.0419	-0.1190				
b3321	rpsJ	TU-1734	-		0.2112	0.5208	-0.0809	-0.1383				

b3322	pinO	TU-1735	-	S	0.0006	0.9208	0.3304	0.3423	4			
b3323	yheD	TU-1735	-	S	0.0003	0.9434	0.4053	0.4141	4			
b3324	yheE	TU-1736	+		0.0826	0.8993	-0.1525	-0.1065	5	NO	NO	ORF
b3325	yheF	TU-1736	+		0.4564	0.4858	-0.0614	0.1025				
b3326	yheG	TU-1736	+		0.0181	0.3090	-0.3342	-0.1702				
b3327	hofF	TU-1736	+		0.8966	0.3109	-0.0085	0.1034				
b3328	hofG	TU-1736	+		0.0238	0.4168	0.2230	0.3346				
b3329	hofH	TU-1736	+		0.0036	0.6538	0.2663	0.3252				
b3330	yheH	TU-1736	+		0.0804	0.6625	0.1849	0.2632				
b3331	yheI	TU-1736	+	S	0.0003	0.8655	0.6172	0.6457	4			
b3332	yheJ	TU-1736	+	S	0.0008	0.3977	0.8897	0.6821	4			
b3333	yheK	TU-1736	+		0.0257	0.1088	0.5448	0.1488				
b3334	pshM	TU-1736	+		0.0033	0.3855	0.5748	0.4130				
b3335	hofD	TU-1736	+		0.0094	0.7250	0.3267	0.2793				
b3336	bfr	TU-1737	-	S	0.0000	0.3558	-1.1391	-0.8211	4			
b3337	yheA	TU-1738	-		0.1250	0.0170	0.3863	-0.6986	5	YES	YES	
b3338	yheB	TU-1739	-		0.3372	0.1972	0.0890	-0.0957				
b3339	tufA	TU-1740	-		0.0062	0.2966	-0.2060	-0.2959				
b3340	fusA	TU-1741	-		0.0374	0.7196	0.1163	0.1454	5	NO	NO	
b3341	rpsG	TU-1741	-		0.0042	0.4938	0.2443	0.1502	5			
b3342	rpsL	TU-1741	-		0.0245	0.9746	0.2011	0.1974	5	YES	YES	
b3343	yheL	TU-1742	-		0.0715	0.8908	0.3204	0.2934				
b3344	yheM	TU-1742	-		0.3770	0.2617	0.0926	-0.0596				
b3345	yheN	TU-1742	-		0.7460	0.1054	0.0266	-0.1749				
b3346	yheO	TU-1742	-		0.1885	0.0021	-0.1352	-0.5699				
b3347	fkpA	TU-1743	-	S	0.0002	0.3580	0.3897	0.2622	4			
b3348	slyX	TU-1744	+	S	0.0002	0.0156	0.3379	-0.0187	4			
b3349	slyD	TU-1745	-		0.2214	0.2632	0.1438	-0.0211				
b3350	kefB	TU-1745	-		0.4015	0.2222	0.0685	0.2057				
b3351	yheR	TU-1745	-		0.0265	0.5918	0.3066	0.3923				
b3352	yheS	TU-1746	+	S	0.0000	0.8274	0.4383	0.4583	4			
b3353	yheT	TU-1746	+		0.1012	0.8423	-0.1076	-0.1307				
b3354	yheU	TU-1746	+		0.0158	0.2808	-0.1227	-0.0211				
b3355	prkB	TU-1746	+		0.0201	0.7089	-0.2172	-0.1686				
b3356	yhfA	TU-1747	-		0.1353	0.1643	-0.1395	0.0087				
b3357	crp	TU-1748	+		0.1975	0.0945	-0.1514	0.0828	5	NO	NO	ORF
b3358	yhfK	TU-1749	+		0.6309	0.5201	-0.0381	0.0336	5	NO	NO	
b3359	argD	TU-1750	-		0.1984	0.6792	-0.1994	-0.2842				
b3360	pabA	TU-1751	-		0.7225	0.8953	0.0241	0.0353				
b3361	fic	TU-1751	-	S	0.0001	0.0795	-1.1412	-0.4598	4			
b3362	yhfG	TU-1751	-	S	0.0005	0.0644	-0.7672	-0.1707	4			
b3363	ppiA	TU-1752	-		0.2739	0.2472	-0.2657	-0.6069				
b3364	yhfC	TU-1753	+		0.5662	0.5551	-0.0931	-0.2119				
b3365	nirB	TU-1754	+		0.0667	0.6421	0.1859	0.3102	5	NO	NO	
b3366	nirD	TU-1754	+		0.0042	0.4719	0.3334	0.1539	5			
b3367	nirC	TU-1754	+		0.1623	0.0467	0.1127	0.4701	5			
b3368	cysG	TU-1754	+	S	0.0001	0.4848	0.3618	0.2896	1			
b3369	yhfL	TU-1755	+		0.0058	0.4475	0.6518	0.4645				
b3370	yhfM	TU-1756	+	S	0.0013	0.5387	0.9224	0.7753	4			
b3371	yhfN	TU-1756	+		0.0039	0.7834	0.6583	0.6028				
b3372	yhfO	TU-1756	+		0.0094	0.0654	0.4508	0.1292				
b3373	yhfP	TU-1756	+	S	0.0009	0.2698	0.5476	0.3876	4			
b3374	yhfQ	TU-1756	+	S	0.0003	0.7010	0.5356	0.4848	4			
b3375	yhfR	TU-1756	+		0.0352	0.1766	0.2181	0.0306				
b3376	yhfS	TU-1757	-	S	0.0005	0.3205	0.4242	0.5476	4			
b3377	yhfT	TU-1757	-	S	0.0004	0.8667	0.5802	0.6042	4			
b3378	yhfU	TU-1757	-	S	0.0000	0.4339	0.4310	0.3555	1	YES	YES	
b3379	yhfV	TU-1757	-	S	0.0000	0.9251	0.5120	0.5196	4			
b3380	yhfW	TU-1757	-		0.0337	0.0706	0.1631	-0.0076				
b3381	yhfX	TU-1757	-		0.0072	0.4292	0.4002	0.5171				
b3382	yhfY	TU-1757	-	S	0.0001	0.0780	0.5242	0.3341	4			
b3383	yhfZ	TU-1757	-	S	0.0001	0.9508	0.4974	0.5035	4			
b3384	trpS	TU-1758	-	S	0.0001	0.0024	0.3543	0.0746	4			

b3385	gph	TU-1758	-		0.2268	0.0010	0.0493	-0.1644				
b3386	rpe	TU-1758	-		0.0047	0.4233	0.1787	0.1290				
b3387	dam	TU-1758	-		0.0214	0.2009	-0.1338	-0.2360				
b3388	damX	TU-1758	-		0.0538	0.0702	-0.2709	-0.5534				
b3389	aroB	TU-1758	-		0.3435	0.4171	0.0654	-0.0071				
b3390	aroK	TU-1758	-	S	0.0000	0.2150	0.2581	0.1668	4			
b3391	hofQ	TU-1759	-	S	0.0005	0.1398	0.5196	0.7253	4			
b3392	yrfA	TU-1759	-		0.0055	0.9067	0.4750	0.4962	5	NO	NO	
b3393	yrfB	TU-1759	-		0.0334	0.4681	0.1145	0.1775				
b3394	yrfC	TU-1759	-	S	0.0020	0.1721	0.2896	0.4257	4			
b3395	yrfD	TU-1759	-		0.0097	0.1866	0.2467	0.3877				
b3396	mrcA	TU-1760	+	S	0.0002	0.3950	0.4001	0.3221	4			
b3397	yrfE	TU-1761	-		0.3182	0.1530	-0.1386	0.1165				
b3398	yrfF	TU-1762	+		0.3378	0.9803	-0.1342	-0.1383	5	NO	NO	ORF
b3399	yrfG	TU-1762	+		0.4834	0.2797	-0.1226	-0.3300				
b3400	yrfH	TU-1762	+		0.3434	0.1988	-0.0746	-0.2067				
b3401	yrfI	TU-1762	+		0.6646	0.1213	-0.0463	0.1976				
b3402	yhgE	TU-1763	-		0.0509	0.3865	-0.2188	-0.1006	5	YES	YES	
b3403	pckA	TU-1764	+		0.0792	0.1610	-0.1391	0.0449	5	YES	YES	
b3404	envZ	TU-1765	-		0.3088	0.6568	0.0718	0.1159				
b3405	ompR	TU-1766	-		0.1974	0.0811	0.2827	-0.1421				
b3406	greB	TU-1767	+		0.0402	0.1722	0.4977	0.1691				
b3407	yhgF	TU-1767	+		0.0613	0.1288	0.4958	0.0911				
b3408	feoA	TU-1768	+		0.0142	0.0002	0.7118	-1.2844	5	YES	YES	
b3409	feoB	TU-1768	+		0.0146	0.0121	0.3955	-0.4985	5			
b3410	yhgG	TU-1768	+	S	0.0018	0.0811	0.7717	0.2298	1			
b3411	yhgA	TU-1769	+		0.0712	0.8778	0.2891	0.3168				
b3412	bioH	TU-1770	-		0.0148	0.2620	0.1298	0.0200				
b3413	yhgH	TU-1771	+		0.6073	0.9326	0.0441	0.0571				
b3414	yhgI	TU-1771	+		0.0037	0.5237	0.4037	0.3117				
b3415	gntT	TU-1772	+		0.2244	0.9577	0.1221	0.1162				
b3416	malQ	TU-1773	-		0.6945	0.0942	-0.0535	0.2279				
b3417	malP	TU-1773	-		0.6608	0.0229	-0.0970	0.5255	5	NO	NO	ORF
b3418	malT	TU-1774	+		0.2506	0.6720	-0.0859	-0.1525				
b3419	yhgJ	TU-1775	-	S	0.0003	0.2470	0.3531	0.2282	4			
b3420	rtcA	TU-1775	-	S	0.0020	0.1436	0.3813	0.5511	4			
b3421	rtcB	TU-1775	-		0.3882	0.4872	0.1061	0.2382				
b3422	rtcR	TU-1776	+		0.0128	0.2871	0.3313	0.4957				
b3423	glpR	TU-1777	-		0.0031	0.1009	0.3393	0.5211	5			
b3424	glpG	TU-1777	-		0.0769	0.2397	0.0900	-0.0134	5			
b3425	glpE	TU-1777	-		0.6895	0.5987	-0.0348	0.0350	5	YES	YES	
b3426	glpD	TU-1778	+		0.1346	0.1177	0.2073	0.4908	5	YES	YES	
b3427	yzgL	TU-1779	-		0.9222	0.8022	-0.0068	0.0320				
b3428	glgP	TU-1780	-	S	0.0013	0.9047	-0.3790	-0.3542	1			
b3429	glgA	TU-1780	-	S	0.0014	0.4189	-0.5233	-0.3465	1			
b3430	glgC	TU-1780	-	S	0.0000	0.6073	-0.9555	-0.8369	1	NO	NO	
b3431	glgX	TU-1781	-	S	0.0000	0.3401	-0.8656	-0.6199	4			
b3432	glgB	TU-1781	-	S	0.0000	0.8893	-0.8341	-0.8670	4			
b3433	asd	TU-1781	-		0.0126	0.8679	-0.2824	-0.3114				
b3434	yhgN	TU-1782	+		0.0960	0.2687	0.1169	-0.0148				
b3435	gntU	TU-1783	-		0.0204	0.2694	0.1801	0.3453	5	NO	NO	
b3436	gntU	TU-1783	-	S	0.0003	0.1557	0.7584	0.5004	4			
b3437	gntK	TU-1783	-		0.0027	0.3169	0.6735	0.4627				
b3438	gntR	TU-1783	-		0.0271	0.2437	0.3387	0.1666	5	NO	NO	ORF
b3439	yhhW	TU-1784	-		0.0033	0.2397	0.5139	0.3162				
b3440	yhhX	TU-1785	-		0.4472	0.2338	0.0830	-0.0771				
b3441	yhhY	TU-1786	+		0.3190	0.3041	0.1360	-0.0137				
b3442	yhhZ	TU-1787	+	S	0.0010	0.1195	0.8190	0.4563	4			
b3443	yrhA	TU-1787	+		0.0080	0.4622	0.6493	0.4521				
b3446	yrhB	TU-1787	+	S	0.0003	0.6737	0.3566	0.2890	4			
b3447	ggt	TU-1788	-		0.7172	0.1553	-0.0464	0.1768				
b3448	yhhA	TU-1789	+	S	0.0014	0.6050	-0.4653	-0.3220	4			
b3449	ugpQ	TU-1790	-		0.8024	0.3756	-0.0194	0.0847				

b3450	ugpC	TU-1790	-	S		0.0004	0.0110	0.2335	0.5197	4			
b3451	ugpE	TU-1790	-		S	0.0548	0.0001	-0.1942	0.4248				
b3452	ugpA	TU-1790	-			0.7350	0.0011	-0.0264	0.3496	5	NO	NO	
b3453	ugpB	TU-1790	-			0.9852	0.0127	0.0024	0.4478				
b3454	livF	TU-1791	-	S		0.0001	0.9728	-0.4491	-0.4533	1			
b3455	livG	TU-1791	-			0.0034	0.3737	-0.2006	-0.0509	5			
b3456	livM	TU-1791	-	S		0.0000	0.9699	-0.4120	-0.4047	1			
b3457	livH	TU-1791	-	S		0.0002	0.8475	-0.3721	-0.4197	1			
b3458	livK	TU-1791	-			0.0096	0.8561	-0.1710	-0.1209	5	YES	YES	
b3459	yhhK	TU-1792	+			0.0032	0.4108	0.2404	0.3235	5	YES	YES	
b3460	livJ	TU-1793	-			0.0296	0.2017	-0.2139	0.2947				
b3461	rpoH	TU-1794	-			0.0793	0.0616	-0.1424	0.0403				
b3462	ftsX	TU-1795	-			0.0309	0.9621	-0.2426	-0.2361				
b3463	ftsE	TU-1795	-			0.3309	0.3785	-0.0708	-0.1703				
b3464	ftsY	TU-1795	-			0.5656	0.9236	-0.0524	-0.0410				
b3465	yhhF	TU-1796	+			0.0076	0.5446	0.1795	0.1220				
b3466	yhhL	TU-1796	+			0.0162	0.8460	0.1701	0.1973				
b3467	yhhM	TU-1797	-			0.1827	0.2365	-0.1760	0.0288				
b3468	yhhN	TU-1798	+	S		0.0019	0.3782	-0.4647	-0.2625	4			
b3469	zntA	TU-1798	+			0.0565	0.6240	0.1897	0.1301				
b3470	yhhP	TU-1799	-	S		0.0016	0.1789	0.8551	0.5569	1	YES	YES	
b3471	yhhQ	TU-1800	+			0.0026	0.3283	0.7741	0.5635	5	YES	YES	
b3472	b3472	TU-1800	+			0.0055	0.1383	0.5839	0.2799	5			
b3473	yhhS	TU-1801	-			0.0249	0.4721	0.4932	0.3408				
b3474	yhhT	TU-1802	+			0.4604	0.3802	0.0944	-0.0629	5	NO	YES	
b3475	yhhU	TU-1802	+			0.2038	0.0146	0.1516	-0.2685	5			
b3476	nikA	TU-1803	+			0.0037	0.1467	0.4742	-0.1068	5	NO	NO	
b3477	nikB	TU-1803	+	S		0.0008	0.4432	0.3515	0.5200	1			
b3478	nikC	TU-1803	+	S		0.0002	0.6030	0.5452	0.3719	1			
b3479	nikD	TU-1803	+	S		0.0020	0.9721	0.4391	0.4279	1			
b3480	nikE	TU-1803	+			0.0088	0.7955	0.2718	0.1937	5			
b3481	yhhG	TU-1803	+			0.0066	0.4412	0.3658	0.2532	5			
b3482	rhsB	TU-1804	+	S		0.0002	0.0006	0.5626	0.0551	1	YES	NO	
b3483	yhhH	TU-1804	+	S		0.0000	0.0544	0.7470	0.5020	1	YES	NO	ORF
b3484	yhhI	TU-1805	+			0.2131	0.6187	0.0909	0.1746	5	NO	NO	
b3485	yhhJ	TU-1806	-			0.4892	0.9590	0.0488	0.0540	5	YES	YES	IG2
b3486	yhiH	TU-1806	-			0.2666	0.0143	-0.1033	0.2603	5			
b3487	yhiI	TU-1806	-	S		0.0002	0.0007	-0.4260	0.0565	1			
b3488	yhiJ	TU-1806	-			0.9986	0.4543	0.0003	0.2135	5	YES	YES	
b3489	yhiK	TU-1807	-	S		0.0001	0.4027	0.6550	0.5414	4			
b3490	yhiL	TU-1807	-			0.0059	0.7938	0.4502	0.3997				
b3491	yhiM	TU-1808	+			0.5489	0.1923	0.0453	-0.4530	5	NO	NO	ORF
b3492	yhiN	TU-1809	-	S		0.0014	0.2318	0.1954	0.0993	4	NO	NO	IG2
b3493	pitA	TU-1810	+			0.4716	0.8782	0.1272	0.1706				
b3494	yhiO	TU-1811	-	S		0.0000	0.0330	-0.9319	-0.4081	4			
b3495	uspA	TU-1812	+	S		0.0000	0.0046	-0.5026	-0.1465	4			
b3496	yhiP	TU-1813	+			0.6057	0.7922	0.0440	0.0743	5	NO	NO	ORF
b3497	yhiQ	TU-1814	-			0.4023	0.2078	0.0458	-0.0749				
b3498	prlC	TU-1814	-			0.0028	0.9129	-0.3404	-0.3543				
b3499	yhiR	TU-1815	+			0.4503	0.9324	-0.0704	-0.0592				
b3500	gor	TU-1815	+			0.0418	0.5967	-0.2990	-0.3887				
b3501	arsR	TU-1816	+			0.0916	0.7048	0.1795	0.2338	5	YES	YES	
b3502	arsB	TU-1816	+			0.0033	0.3404	0.8198	0.5806	5	NO	NO	
b3503	arsC	TU-1816	+			0.0049	0.1296	0.4277	0.1828	5			
b3504	yhiS	TU-1817	+			0.0043	0.0693	0.8017	0.3284	3	NO	NO	IG2
b3506	slp	TU-1818	+			0.0037	0.6258	-1.0696	-0.8327				
b3507	yhiF	TU-1819	+			0.1328	0.1807	-0.4254	-1.0720				
b3508	yhiD	TU-1820	-			0.0024	0.0209	-0.6864	-1.6258				
b3509	hdeB	TU-1821	-	S		0.0000	0.0007	-1.3676	-0.5328	4			
b3510	hdeA	TU-1821	-	S		0.0000	0.0055	-0.9564	-0.3808	4			
b3511	hdeD	TU-1822	+	S		0.0000	0.1117	-1.8181	-1.3581	1	NO	NO	ORF
b3512	yhiE	TU-1823	+	S		0.0000	0.2036	-1.8054	-1.1039	4			
b3513	yhiU	TU-1823	+			0.0226	0.1112	-0.3467	-0.9631				

b3514	yhiV	TU-1823	+		0.1546	0.0105	-0.1898	-1.1215				
b3515	yhiW	TU-1824	-	S	0.0000	0.6491	-1.3746	-1.5603	1	NO	NO	ORF
b3516	yhiX	TU-1824	-	S	0.0001	0.6995	-0.8084	-0.6397	1	YES	YES	
b3517	gadA	TU-1825	-	S	0.0001	0.2386	-1.5091	-0.7229	4			
b3518	yhjA	TU-1826	-		0.0030	0.5047	0.5330	0.4097				
b3519	treF	TU-1827	+		0.5831	0.1157	0.0912	0.4468				
b3520	yhjB	TU-1828	-		0.5848	0.2488	0.0709	0.2745	5	NO	NO	
b3521	yhjC	TU-1829	+		0.6172	0.0359	-0.0546	0.2367	5	NO	NO	
b3522	yhjD	TU-1829	+		0.0266	0.2936	-0.2759	-0.1000	5			
b3523	yhjE	TU-1830	+		0.0261	0.4050	-0.4440	-0.1896	5	YES	NO	
b3524	yhjG	TU-1831	-		0.6433	0.2596	0.0640	0.2618	5	NO	NO	ORF
b3525	yhjH	TU-1831	-		0.3238	0.6846	-0.2740	-0.5227				
b3526	kdgK	TU-1832	+		0.5533	0.6131	0.0624	0.1301	5	YES	YES	
b3527	yhjJ	TU-1833	-		0.7056	0.1523	0.0274	-0.1077				
b3528	dctA	TU-1834	-		0.4929	0.0845	0.1007	0.4253				
b3529	yhjK	TU-1835	-		0.0136	0.9154	0.1821	0.1735	5	YES	NO	
b3530	yhjL	TU-1835	-	S	0.0007	0.6863	-0.4579	-0.3906	1			
b3531	yhjM	TU-1835	-		0.0213	0.2978	0.1691	0.3013	5			
b3532	yhjN	TU-1835	-		0.0224	0.0409	-0.1294	0.0659	5			
b3533	yhjO	TU-1835	-		0.0194	0.0805	0.2631	0.5224	5			
b3534	yhjQ	TU-1835	-		0.8909	0.5645	0.0184	0.1098	5			
b3535	yhjR	TU-1835	-	S	0.0020	0.1616	-0.4492	-0.7024	1	YES	YES	
b3536	yhjS	TU-1836	+		0.3879	0.1059	-0.1728	-0.5558	5	YES	YES	
b3537	yhjT	TU-1836	+		0.4542	0.1961	0.2452	-0.2143	5			
b3538	yhjU	TU-1836	+		0.5281	0.9823	-0.1084	-0.1126	5			
b3539	yhjV	TU-1837	+		0.0380	0.0856	0.4032	-0.0876				
b3540	dppF	TU-1838	-		0.9058	0.1235	0.0190	-0.4826	5			
b3541	dppD	TU-1838	-		0.4452	0.2547	-0.0945	-0.4190	5			
b3542	dppC	TU-1838	-		0.5762	0.3323	-0.0785	-0.4088	5			
b3543	dppB	TU-1838	-		0.3694	0.5054	-0.1194	-0.3533	5			
b3544	dppA	TU-1838	-		0.3340	0.8979	-0.1184	-0.0852	5	YES	YES	
b3545	proK	TU-1839	-		0.2545	0.4894	0.2046	0.3977	5	YES	YES	
b3546	yhjW	TU-1839	-	S	0.0008	0.0392	0.2523	0.0485	1			
b3547	yhjX	TU-1840	-		0.0088	0.3588	0.3470	0.2100				
b3548	yhjY	TU-1841	-	S	0.0003	0.0522	-0.4963	-0.1852	4			
b3549	tag	TU-1842	+		0.0864	0.7690	0.1567	0.1252				
b3550	yiaC	TU-1842	+		0.0035	0.0755	0.2334	0.0795				
b3551	bisC	TU-1843	-		0.4008	0.9935	-0.0756	-0.0744				
b3552	yiaD	TU-1844	+	S	0.0000	0.0286	0.4501	0.2428	4			
b3553	yiaE	TU-1845	+		0.8078	0.2117	-0.0166	-0.1618				
b3554	yiaF	TU-1846	-		0.9020	0.5300	-0.0052	0.0430				
b3555	yiaG	TU-1847	+	S	0.0000	0.1394	-1.2226	-0.6609	4			
b3556	cspA	TU-1848	+		0.9761	0.7944	-0.0067	0.1015				
b3557	yi5A	TU-1849	+		0.0065	0.8858	0.2816	0.3019				
b3558	t150	TU-1849	+		0.0473	0.2380	0.2245	0.0336				
b3559	glyS	TU-1850	-		0.0183	0.3509	0.2949	0.0815	5			
b3560	glyQ	TU-1850	-		0.4895	0.1688	-0.1384	-0.5295	5	YES	YES	
b3561	yiaH	TU-1851	+		0.0093	0.0590	0.2358	0.4570	5	YES	YES	
b3562	yiaA	TU-1852	-		0.8141	0.6043	0.0126	0.0884				
b3563	yiaB	TU-1852	-		0.9156	0.5116	-0.0093	0.1177				
b3564	xylB	TU-1853	-		0.0781	0.0376	-0.1804	0.1238				
b3565	xylA	TU-1853	-	S	0.0001	0.0489	-0.4807	-0.2283	4			
b3566	xylF	TU-1854	+	S	0.0001	0.8459	0.4343	0.4631	4			
b3567	xylG	TU-1854	+	S	0.0011	0.5806	0.6943	0.5903	4			
b3568	xylH	TU-1854	+		0.0055	0.5011	0.5074	0.3980				
b3569	xylR	TU-1854	+		0.1145	0.0782	0.3503	-0.0553				
b3570	bax	TU-1855	-		0.4044	0.6382	-0.1093	-0.2026				
b3571	malS	TU-1856	+		0.0179	0.9274	0.3105	0.3229	5	NO	NO	ORF
b3572	avtA	TU-1857	+		0.5819	0.8663	0.0790	0.0322				
b3573	yiaI	TU-1858	-	S	0.0004	0.0004	0.3116	-0.1172	4			
b3574	yiaJ	TU-1859	-		0.0107	0.0074	0.2743	-0.0700				
b3575	yiaK	TU-1860	+	S	0.0008	0.8058	0.4014	0.3717	4			
b3576	yiaL	TU-1861	+	S	0.0004	0.8349	0.5863	0.5555	4			

b3577	yiaM	TU-1862	+	S		0.0012	0.4749	0.5942	0.4571	4			
b3578	yiaN	TU-1862	+	S		0.0002	0.6557	0.6994	0.6379	4			
b3579	yiaO	TU-1862	+			0.0022	0.7142	0.4535	0.4001				
b3580	lyxK	TU-1862	+	S		0.0018	0.2684	0.3919	0.5339	4			
b3581	sgbH	TU-1862	+			0.0063	0.6771	0.2868	0.3358				
b3582	sgbU	TU-1862	+	S		0.0005	0.0908	0.3582	0.1805	4			
b3583	sgbE	TU-1862	+			0.0024	0.2077	0.2646	0.1468				
b3584	yiaT	TU-1863	-	S		0.0018	0.3676	0.3163	0.4253	4			
b3585	yiaU	TU-1864	+			0.0701	0.5895	0.2039	0.1244				
b3586	yiaV	TU-1865	-	S		0.0011	0.1875	0.3670	0.2193	4			
b3587	yiaW	TU-1865	-			0.0319	0.3746	0.2247	0.0989				
b3588	aldB	TU-1866	-			0.0234	0.9956	0.3888	0.3902	5	NO	NO	
b3589	yiaY	TU-1867	-			0.0115	0.5009	0.3995	0.5050	5	YES	YES	
b3590	selB	TU-1868	-	S		0.0001	0.8996	0.5444	0.5249	1			
b3591	selA	TU-1868	-	S		0.0001	0.1295	0.3209	0.1642	1	NO	NO	
b3592	yibF	TU-1869	-			0.1128	0.0015	0.0944	0.4071	5	YES	YES	
b3593	rhsA	TU-1870	+			0.0505	0.6580	0.1718	0.0887	5	YES	YES	
b3594	yibA	TU-1870	+			0.0257	0.7135	-0.4077	-0.3252	5	YES	YES	ORF
b3595	yibJ	TU-1870	+			0.1255	0.3160	0.2211	0.0332	5			
b3596	yibG	TU-1871	+			0.0674	0.3413	0.2946	0.1325				
b3597	yibH	TU-1872	-			0.0043	0.3451	-0.2058	-0.0959	5			
b3598	yibI	TU-1872	-			0.7409	0.0109	-0.0346	0.3354	5	YES	YES	
b3599	mtlA	TU-1873	+			0.0040	0.0950	-0.2280	-0.0486	5	YES	YES	
b3600	mtlD	TU-1873	+			0.0127	0.7289	-0.3060	-0.3599	5			
b3601	mtlR	TU-1873	+			0.0520	0.6579	-0.2567	-0.1904	5			
b3602	yibL	TU-1874	+			0.0212	0.8167	0.1740	0.1422	5	YES	YES	
b3603	lldP	TU-1875	+			0.0451	0.5806	0.6443	0.4717				
b3604	lldR	TU-1875	+			0.3870	0.5179	0.1995	0.3624				
b3605	lldD	TU-1875	+			0.0434	0.7754	0.3422	0.3888				
b3606	yibK	TU-1876	+			0.2973	0.0203	0.1809	-0.3024				
b3607	cysE	TU-1877	-			0.0695	0.2005	0.2440	0.0518				
b3608	gpsA	TU-1877	-			0.0299	0.3903	0.1923	0.0773				
b3609	secB	TU-1877	-			0.1301	0.4502	-0.1938	-0.3353				
b3610	grxC	TU-1877	-			0.2599	0.2659	-0.0682	-0.1677				
b3611	yibN	TU-1877	-	S		0.0002	0.9161	0.5228	0.5429	4			
b3612	yibO	TU-1878	+			0.0234	0.0002	0.2312	-0.2194				
b3613	yibP	TU-1878	+			0.0047	0.7558	0.2915	0.2516				
b3614	yibQ	TU-1878	+			0.3116	0.2661	0.0612	-0.0633				
b3615	yibD	TU-1879	-	S		0.0006	0.4315	0.5183	0.4010	4			
b3616	tdh	TU-1880	-			0.6231	0.4122	0.0472	0.1592	5			
b3617	kbl	TU-1880	-			0.3386	0.7956	-0.0678	-0.0186	5	NO	YES	
b3618	htrL	TU-1881	-			0.1041	0.0391	0.2844	-0.1906				
b3619	rfaD	TU-1882	+	S		0.0012	0.0179	0.1822	-0.0324	4			
b3620	rfaF	TU-1882	+			0.0075	0.0191	0.1374	-0.0518				
b3621	rfaC	TU-1882	+			0.0065	0.4528	0.3303	0.4360				
b3622	rfaL	TU-1882	+			0.0110	0.4805	-0.9938	-1.2541				
b3623	rfaK	TU-1883	-			0.2938	0.5762	0.1713	0.2952	5			
b3624	rfaZ	TU-1883	-			0.7549	0.3515	-0.0713	-0.3112	5			
b3625	rfaY	TU-1883	-	S		0.0011	0.9932	0.5518	0.5505	1			
b3626	rfaJ	TU-1883	-			0.0265	0.2478	0.3731	0.1176	5			
b3627	rfaI	TU-1883	-			0.0343	0.2171	0.1895	0.0131	5			
b3628	rfaB	TU-1883	-	S		0.0012	0.4322	0.2297	0.1524	1			
b3629	rfaS	TU-1883	-			0.4350	0.8072	-0.2447	-0.3325	5			
b3630	rfaP	TU-1883	-			0.1358	0.4946	0.1827	0.2854	5			
b3631	rfaG	TU-1883	-	S		0.0004	0.9574	0.3992	0.4060	1			
b3632	rfaQ	TU-1883	-			0.4740	0.4619	-0.0874	-0.1885	5	YES	YES	
b3633	kdtA	TU-1884	+			0.0102	0.7651	-0.5125	-0.5663	5	YES	YES	
b3634	kdtB	TU-1884	+			0.2708	0.6913	0.0966	0.1367	5			
b3635	mutM	TU-1885	-			0.5580	0.7239	0.0439	0.0838				
b3636	rpmG	TU-1886	-	S		0.0008	0.7398	-0.9321	-1.0264	4			
b3637	rpmB	TU-1886	-			0.3984	0.6120	-0.0844	0.0021				
b3638	radC	TU-1887	-			0.4717	0.3022	0.0525	0.1583				
b3639	dfp	TU-1888	+			0.0073	0.1019	0.6834	0.2649				

b3640	dut	TU-1888	+		0.1433	0.0879	0.3803	-0.1636				
b3641	ttk	TU-1888	+		0.0218	0.0703	0.5707	0.0727				
b3642	pyrE	TU-1889	-	S	0.0004	0.4107	0.6315	0.5043	4			
b3643	rph	TU-1889	-	S	0.0000	0.3011	0.7500	0.6171	4			
b3644	yicC	TU-1890	+	S	0.0020	0.0123	0.3115	0.0616	4			
b3645	dinD	TU-1891	+	S	0.0000	0.0189	0.7250	0.3935	1	NO	NO	
b3646	yicG	TU-1892	+	S	0.0001	0.8486	0.6230	0.5964	4			
b3647	yicF	TU-1893	-	S	0.0018	0.8372	0.5032	0.4726	4			
b3648	gmk	TU-1894	+		0.0560	0.6038	0.1081	0.1625				
b3649	rpoZ	TU-1895	+		0.2277	0.2616	-0.0779	-0.1937				
b3650	spoT	TU-1895	+		0.0228	0.5658	-0.2395	-0.3118				
b3651	spoU	TU-1895	+		0.0168	0.4437	-0.1782	-0.2465				
b3652	recG	TU-1895	+		0.0143	0.7024	0.2093	0.1704				
b3653	gltS	TU-1896	-		0.0564	0.0829	0.1707	0.3442				
b3654	yicE	TU-1897	+		0.0085	0.3486	0.2633	0.0622				
b3655	yicH	TU-1898	+		0.0035	0.9927	-0.3189	-0.3199				
b3656	yicI	TU-1899	-		0.0117	0.9517	0.3190	0.3107	5	NO	NO	ORF
b3657	yicJ	TU-1899	-		0.0028	0.5334	0.3326	0.2605	5	NO	NO	ORF
b3658	selC	TU-1900	+		0.0597	0.6059	0.1734	0.1080	5	YES	YES	
b3659	yicK	TU-1901	+		0.0657	0.8811	0.3136	0.2833				
b3660	yicL	TU-1902	+		0.0862	0.8654	-0.0931	-0.1067				
b3661	nlpA	TU-1903	-		0.0834	0.3744	0.3868	0.1524				
b3662	yicM	TU-1904	-		0.2757	0.0862	0.1300	0.3693	5	YES	YES	ORF
b3663	yicN	TU-1904	-		0.2752	0.7051	-0.1013	-0.0557				
b3664	yicO	TU-1904	-	S	0.0011	0.0284	0.3481	0.6041	1	YES	NO	ORF
b3665	yicP	TU-1905	+	S	0.0005	0.0390	0.3259	0.4998	4			
b3666	uhpT	TU-1906	-		0.1237	0.5225	0.1914	0.2932				
b3667	uhpC	TU-1907	-	S	0.0013	0.9674	0.3484	0.3531	1			
b3668	uhpB	TU-1907	-	S	0.0014	0.3461	0.3862	0.4916	1			
b3669	uhpA	TU-1907	-		0.3189	0.5657	-0.0936	-0.1553	5	NO	YES	
b3670	ilvN	TU-1908	-		0.0121	0.0324	-0.5205	0.2691				
b3671	ilvB	TU-1908	-		0.0252	0.1851	-0.3992	0.1118				
b3672	ivbL	TU-1908	-		0.9413	0.1207	-0.0091	0.4176				
b3673	emrD	TU-1909	+		0.1695	0.0199	0.1239	0.4576				
b3674	yidF	TU-1910	-		0.0418	0.3663	0.1973	0.2946	5			
b3675	yidG	TU-1910	-		0.8665	0.6339	-0.0227	0.0532	5			
b3676	yidH	TU-1910	-	S	0.0008	0.0088	0.5410	0.1476	1	YES	NO	
b3677	yidI	TU-1911	+		0.0023	0.2090	0.6647	0.4296	5	YES	NO	
b3678	yidJ	TU-1912	-		0.0035	0.1235	0.4729	0.2172				
b3679	yidK	TU-1912	-		0.0039	0.3963	0.6401	0.4722				
b3680	yidL	TU-1913	+		0.0061	0.6039	0.5554	0.4566				
b3681	glvG	TU-1914	-		0.0025	0.5259	0.4477	0.3549	5			
b3682	glvB	TU-1914	-		0.0032	0.5926	0.4327	0.3589	5			
b3683	glvC	TU-1914	-		0.0029	0.6176	0.6165	0.7251	5	NO	NO	
b3684	yidP	TU-1915	+		0.0071	0.3078	0.3178	0.1878	5	NO	NO	
b3685	yidE	TU-1916	-		0.0740	0.7414	0.2557	0.2010				
b3686	ibpB	TU-1917	-		0.2451	0.8710	0.3728	0.3183	5			
b3687	ibpA	TU-1917	-		0.4033	0.3814	-0.3420	0.0288	5	YES	NO	
b3688	yidQ	TU-1918	+		0.0028	0.1382	-0.2814	-0.5055	5	YES	NO	
b3689	yidR	TU-1919	-		0.0182	0.9792	0.2621	0.2650				
b3690	yidS	TU-1920	+	S	0.0007	0.9774	0.4758	0.4717	4			
b3691	dgoT	TU-1921	-	S	0.0001	0.8942	0.6268	0.6095	4			
b3692	dgoA	TU-1921	-	S	0.0000	0.0023	0.4345	0.0727	4			
b3693	dgoK	TU-1921	-	S	0.0005	0.2273	0.3446	0.2277	4			
b3694	b3694	TU-1921	-		0.0030	0.2909	0.2845	0.1681				
b3695	yidW	TU-1921	-	S	0.0002	0.9948	0.5195	0.5204	4			
b3696	yidX	TU-1922	+		0.4008	0.0881	-0.0486	-0.2682	5	YES	YES	
b3697	yidA	TU-1923	-		0.6942	0.5581	-0.0438	0.0423				
b3698	yidB	TU-1924	-		0.6118	0.6065	0.0495	0.1345				
b3699	gyrB	TU-1925	-		0.0811	0.0685	0.1472	0.3399				
b3700	recF	TU-1926	-	S	0.0000	0.9273	0.4497	0.4415	4			
b3701	dnaN	TU-1926	-		0.4210	0.6638	0.0355	0.0012				
b3702	dnaA	TU-1926	-	S	0.0005	0.4615	0.2253	0.2805	4			

b3703	rpmH	TU-1927	+			0.0221	0.8620	-0.3511	-0.3177				
b3704	rnpA	TU-1927	+			0.0218	0.8128	-0.3332	-0.2810				
b3705	yidC	TU-1928	+			0.0516	0.7282	-0.4973	-0.6143				
b3706	thdF	TU-1928	+			0.2722	0.3745	0.0908	0.1792				
b3707	tnaL	TU-1929	+			0.0582	0.1582	-0.7622	-0.0835				
b3708	tnaA	TU-1929	+			0.5809	0.0119	-0.0497	0.2420				
b3709	tnaB	TU-1929	+			0.1208	0.0204	0.1594	0.4962				
b3710	yidY	TU-1930	+			0.5482	0.0562	-0.0437	0.2108				
b3711	yidZ	TU-1930	+			0.4078	0.5861	0.0967	0.1933				
b3712	yieE	TU-1931	+			0.0411	0.2933	-0.2226	-0.3880				
b3713	yieF	TU-1931	+			0.2132	0.2303	0.1676	-0.0494				
b3714	yieG	TU-1932	-			0.0203	0.0740	0.5235	0.0306				
b3715	yieH	TU-1933	+			0.2871	0.2113	0.1396	-0.0599				
b3716	yieI	TU-1933	+			0.0311	0.0268	0.4467	-0.0462				
b3717	yieJ	TU-1933	+			0.0829	0.9842	0.2347	0.2378	5	NO	NO	
b3718	yieK	TU-1934	-	S		0.0015	0.7629	0.4966	0.5396	4			
b3719	yieL	TU-1934	-	S		0.0006	0.8661	0.5182	0.4951	1	NO	NO	ORF
b3720	yieC	TU-1934	-			0.0061	0.9446	0.5739	0.5870				
b3721	bglB	TU-1934	-			0.0089	0.6882	0.5163	0.4283				
b3722	bglF	TU-1934	-	S		0.0012	0.4124	0.5908	0.7316	4			
b3723	bglG	TU-1935	-			0.0051	0.5418	0.4983	0.3872				
b3724	phoU	TU-1936	-			0.4164	0.1275	-0.0669	-0.2665				
b3725	pstB	TU-1936	-		S	0.1327	0.0001	-0.0952	-0.5348				
b3726	pstA	TU-1936	-			0.0334	0.1182	0.1256	-0.0493				
b3727	pstC	TU-1936	-			0.2105	0.2456	0.1035	-0.0651				
b3728	pstS	TU-1936	-			0.8952	0.1159	-0.0139	-0.2707				
b3729	glmS	TU-1937	-	S		0.0000	0.0946	-0.5360	-0.6912	4			
b3730	glmU	TU-1938	-	S		0.0002	0.8622	-0.2895	-0.3010	1	YES	YES	
b3731	atpC	TU-1939	-			0.0044	0.2676	0.2740	0.0717				
b3732	atpD	TU-1939	-			0.0711	0.1359	-0.2842	-0.6232				
b3733	atpG	TU-1939	-			0.3348	0.1168	-0.0950	-0.2936				
b3734	atpA	TU-1939	-			0.2537	0.0086	-0.1453	-0.5678	5	NO	NO	ORF
b3735	atpH	TU-1939	-			0.5121	0.0047	-0.0344	-0.3061				
b3736	atpF	TU-1939	-			0.1368	0.0003	0.1053	-0.2171				
b3737	atpE	TU-1939	-			0.6079	0.0855	-0.0318	-0.1775				
b3738	atpB	TU-1939	-			0.0751	0.1114	-0.1453	-0.2899				
b3739	atpI	TU-1939	-	S		0.0000	0.0290	0.3913	0.1609	4			
b3740	gidB	TU-1940	-	S		0.0005	0.0764	0.4002	0.2022	4			
b3741	gidA	TU-1940	-			0.1492	0.1742	0.2574	-0.0011				
b3742	mioC	TU-1941	-			0.8274	0.2027	-0.0283	-0.2354				
b3743	asnC	TU-1942	-			0.4157	0.5529	-0.1013	-0.0098				
b3744	asnA	TU-1943	+			0.4018	0.1789	-0.0826	0.1282				
b3745	yieM	TU-1944	-			0.1639	0.5168	-0.1467	-0.2400				
b3746	yieN	TU-1945	-	S		0.0016	0.9688	-0.3506	-0.3555	1	NO	NO	ORF
b3747	kup	TU-1946	+			0.0983	0.3955	-0.2627	-0.0995				
b3748	rbsD	TU-1947	+			0.0192	0.0283	0.6736	-0.0397				
b3749	rbsA	TU-1947	+	S		0.0001	0.0074	1.0654	0.4317	4			
b3750	rbsC	TU-1947	+	S		0.0002	0.0005	0.6500	-0.0762	4			
b3751	rbsB	TU-1947	+	S		0.0018	0.0689	0.3889	0.1432	4			
b3752	rbsK	TU-1947	+	S		0.0002	0.0017	0.5054	0.0903	1	NO	NO	ORF
b3753	rbsR	TU-1948	+			0.6282	0.8191	0.0457	0.0150	5	NO	NO	
b3754	yieO	TU-1949	-			0.5074	0.0568	0.0666	-0.1867	5			
b3755	yieP	TU-1949	-	S		0.0000	0.0146	-0.8941	-1.2969	1	YES	YES	
b3756	rrsC	TU-1950	+			0.3847	0.3698	-0.0276	-0.0652	5	YES	YES	
b3757	gltU	TU-1950	+			0.0162	0.4558	-0.2635	-0.1535	5			
b3758	rrlC	TU-1951	+			0.3255	0.8421	0.0832	0.0636				
b3759	rrfC	TU-1952	+			0.7308	0.8811	-0.0283	-0.0051				
b3760	aspT	TU-1952	+			0.5629	0.8985	-0.1034	-0.0664				
b3761	trpT	TU-1953	+			0.1069	0.5870	-0.5086	-0.7296				
b3762	yifA	TU-1954	-			0.0333	0.6383	-0.1282	-0.0756				
b3763	pssR	TU-1954	-			0.1057	0.1348	0.2441	0.5030				
b3764	yifE	TU-1955	+			0.0936	0.7151	0.3569	0.2456				
b3765	yifB	TU-1956	-			0.2564	0.7999	0.1198	0.0859				

				S1	S2								
b3766	ilvL	TU-1957	+	S		0.0009	0.1997	-0.3881	-0.1665	4			
b3767	ilvG	TU-1957	+	S		0.0007	0.0205	-0.4679	-0.1790	4			
b3769	ilvM	TU-1957	+			0.0053	0.3944	-0.3201	-0.2227				
b3770	ilvE	TU-1957	+			0.0153	0.3190	0.3051	0.4263				
b3771	ilvD	TU-1957	+			0.0118	0.1763	0.3599	0.5433				
b3772	ilvA	TU-1957	+	S		0.0007	0.3094	0.3726	0.4820	4			
b3773	ilvY	TU-1958	-			0.0290	0.3423	0.2923	0.4256				
b3774	ilvC	TU-1959	+			0.3076	0.1884	-0.0805	0.0817				
b3775	ppiC	TU-1960	-	S		0.0000	0.6192	0.3115	0.3790	1	YES	YES	
b3776	b3776	TU-1961	-	S		0.0005	0.9957	-0.5209	-0.5192	4			
b3777	yifN	TU-1961	-			0.0636	0.3501	-0.1745	-0.4124				
b3778	rep	TU-1962	+	S		0.0000	0.7997	0.6443	0.6144	4			
b3779	gppA	TU-1963	-			0.0296	0.5904	-0.0918	-0.0510	5			
b3780	rhlB	TU-1963	-			0.0121	0.6136	-0.3161	-0.2378	5	YES	NO	
b3781	trxA	TU-1964	+			0.0130	0.0899	0.1342	-0.0154	5	YES	NO	
b3782	rhoL	TU-1965	+			0.2622	0.8851	-0.1313	-0.1507				
b3783	rho	TU-1965	+			0.2438	0.3805	-0.1871	-0.3414				
b3784	rfe	TU-1966	+	S		0.0002	0.9089	-1.1429	-1.1146	1	YES	YES	
b3785	wzzE	TU-1966	+			0.0041	0.4212	-0.5439	-0.3674	5			
b3786	wecB	TU-1966	+	S		0.0005	0.0500	-0.3624	-0.1842	1	NO	NO	
b3787	wecC	TU-1966	+	S		0.0002	0.0274	-0.4802	-0.1813	1			
b3788	rffG	TU-1966	+	S		0.0003	0.0893	-0.5499	-0.2745	1			
b3789	rffH	TU-1966	+			0.0105	0.1440	-0.3049	-0.1062	5			
b3790	wecD	TU-1967	+			0.0246	0.7708	-0.3554	-0.4060				
b3791	wecE	TU-1967	+			0.3913	0.1137	0.0860	-0.1283				
b3792	wzxE	TU-1967	+			0.9053	0.1086	0.0131	-0.2631				
b3793	wecF	TU-1967	+	S		0.0013	0.9214	0.3739	0.3616	4			
b3794	wecG	TU-1967	+			0.0567	0.0849	0.1963	-0.0178	5	NO	NO	ORF
b3795	yifK	TU-1968	+			0.3475	0.9634	-0.1582	-0.1474				
b3796	argX	TU-1968	+			0.1485	0.2233	0.1597	-0.1459	5	YES	YES	
b3797	hisR	TU-1968	+			0.2776	0.6180	0.1816	0.3130				
b3798	leuT	TU-1968	+			0.0510	0.8621	0.2895	0.3236	5	YES	YES	
b3799	proM	TU-1969	+	S		0.0015	0.9798	1.1359	1.1224	4			
b3800	aslB	TU-1970	+			0.0373	0.5048	0.3139	0.2024				
b3801	aslA	TU-1971	-			0.0036	0.3791	0.4713	0.6062				
b3802	hemY	TU-1972	-			0.0027	0.1037	0.1608	0.0413				
b3803	hemX	TU-1972	-			0.9267	0.1796	-0.0056	-0.1667				
b3804	hemD	TU-1972	-			0.0045	0.8023	0.2498	0.2247				
b3805	hemC	TU-1972	-			0.0030	0.0581	0.2364	0.0688				
b3806	cyaA	TU-1973	+	S		0.0003	0.0048	-0.5185	-1.0123	4			
b3807	cyaY	TU-1974	-			0.3390	0.8957	0.0828	0.0649				
b3808	b3808	TU-1975	+			0.0118	0.3737	0.3183	0.2021				
b3809	dapF	TU-1975	+			0.0124	0.0375	0.1377	-0.0185				
b3810	yigA	TU-1975	+			0.7201	0.1670	0.0198	-0.1107				
b3811	xerC	TU-1975	+	S		0.0019	0.1973	0.3086	0.1828	4			
b3812	yigB	TU-1975	+			0.0349	0.0514	0.1589	-0.0256				
b3813	uvrD	TU-1976	+			0.0068	0.7144	0.4007	0.3502	5	YES	YES	
b3814	b3814	TU-1977	-			0.0028	0.7876	0.4216	0.4610				
b3815	yigE	TU-1977	-			0.0069	0.9266	0.4183	0.4038				
b3816	corA	TU-1978	+			0.7816	0.2744	-0.0200	-0.1384				
b3817	yigF	TU-1979	-			0.0021	0.6088	0.4573	0.5303				
b3818	yigG	TU-1979	-			0.0250	0.6198	0.2302	0.1689				
b3819	rarD	TU-1979	-			0.1336	0.0054	0.1449	0.5145				
b3820	yigI	TU-1979	-		S	0.9197	0.0001	-0.0074	0.5466				
b3821	pldA	TU-1980	+			0.1280	0.0417	0.1032	0.3099				
b3822	recQ	TU-1981	+			0.0263	0.5000	0.1861	0.1233				
b3823	yigJ	TU-1981	+			0.9754	0.5631	-0.0036	0.0769				
b3824	yigK	TU-1982	-			0.5013	0.7261	-0.0982	-0.0281				
b3825	pldB	TU-1983	+			0.4657	0.5829	0.0985	0.0153				
b3826	yigL	TU-1984	+			0.4057	0.4740	-0.0711	0.0061				
b3827	yigM	TU-1985	+			0.0124	0.0724	-0.2194	-0.0368	5	YES	YES	
b3828	metR	TU-1986	-			0.3202	0.9928	-0.0943	-0.0931				
b3829	metE	TU-1987	+			0.1329	0.4668	-0.2426	-0.3783				

b3830	ysgA	TU-1988	-	S	0.0010	0.4912	-0.9225	-0.7394	4			
b3831	udp	TU-1989	+		0.1117	0.4537	-0.2802	-0.4350				
b3832	yigN	TU-1990	+		0.0283	0.2261	0.3008	0.1240	5	NO	NO	ORF
b3833	ubiE	TU-1990	+		0.6096	0.0648	-0.0757	-0.4503				
b3834	yigP	TU-1990	+		0.0332	0.0876	0.2386	-0.0033				
b3835	yigR	TU-1990	+		0.0250	0.4804	0.3210	0.4440				
b3836	b3836	TU-1990	+		0.8161	0.1105	0.0353	-0.3187	5	YES	YES	
b3838	b3838	TU-1990	+	S	0.0000	0.2894	0.4833	0.3056	1			
b3839	yigU	TU-1990	+	S	0.0007	0.0026	0.3025	-0.1259	1			
b3840	yigW	TU-1990	+	S	0.0000	0.1554	0.5288	0.3233	4			
b3841	yigW	TU-1990	+		0.0076	0.0065	0.1753	-0.1745				
b3842	rfaH	TU-1991	-		0.6849	0.7880	-0.0394	-0.0746				
b3843	yigC	TU-1992	+	S	0.0010	0.8628	0.2539	0.2370	4			
b3844	ubiB	TU-1992	+		0.0045	0.1246	0.2326	0.0678				
b3845	fadA	TU-1993	-		0.0033	0.0817	0.2965	0.4940	5			
b3846	fadB	TU-1993	-		0.7384	0.0037	0.0268	0.3855	5	YES	YES	
b3847	pepQ	TU-1994	+		0.3771	0.1748	-0.0787	0.0697	5	YES	YES	
b3848	yigZ	TU-1994	+		0.0480	0.7167	0.1355	0.1652	5			
b3849	trkH	TU-1994	+		0.2077	0.7777	0.1023	0.1317	5	NO	NO	
b3850	hemG	TU-1994	+	S	0.0001	0.6409	0.2408	0.1984	1	NO	NO	ORF
b3851	rrsA	TU-1994	+		0.2207	0.2176	-0.0287	-0.0668	5	YES	YES	
b3852	ileT	TU-1994	+		0.0123	0.5706	-0.3411	-0.2398	5			
b3853	alaT	TU-1994	+		0.3009	0.0385	-0.1265	0.3294	5			
b3854	rrlA	TU-1994	+		0.6407	0.4110	-0.0337	0.0425	5			
b3855	rrfA	TU-1995	+		0.6473	0.8987	0.0752	0.0454				
b3856	mobB	TU-1996	-		0.0133	0.4595	0.2490	0.1413				
b3857	mobA	TU-1996	-		0.5137	0.8615	0.0561	0.0314				
b3858	yihD	TU-1997	+		0.0225	0.6749	0.1817	0.2396				
b3859	yihE	TU-1998	+	S	0.0000	0.5660	0.4462	0.4007	4			
b3860	dsbA	TU-1998	+		0.0999	0.2950	0.1773	0.0242				
b3861	yihF	TU-1999	+		0.1348	0.9892	0.1205	0.1188	5	NO	NO	ORF
b3862	yihG	TU-2000	-		0.0637	0.2284	0.1385	-0.0296				
b3863	polA	TU-2001	+		0.1156	0.6577	0.0990	0.1404				
b3864	spf	TU-2002	+		0.0093	0.3542	1.4308	0.8363				
b3865	yihA	TU-2003	-		0.1424	0.8726	0.1559	0.1332				
b3866	yihI	TU-2004	+		0.0035	0.6209	0.3243	0.2534				
b3867	hemN	TU-2005	+		0.6358	0.7730	0.0427	0.0726	3	YES	YES	IG2
b3868	glnG	TU-2006	-		0.0196	0.8836	0.2453	0.2683	5	YES	YES	IG2
b3869	glnL	TU-2006	-		0.1259	0.8700	-0.2854	-0.2428	5			
b3870	glnA	TU-2006	-		0.0091	0.6269	-0.5956	-0.3926	5	YES	NO	
b3871	yihK	TU-2007	+		0.9775	0.2687	0.0063	-0.3474	5	YES	NO	
b3872	yihL	TU-2008	+		0.0036	0.9470	0.3728	0.3822				
b3873	yihM	TU-2008	+	S	0.0004	0.4559	0.4923	0.3476	4			
b3874	yihN	TU-2009	+		0.0034	0.1033	0.6398	0.3052	5	NO	NO	
b3875	yshA	TU-2010	-	S	0.0007	0.4220	0.8491	0.6618	4			
b3876	yihO	TU-2010	-	S	0.0006	0.9419	0.6507	0.6385	4			
b3877	yihP	TU-2010	-	S	0.0002	0.8760	0.5291	0.5089	4			
b3878	yihQ	TU-2010	-	S	0.0005	0.8632	0.5466	0.5238	4			
b3879	yihR	TU-2011	-	S	0.0003	0.3751	0.4818	0.3795	4			
b3880	yihS	TU-2012	-	S	0.0014	0.9109	0.5456	0.5288	1			
b3881	yihT	TU-2012	-	S	0.0006	0.2234	0.4623	0.3072	1			
b3882	yihU	TU-2012	-	S	0.0004	0.9364	0.4206	0.4291	1	NO	NO	
b3883	yihV	TU-2013	+	S	0.0017	0.6687	0.4520	0.3928	1	NO	NO	
b3884	yihW	TU-2013	+		0.0038	0.7829	0.3906	0.4274	5			
b3885	yihX	TU-2013	+		0.0057	0.8116	-0.2167	-0.1878	5			
b3886	rbn	TU-2013	+		0.0133	0.7144	-0.1958	-0.1427	5			
b3887	yihZ	TU-2013	+		0.9071	0.1261	-0.0045	-0.1923	5			
b3888	yiiD	TU-2013	+		0.0294	0.8875	0.2315	0.2490	5			
b3889	yiiE	TU-2014	+	S	0.0002	0.7660	0.6073	0.5629	4			
b3890	yiiF	TU-2015	+		0.0417	0.4118	0.3206	0.1309	5	NO	NO	
b3891	fdhE	TU-2016	-		0.3016	0.0533	-0.1964	0.2070				
b3892	fdoI	TU-2016	-		0.0743	0.2582	-0.9582	-0.2672				
b3893	fdoH	TU-2016	-		0.1200	0.2154	-1.0619	-0.0534				

b3894	fdoG	TU-2016	-		0.0406	0.2072	-1.6245	-0.3612				
b3895	fdhD	TU-2017	+		0.4390	0.3083	-0.0564	0.0529				
b3896	yiiG	TU-2018	+		0.0274	0.3992	0.3064	0.1522	5	NO	NO	
b3897	frvR	TU-2019	-		0.0086	0.5760	0.4167	0.5092				
b3898	frvX	TU-2019	-	S	0.0001	0.3050	0.3259	0.4218	4			
b3899	frvB	TU-2019	-		0.0093	0.0127	0.3033	0.6465	5	NO	NO	ORF
b3900	frvA	TU-2019	-		0.0203	0.7228	0.1954	0.2292				
b3901	yiiL	TU-2020	-		0.0030	0.0655	0.3402	0.5697				
b3902	rhaD	TU-2021	-		0.0080	0.5187	0.3296	0.4180				
b3903	rhaA	TU-2021	-		0.0046	0.8190	0.3262	0.2967				
b3904	rhaB	TU-2021	-		0.0376	0.4508	0.2472	0.3420				
b3905	rhaS	TU-2022	+		0.0032	0.1309	0.3373	0.5610				
b3906	rhaR	TU-2022	+		0.0171	0.1555	0.1308	0.2693				
b3907	rhaT	TU-2023	-		0.3712	0.2887	0.0688	0.2292				
b3908	sodA	TU-2024	+		0.0097	0.0500	-0.5055	0.0348				
b3909	kdgT	TU-2025	+	S	0.0002	0.4141	0.8334	0.6553	1	NO	NO	
b3910	yiiM	TU-2026	+		0.0665	0.3968	0.2181	0.1119				
b3911	cpxA	TU-2027	-		0.1194	0.0621	0.1586	-0.0822				
b3912	cpxR	TU-2027	-		0.0324	0.2950	-0.2665	-0.4297				
b3913	b3913	TU-2028	+		0.0140	0.8354	-0.3171	-0.3856				
b3915	yiiP	TU-2029	+	S	0.0001	0.1604	0.1958	0.2859	1	YES	NO	ORF
b3916	pfkA	TU-2030	+		0.4424	0.3767	0.0725	-0.0209				
b3917	sbp	TU-2031	+	S	0.0014	0.0159	1.1419	0.3184	4			
b3918	cdh	TU-2032	+	S	0.0005	0.9808	0.3360	0.3387	4			
b3919	tpiA	TU-2033	-	S	0.0000	0.2492	-0.4162	-0.3288	4			
b3920	yiiQ	TU-2033	-		0.7142	0.0574	0.0210	0.2046				
b3921	yiiR	TU-2034	+	S	0.0011	0.8299	0.2312	0.2111	4			
b3922	yiiS	TU-2035	+		0.1671	0.0855	-0.1793	0.2561				
b3923	yiiT	TU-2035	+		0.0466	0.1319	-0.3135	0.1366				
b3924	fpr	TU-2036	-		0.0089	0.7041	-0.2131	-0.1597				
b3925	glpX	TU-2037	-	S	0.0000	0.0032	0.3146	0.0780	4			
b3926	glpK	TU-2038	-		0.0034	0.7207	0.3528	0.3946				
b3927	glpF	TU-2038	-		0.1413	0.4033	0.1595	0.2757				
b3928	yiiU	TU-2039	+		0.0090	0.8440	0.2684	0.2364				
b3929	menG	TU-2040	-		0.0028	0.8627	0.2492	0.2647				
b3930	menA	TU-2041	-	S	0.0015	0.8462	0.3485	0.3271	1	NO	YES	
b3931	hslU	TU-2042	-		0.8573	0.0509	0.0196	-0.3059				
b3932	hslV	TU-2042	-		0.2696	0.1602	0.0947	-0.0792				
b3933	ftsN	TU-2043	-	S	0.0000	0.0150	0.7759	0.4941	4			
b3934	cytR	TU-2043	-	S	0.0005	0.5830	0.2911	0.2412	4			
b3935	priA	TU-2044	-		0.0075	0.8896	-0.1038	-0.1120				
b3936	rpmE	TU-2045	+		0.0976	0.2164	-0.1447	0.0188	5	YES	YES	
b3937	yiiX	TU-2046	-		0.0027	0.4250	0.3243	0.4041	5			
b3938	metJ	TU-2046	-		0.0068	0.0649	0.3795	0.6770	5	YES	YES	
b3939	metB	TU-2047	+		0.4117	0.7682	-0.0997	-0.1434	5	YES	YES	
b3940	metL	TU-2047	+		0.3918	0.3872	0.0954	0.2100	5	NO	NO	
b3941	metF	TU-2048	+		0.9870	0.3149	0.0026	0.2392	5	NO	NO	ORF
b3942	katG	TU-2049	+		0.1495	0.1095	-0.1954	-0.5331				
b3943	yijE	TU-2050	+		0.7819	0.7927	-0.0195	0.0098				
b3944	yijF	TU-2051	-		0.0897	0.6057	0.1601	0.0780				
b3945	gldA	TU-2052	-	S	0.0006	0.0539	0.7018	0.3150	4			
b3946	talC	TU-2052	-	S	0.0007	0.5278	0.5783	0.4715	4			
b3947	ptsA	TU-2052	-	S	0.0000	0.0854	0.6157	0.3801	4			
b3949	frwC	TU-2054	+	S	0.0006	0.9515	0.6110	0.6210	4			
b3950	frwB	TU-2054	+	S	0.0001	0.9941	0.5109	0.5100	4			
b3951	pflD	TU-2055	+	S	0.0001	0.4635	0.5020	0.5850	4			
b3952	pflC	TU-2055	+		0.0117	0.3261	0.3316	0.4607				
b3953	frwD	TU-2056	+	S	0.0002	0.7884	0.6610	0.7005	4			
b3954	yijO	TU-2057	-		0.4561	0.1076	-0.0374	-0.1744				
b3955	yijP	TU-2057	-		0.9867	0.0142	0.0029	-0.5801				
b3956	ppc	TU-2058	-		0.0093	0.1239	-0.2320	-0.0388				
b3957	argE	TU-2059	-	S	0.0000	0.0041	0.7491	0.3648	4			
b3958	argC	TU-2060	+		0.0111	0.1707	0.3412	0.0523				

b3959	argB	TU-2060	+	S		0.0001	0.1082	0.4842	0.2013	4			
b3960	argH	TU-2060	+			0.5192	0.2307	0.0735	-0.1532				
b3961	oxyR	TU-2061	+			0.0584	0.0355	0.1153	-0.0816	5	NO	NO	ORF
b3962	udhA	TU-2062	-	S	S	0.0004	0.0000	-0.4233	0.0896	4			
b3963	yijC	TU-2063	+			0.0585	0.1975	0.0991	-0.0102				
b3964	yijD	TU-2063	+			0.0085	0.5395	-0.1442	-0.0874				
b3965	trmA	TU-2064	-			0.4622	0.0585	0.0635	-0.1363	5	YES	NO	
b3966	btuB	TU-2065	+			0.7832	0.0879	0.0257	-0.2592	5	YES	NO	
b3967	murI	TU-2065	+	S		0.0000	0.7081	0.5283	0.4799	1			
b3969	gltT	TU-2066	+			0.0876	0.6905	-0.1421	-0.0883				
b3971	rrfB	TU-2066	+			0.9450	0.5779	0.0059	0.0962				
b3972	murB	TU-2067	+			0.8802	0.1245	-0.0183	-0.2720				
b3973	birA	TU-2067	+			0.9776	0.5806	-0.0023	-0.0731				
b3974	coaA	TU-2068	-			0.5054	0.2891	-0.0613	0.0819	5	YES	NO	
b3975	b3975	TU-2069	-			0.2546	0.5147	0.1738	0.0518	5	YES	YES	
b3976	thrU	TU-2070	+	S		0.0009	0.5617	-0.4686	-0.5791	1	YES	YES	
b3977	tyrU	TU-2070	+			0.6615	0.0747	-0.0627	-0.4081	5			
b3978	glyT	TU-2070	+			0.2583	0.8531	-0.2565	-0.3143	5			
b3979	thrT	TU-2070	+			0.7533	0.2016	-0.0714	-0.5379	5			
b3980	tufB	TU-2071	+	S		0.0021	0.0384	-0.2455	-0.4311	4			
b3981	secE	TU-2072	+			0.0023	0.3998	-0.2784	-0.3629				
b3982	nusG	TU-2072	+			0.1806	0.5224	0.1297	0.0262				
b3983	rplK	TU-2073	+			0.8130	0.7456	0.0196	-0.0157				
b3984	rplA	TU-2073	+			0.1097	0.8662	0.1183	0.1004				
b3985	rplJ	TU-2074	+			0.5329	0.4492	-0.0657	-0.1660				
b3986	rplL	TU-2074	+			0.9260	0.5164	-0.0082	0.0573				
b3987	rpoB	TU-2074	+			0.0272	0.3568	-0.3522	-0.5244	5	NO	NO	
b3988	rpoC	TU-2074	+			0.0460	0.4074	-0.2876	-0.4569	5			
b3989	htrC	TU-2075	+			0.9621	0.1602	0.0058	-0.2327				
b3990	thiH	TU-2076	-			0.7750	0.1122	0.0490	-0.3093				
b3991	thiG	TU-2076	-			0.0224	0.3971	0.3446	0.1908				
b3992	thiF	TU-2076	-			0.0107	0.0032	0.3833	-0.0835				
b3993	thiE	TU-2076	-			0.8069	0.0547	-0.0376	-0.4034				
b3994	thiC	TU-2076	-			0.1955	0.1293	0.1365	-0.0822				
b3995	yjaE	TU-2077	-			0.1359	0.7515	-0.1801	-0.2205				
b3996	yjaD	TU-2078	+			0.2491	0.6362	0.0702	0.0312				
b3997	hemE	TU-2078	+			0.8157	0.3173	0.0201	-0.1082				
b3998	nfi	TU-2078	+			0.0086	0.9997	0.2224	0.2224				
b3999	yjaG	TU-2078	+	S		0.0000	0.2753	0.4230	0.3065	4			
b4000	hupA	TU-2079	+	S		0.0001	0.7216	-0.6075	-0.5611	1	YES	YES	
b4001	yjaH	TU-2080	+			0.8141	0.8682	-0.0152	-0.0017				
b4002	yjaI	TU-2081	-			0.0112	0.9659	0.3855	0.3747				
b4003	hydH	TU-2082	+			0.0160	0.0151	0.1943	-0.0341				
b4004	hydG	TU-2082	+	S		0.0018	0.8593	0.3588	0.3415	4			
b4005	purD	TU-2083	-			0.0243	0.0576	0.1260	-0.0979				
b4006	purH	TU-2083	-	S		0.0005	0.0216	0.3155	0.0109	4			
b4008	gltV	TU-2084	+			0.0339	0.7050	-0.1903	-0.1403				
b4009	rrlE	TU-2084	+			0.2832	0.4404	0.0568	0.1034				
b4010	rrfE	TU-2085	+			0.0613	0.9962	-0.1267	-0.1273				
b4011	yjaA	TU-2086	+	S		0.0019	0.0110	0.4180	0.0175	4			
b4012	yjaB	TU-2087	-			0.0950	0.8205	0.2050	0.1683				
b4013	metA	TU-2088	+			0.2762	0.5241	-0.1466	-0.2666				
b4014	aceB	TU-2089	+			0.0043	0.0028	-0.2483	0.0789	5	YES	YES	
b4015	aceA	TU-2089	+	S		0.0000	0.3576	-1.0855	-1.2281	1			
b4016	aceK	TU-2089	+	S	S	0.0008	0.0001	-0.3522	0.0561	1	NO	NO	ORF
b4017	arp	TU-2090	-			0.8529	0.0068	-0.0186	0.3310				
b4018	iclR	TU-2091	-			0.0390	0.0332	0.1199	-0.0549				
b4019	metH	TU-2092	+			0.0156	0.7580	0.2263	0.2608				
b4020	yjbB	TU-2093	+			0.1009	0.1482	0.1360	0.2910				
b4021	pepE	TU-2094	-			0.9785	0.1662	0.0019	-0.2044				
b4022	yjbC	TU-2095	+			0.0031	0.0131	0.1812	-0.0387	3	NO	NO	IG2
b4023	yjbD	TU-2096	-			0.9530	0.3132	0.0069	-0.2152	3	NO	NO	IG2
b4024	lysC	TU-2096	-			0.0068	0.3408	-0.5994	-0.9660				

b#	gene	TU											
b4025	pgi	TU-2097	+			0.4128	0.5079	0.1266	0.0065				
b4026	yjbE	TU-2098	+			0.0114	0.6055	0.3405	0.4133				
b4027	yjbF	TU-2098	+	S		0.0001	0.0878	0.3891	0.5640	4			
b4028	yjbG	TU-2098	+	S		0.0005	0.4153	0.4475	0.5472	4			
b4029	yjbH	TU-2098	+			0.1696	0.1367	0.0943	0.2773				
b4030	yjbA	TU-2099	+			0.1634	0.3235	-0.1438	-0.3075	5	NO	YES	
b4031	xylE	TU-2100	-			0.0048	0.4037	0.6355	0.4458				
b4032	malG	TU-2101	-			0.0302	0.9407	0.3108	0.2966				
b4033	malF	TU-2101	-			0.0904	0.4538	0.1384	0.2317				
b4034	malE	TU-2101	-			0.0041	0.0091	-0.3797	0.4143				
b4035	malK	TU-2102	+			0.0182	0.0085	-0.4531	0.2699				
b4036	lamB	TU-2102	+			0.0266	0.0008	-0.5118	0.5558				
b4037	malM	TU-2102	+			0.9721	0.0147	0.0056	0.5207				
b4038	yjbI	TU-2103	+	S		0.0004	0.5894	0.7246	0.6011	4			
b4039	ubiC	TU-2104	+	S		0.0006	0.9084	0.4538	0.4691	4			
b4040	ubiA	TU-2104	+			0.0920	0.7691	0.1517	0.1808				
b4041	plsB	TU-2105	-			0.8824	0.0501	0.0118	-0.2266				
b4042	dgkA	TU-2106	+			0.2747	0.9335	-0.0603	-0.0725				
b4043	lexA	TU-2107	+			0.9470	0.0399	-0.0055	-0.2691				
b4044	dinF	TU-2107	+	S		0.0007	0.1355	0.2960	0.1360	4			
b4045	yjbJ	TU-2108	+			0.3585	0.9701	0.1460	0.1596				
b4046	yjbK	TU-2109	-			0.3243	0.0186	0.0408	-0.1091				
b4047	yjbL	TU-2110	+	S		0.0013	0.1791	0.4663	0.2546	4			
b4048	yjbM	TU-2110	+			0.0034	0.3393	0.5759	0.3590				
b4049	yjbN	TU-2111	+	S		0.0000	0.2889	0.4288	0.3371	4			
b4050	yjbO	TU-2111	+			0.0505	0.7684	0.2007	0.2438				
b4051	qor	TU-2112	-			0.0058	0.0607	-0.5088	-0.1206				
b4052	dnaB	TU-2113	+	S		0.0000	0.3298	0.3604	0.4381	4			
b4053	alr	TU-2114	+	S		0.0004	0.6255	0.5384	0.6040	4			
b4054	tyrB	TU-2115	+			0.1036	0.7932	-0.1667	-0.2026				
b4055	aphA	TU-2116	+			0.4156	0.0039	0.0416	0.3276				
b4056	yjbQ	TU-2117	+			0.0104	0.2200	-0.1733	-0.4871	5	YES	YES	
b4057	yjbR	TU-2117	+			0.1616	0.5808	0.1209	0.0048	5			
b4058	uvrA	TU-2118	-			0.0023	0.0643	0.2664	0.0639				
b4059	ssb	TU-2119	+			0.5573	0.8802	-0.0483	-0.0651				
b4060	yjcB	TU-2120	-			0.7328	0.2960	0.0401	-0.1069	5	YES	YES	
b4061	yjcC	TU-2121	+			0.7520	0.8922	-0.0381	-0.0139	5	YES	YES	
b4062	soxS	TU-2122	-			0.0339	0.5330	-0.5749	-0.4119				
b4063	soxR	TU-2123	+			0.1512	0.6452	0.1079	0.1612				
b4064	yjcD	TU-2124	+			0.2763	0.6938	-0.1961	-0.3156				
b4065	yjcE	TU-2125	+			0.0081	0.8692	-0.4471	-0.4147				
b4066	yjcF	TU-2126	-	S		0.0003	0.2950	1.0688	0.8161	1	YES	NO	
b4067	yjcG	TU-2127	-			0.0217	0.8702	0.4111	0.4437	5			
b4068	yjcH	TU-2127	-			0.3147	0.0387	-0.3017	0.3992	5			
b4069	acs	TU-2127	-			0.8839	0.0101	-0.0256	0.5435	5	NO	YES	
b4070	nrfA	TU-2128	+	S		0.0016	0.0304	0.3339	-0.1975	1	NO	YES	
b4071	nrfB	TU-2128	+		S	0.0249	0.0001	0.2233	-1.1315	5			
b4072	nrfC	TU-2128	+	S		0.0014	0.0109	0.5476	-0.0336	1			
b4073	nrfD	TU-2128	+			0.1038	0.6797	0.1930	0.1342	5			
b4074	nrfE	TU-2128	+			0.0498	0.5013	0.1622	0.0821	5			
b4075	nrfF	TU-2128	+			0.0109	0.3749	0.3022	0.1602	5			
b4076	nrfG	TU-2128	+			0.0027	0.5287	0.3168	0.2439	5			
b4077	gltP	TU-2129	+			0.0379	0.6517	-0.3960	-0.4890	5	YES	YES	
b4078	yjcO	TU-2130	-	S		0.0001	0.8016	0.4786	0.4459	1	YES	YES	
b4079	fdhF	TU-2131	-	S		0.0006	0.0200	0.4941	-0.7981	1	NO	NO	ORF
b4080	yjcP	TU-2132	-	S		0.0008	0.5295	0.4408	0.5133	4			
b4081	yjcQ	TU-2132	-			0.0153	0.6824	0.3860	0.3162				
b4082	yjcR	TU-2132	-	S		0.0002	0.6760	0.4583	0.4149	4			
b4083	yjcS	TU-2133	-			0.0081	0.8674	0.3243	0.3495				
b4084	yjcT	TU-2134	-			0.2804	0.2501	0.0810	-0.0357				
b4085	yjcU	TU-2134	-			0.0080	0.4333	0.3186	0.2139	5	NO	NO	
b4086	yjcV	TU-2134	-			0.2081	0.8645	0.1268	0.1062				
b4087	yjcW	TU-2134	-			0.0582	0.6642	0.2952	0.3695				

b4088	yjcX	TU-2135	-		0.0140	0.5265	0.3160	0.4041	5	YES	NO	ORF
b4089	rpiR	TU-2135	-		0.0060	0.8084	0.1736	0.1491				
b4090	rpiB	TU-2136	+		0.2423	0.0573	0.1056	0.3332				
b4092	phnP	TU-2138	-		0.6614	0.6954	0.0388	0.0997	5	NO	NO	
b4093	phnO	TU-2138	-		0.0117	0.8756	-0.1672	-0.1474				
b4094	phnN	TU-2138	-		0.0544	0.1996	0.2124	0.3671				
b4095	phnM	TU-2138	-		0.0427	0.3256	0.2472	0.3642				
b4096	phnL	TU-2138	-		0.0816	0.4181	0.1950	0.3002				
b4097	phnK	TU-2138	-		0.0081	0.1572	0.3694	0.5757				
b4098	phnJ	TU-2138	-		0.0057	0.8843	0.2995	0.3175				
b4099	phnI	TU-2138	-		0.0079	0.2151	0.3297	0.4889				
b4100	phnH	TU-2138	-		0.0270	0.2462	0.1864	0.3220				
b4101	phnG	TU-2138	-		0.0090	0.0898	0.1788	0.3268				
b4102	phnF	TU-2138	-		0.0021	0.6492	0.3756	0.3096				
b4103	b4103	TU-2138	-	S	0.0013	0.9143	0.5943	0.5749	4			
b4104	phnE	TU-2138	-	S	0.0001	0.4127	0.4649	0.3575	4			
b4105	phnD	TU-2138	-	S	0.0012	0.5192	0.4133	0.3225	4			
b4106	phnC	TU-2138	-	S	0.0009	0.4621	0.4962	0.3948	4			
b4107	phnB	TU-2139	-	S	0.0012	0.4183	0.4435	0.6181	1	NO	NO	
b4108	phnA	TU-2140	-		0.0079	0.0449	0.3285	0.7540	5	YES	YES	
b4109	yjdA	TU-2141	+		0.7370	0.4108	-0.0467	-0.4616	5	YES	YES	
b4110	yjcZ	TU-2141	+		0.0587	0.8226	0.2729	0.3385	5			
b4111	proP	TU-2142	+		0.0070	0.3990	-0.3463	-0.1944	5	YES	YES	
b4112	basS	TU-2143	-		0.4757	0.7556	0.0538	0.0152	5			
b4113	basR	TU-2143	-		0.8690	0.0739	-0.0088	0.1386	5			
b4114	yjdB	TU-2143	-		0.0116	0.2599	-0.2292	-0.0244	5			
b4115	yjdE	TU-2143	-		0.0260	0.0590	0.2588	-0.7738	5	NO	NO	
b4116	adiY	TU-2144	-		0.0346	0.0708	0.2929	-0.8411	5	NO	NO	ORF
b4117	adiA	TU-2145	-	S	0.0007	0.0637	0.3772	-0.0868	1	NO	NO	
b4118	melR	TU-2146	-		0.7032	0.3065	0.0212	0.1359				
b4119	melA	TU-2147	+		0.0514	0.7809	0.1438	0.1728				
b4120	melB	TU-2147	+		0.1178	0.7428	0.1266	0.0830	5	YES	YES	ORF
b4121	yjdF	TU-2148	-		0.0025	0.4764	0.3568	0.2649				
b4122	fumB	TU-2149	-	S	0.0000	0.1652	0.4509	0.0058	1	YES	NO	
b4123	dcuB	TU-2149	-		0.0191	0.6128	0.2151	0.3599				
b4124	yjdG	TU-2150	-		0.1074	0.0301	-0.0814	0.0772				
b4125	yjdH	TU-2150	-		0.0040	0.6948	0.1406	0.1048	5	NO	NO	ORF
b4126	yjdI	TU-2151	+		0.0045	0.0391	-0.5613	0.1497				
b4127	yjdJ	TU-2151	+	S	0.0004	0.0303	-0.9513	-0.0589	4			
b4128	yjdK	TU-2152	+		0.0060	0.0004	-0.3704	-1.1195				
b4129	lysU	TU-2153	-		0.2849	0.7766	-0.1676	-0.2228				
b4130	yjdL	TU-2154	-		0.1602	0.0827	0.1270	0.3150	5	YES	YES	
b4131	cadA	TU-2155	-		0.0112	0.8899	0.2743	0.2927				
b4132	cadB	TU-2155	-		0.0062	0.5117	0.3939	0.5088				
b4133	cadC	TU-2156	-		0.8389	0.0998	0.0284	-0.3095	5	YES	YES	
b4134	pheU	TU-2157	-		0.0315	0.9038	0.3674	0.3901	5	YES	YES	
b4135	yjdC	TU-2157	-	S	0.0000	0.4789	-0.7168	-0.6016	4			
b4136	dsbD	TU-2157	-		0.0407	0.3152	-0.3061	-0.1482				
b4137	cutA	TU-2157	-		0.0859	0.6136	-0.4029	-0.2781				
b4138	dcuA	TU-2158	-		0.1335	0.7471	-0.2302	-0.3053				
b4139	aspA	TU-2159	-		0.3056	0.0246	-0.1470	-0.5649	5	YES	NO	
b4140	b4140	TU-2160	+		0.3698	0.6384	0.1370	0.0593	5	YES	NO	
b4141	yjeH	TU-2161	-		0.6315	0.0369	0.0605	-0.2759	5	YES	YES	
b4142	mopB	TU-2162	+		0.2312	0.4548	0.1352	0.0273				
b4143	mopA	TU-2162	+		0.2075	0.1262	-0.1616	-0.4473				
b4144	yjeI	TU-2163	+		0.7827	0.2550	-0.0176	0.1264				
b4145	yjeJ	TU-2164	-		0.0104	0.6776	0.1855	0.1447				
b4146	yjeK	TU-2165	-	S	0.0001	0.8561	0.3749	0.3914	1	YES	YES	
b4147	efp	TU-2166	+	S	0.0018	0.7175	-0.3826	-0.3376	1	YES	YES	
b4148	sugE	TU-2167	+		0.0052	0.0366	0.3015	0.5262				
b4149	blc	TU-2168	-	S	0.0018	0.2659	-0.6699	-0.3489	4			
b4150	ampC	TU-2169	-	S	0.0000	0.2227	0.6015	0.4638	4			
b4151	frdD	TU-2170	-		0.2016	0.7746	0.1539	0.0825				

b4152	frdC	TU-2170	-		0.6364	0.3946	-0.0343	-0.1929				
b4153	frdB	TU-2170	-		0.0888	0.7778	-0.1823	-0.2387				
b4154	frdA	TU-2170	-		0.8480	0.3566	-0.0195	-0.1784				
b4155	yjeA	TU-2171	+	S	0.0000	0.0168	0.8002	0.5071	4			
b4156	yjeM	TU-2172	+	S	0.0000	0.1102	0.5665	0.3795	4			
b4157	yjeN	TU-2172	+	S	0.0003	0.3836	0.5092	0.6106	4			
b4158	yjeO	TU-2172	+		0.0067	0.9484	0.2418	0.2361				
b4159	yjeP	TU-2173	-		0.0124	0.1841	0.1383	0.0418	5	NO	NO	ORF
b4160	psd	TU-2173	-		0.0355	0.1753	0.1918	0.0335				
b4161	yjeQ	TU-2173	-		0.0516	0.3968	0.1157	0.0358				
b4162	yjeR	TU-2174	+	S	0.0000	0.4938	0.3724	0.2856	4			
b4163	glyV	TU-2175	+		0.7688	0.6277	0.0555	-0.0885	5	YES	YES	
b4164	glyX	TU-2175	+		0.0556	0.7390	0.4264	0.3109	5			
b4165	glyY	TU-2175	+		0.0166	0.9172	0.5454	0.5099	5			
b4166	yjeS	TU-2176	-	S	0.0008	0.6183	0.2661	0.1980	4			
b4167	yjeF	TU-2177	+		0.7851	0.3846	-0.0151	-0.1190				
b4168	yjeE	TU-2177	+		0.0147	0.1677	-0.1834	-0.2955				
b4169	amiB	TU-2177	+		0.0496	0.3426	-0.2745	-0.4182				
b4170	mutL	TU-2177	+		0.0488	0.3958	-0.3990	-0.5867				
b4171	miaA	TU-2177	+		0.0124	0.1987	-0.2928	-0.1324				
b4172	hfq	TU-2177	+		0.1491	0.3622	-0.1986	-0.0461				
b4173	hflX	TU-2177	+		0.3694	0.2563	0.0804	-0.0313				
b4174	hflK	TU-2177	+		0.0672	0.1389	-0.2338	-0.4778				
b4175	hflC	TU-2177	+		0.0406	0.0654	-0.4020	-0.8128				
b4176	yjeT	TU-2178	+		0.5866	0.7765	0.0744	0.1188				
b4177	purA	TU-2179	+		0.4207	0.5647	-0.1365	-0.0025	5	YES	YES	
b4178	yjeB	TU-2180	+		0.6880	0.3146	-0.0416	0.0992				
b4179	vacB	TU-2180	+		0.0091	0.1421	0.2573	0.0865				
b4180	yjfH	TU-2181	+	S	0.0020	0.7511	0.3430	0.3032	1	NO	NO	
b4181	yjfI	TU-2182	+	S	0.0000	0.0045	0.8474	0.3532	4			
b4182	yjfJ	TU-2182	+		0.0042	0.5503	0.4279	0.3392				
b4183	yjfK	TU-2182	+		0.0054	0.9726	0.5296	0.5233				
b4184	yjfL	TU-2182	+		0.0058	0.2510	0.5133	0.3178				
b4185	yjfM	TU-2182	+	S	0.0012	0.8483	0.4546	0.4305	4			
b4186	yjfC	TU-2182	+	S	0.0006	0.7081	0.6065	0.6651	4			
b4187	aidB	TU-2183	+		0.0021	0.9138	-0.6077	-0.5559				
b4188	yjfN	TU-2184	-		0.0091	0.9905	0.3836	0.3814				
b4189	yjfO	TU-2184	-	S	0.0002	0.1796	-0.3981	-0.1711	4			
b4190	yjfP	TU-2185	+		0.1399	0.8504	0.1499	0.1713				
b4191	yjfQ	TU-2186	-		0.3308	0.7367	0.0791	0.0292				
b4192	yjfR	TU-2187	-	S	0.0009	0.5439	0.4226	0.4914	4			
b4193	sgaT	TU-2188	+		0.0033	0.5373	0.4381	0.5272				
b4194	sgaB	TU-2188	+	S	0.0020	0.1550	0.2589	0.1172	1	NO	NO	
b4195	ptxA	TU-2188	+	S	0.0009	0.3984	0.2336	0.1662	4			
b4196	sgaH	TU-2188	+		0.0052	0.6840	0.3985	0.3462				
b4197	sgaU	TU-2188	+		0.0494	0.5866	0.1875	0.2536				
b4198	sgaE	TU-2188	+		0.0122	0.9427	0.3153	0.3066				
b4199	yjfY	TU-2189	-	S	0.0015	0.7049	0.4008	0.3383	1	YES	YES	
b4200	rpsF	TU-2190	+		0.0299	0.5854	0.1261	0.0679	5	YES	YES	
b4201	priB	TU-2190	+		0.0318	0.6572	0.0944	0.1480	5			
b4202	rpsR	TU-2190	+		0.1814	0.8820	-0.1574	-0.1368	5			
b4203	rplI	TU-2190	+		0.0738	0.5276	-0.1849	-0.2946	5			
b4204	yjfZ	TU-2191	-		0.7993	0.7671	0.0200	-0.0080				
b4205	ytfA	TU-2192	+		0.0368	0.5130	0.2225	0.3089	3	NO	NO	IG2
b4206	ytfB	TU-2193	-		0.4377	0.4800	-0.0530	0.0214	3	NO	NO	IG2
b4207	fklB	TU-2194	+		0.7233	0.7066	-0.0251	-0.0824				
b4208	cycA	TU-2195	+		0.0303	0.5811	-0.1904	-0.1284				
b4209	ytfE	TU-2196	-		0.1178	0.8352	0.1743	0.2010				
b4210	ytfF	TU-2197	-		0.9312	0.3729	0.0061	0.1081				
b4211	ytfG	TU-2198	-		0.4102	0.7485	0.0793	0.1159				
b4212	ytfH	TU-2199	+		0.1684	0.9422	0.1354	0.1255				
b4213	cpdB	TU-2200	-		0.3613	0.5414	0.1116	0.2013				
b4214	cysQ	TU-2201	+		0.0846	0.0951	-0.2065	0.0442				

b4215	ytfI	TU-2202	+		0.0091	0.0358	0.6291	0.0924	3	YES	YES	IG2
b4216	ytfJ	TU-2203	-	S	0.0007	0.5854	0.4400	0.3611	4	YES	YES	IG2
b4217	ytfK	TU-2204	+	S	0.0004	0.3384	-0.5493	-0.3251	4			
b4218	ytfL	TU-2205	-	S	0.0000	0.0006	0.5792	0.2186	4			
b4219	msrA	TU-2206	-	S	0.0012	0.0862	-0.3750	-0.6221	1	YES	YES	
b4220	ytfM	TU-2207	+		0.0393	0.8627	0.1242	0.1420				
b4221	ytfN	TU-2207	+		0.0073	0.3137	0.2539	0.3495				
b4222	ytfP	TU-2207	+	S	0.0005	0.5604	-0.2909	-0.3504	4			
b4223	yjfA	TU-2208	-		0.6965	0.4050	0.0329	0.1462				
b4224	chpS	TU-2209	+	S	0.0017	0.7009	0.3621	0.4091	4			
b4225	chpB	TU-2209	+		0.9978	0.6702	0.0002	0.0403				
b4226	ppa	TU-2210	-		0.1149	0.4844	0.1190	0.0249	5	YES	YES	
b4227	ytfQ	TU-2211	+		0.0913	0.2135	0.1815	0.3635	5	YES	YES	
b4228	ytfR	TU-2211	+		0.3563	0.2935	0.0486	0.1243	5			
b4229	ytfS	TU-2211	+	S	0.0004	0.8650	0.5466	0.5259	1			
b4230	ytfT	TU-2211	+		0.0171	0.4083	0.3665	0.5003	5			
b4231	yjfF	TU-2211	+		0.0163	0.7678	0.2661	0.2300	5	NO	NO	IG2
b4232	fbp	TU-2212	-		0.1846	0.3213	0.1153	0.0097	3	NO	NO	IG2
b4233	yjfG	TU-2213	+	S	0.0003	0.9993	0.3545	0.3546	1	NO	NO	ORF
b4234	yjgA	TU-2214	-		0.6689	0.9558	-0.0439	-0.0517				
b4235	pmbA	TU-2215	+		0.6965	0.2023	-0.0346	-0.2286				
b4236	cybC	TU-2215	+		0.0159	0.5915	0.2255	0.1579				
b4237	nrdG	TU-2216	-		0.1491	0.7786	0.1943	0.2393	5			
b4238	nrdD	TU-2216	-		0.9418	0.7765	0.0054	0.0451	5	YES	NO	
b4239	treC	TU-2217	-		0.0103	0.0575	0.2087	0.3864				
b4240	treB	TU-2217	-		0.9854	0.0197	-0.0016	0.2797				
b4241	treR	TU-2218	-		0.5748	0.6490	0.0254	0.0575				
b4242	mgtA	TU-2219	+		0.0851	0.1508	0.1917	-0.1142				
b4243	yjgF	TU-2220	-	S	0.0000	0.0012	-0.7579	-0.2716	4			
b4244	pyrI	TU-2221	-	S	0.0000	0.0131	-0.7261	-0.3668	4			
b4245	pyrB	TU-2221	-	S	0.0000	0.0017	-0.8285	-0.4446	4			
b4246	pyrL	TU-2222	-		0.0067	0.7233	-1.9350	-2.1835				
b4247	yjgG	TU-2223	+		0.8795	0.5230	0.0189	-0.0917				
b4248	yjgH	TU-2224	-	S	0.0017	0.0333	-0.5926	-0.0796	4			
b4249	yjgI	TU-2224	-		0.0025	0.2252	0.2891	0.4340				
b4250	b4250	TU-2225	+		0.9162	0.6072	-0.0157	0.0993				
b4251	yjgJ	TU-2225	+		0.5781	0.3009	0.0496	-0.0916				
b4252	yjgK	TU-2226	+		0.3280	0.1992	0.1319	-0.1036				
b4253	yjgL	TU-2226	+		0.0046	0.0856	0.5777	0.2281				
b4254	argI	TU-2227	-		0.1365	0.0836	0.2886	-0.1093				
b4255	yjgD	TU-2228	+		0.6280	0.1258	0.0489	-0.2112	5	YES	NO	ORF
b4256	b4256	TU-2229	-		0.0024	0.3627	0.3197	0.2196				
b4257	yjgN	TU-2230	+	S	0.0001	0.0412	0.6164	0.3106	1	NO	NO	ORF
b4258	valS	TU-2231	-		0.0025	0.9065	0.3309	0.3113	5	NO	NO	ORF
b4259	holC	TU-2231	-	S	0.0017	0.9119	0.5048	0.5259	4			
b4260	pepA	TU-2231	-		0.0580	0.5643	-0.1533	-0.2595				
b4261	yjgP	TU-2232	+		0.3664	0.4878	-0.0433	-0.1088				
b4262	yjgQ	TU-2232	+		0.2111	0.7271	-0.0925	-0.0582				
b4263	yjgR	TU-2233	-		0.0560	0.8952	0.2298	0.2528	5	NO	YES	
b4264	idnR	TU-2234	-		0.7347	0.6497	-0.0293	0.0168				
b4265	idnT	TU-2234	-		0.2430	0.6381	0.1444	0.2101				
b4266	idnO	TU-2234	-		0.0082	0.9420	0.3903	0.4001				
b4267	idnD	TU-2234	-		0.0036	0.7993	0.3996	0.4339				
b4268	idnK	TU-2235	+		0.0095	0.3185	0.2688	0.1157				
b4269	yjgB	TU-2236	-		0.0834	0.6435	-0.1283	-0.0815				
b4270	leuX	TU-2237	+		0.0857	0.2130	-0.2884	0.0763	5	YES	YES	
b4271	intB	TU-2238	+		0.1790	0.5431	-0.1180	-0.2353				
b4272	yi21	TU-2239	+		0.0985	0.3849	0.1978	0.3396				
b4274	yjgW	TU-2240	+		0.0374	0.5530	0.3167	0.2189	3	NO	NO	IG2
b4275	yjgX	TU-2241	-		0.0724	0.7233	0.1772	0.2288	3	NO	NO	IG2
b4276	yjgY	TU-2241	-		0.0200	0.8135	0.2767	0.3115				
b4277	yjgZ	TU-2242	+		0.0129	0.3713	0.4224	0.5704				
b4278	yi41	TU-2243	-	S	0.0000	0.2025	0.3484	0.1276	1	YES	YES	

b-number	gene	TU	strand	S	val1	val2	val3	val4	n	col1	col2	col3
b4279	yjhB	TU-2244	+		0.7944	0.1983	-0.0446	-0.3250	5	YES	YES	
b4280	yjhC	TU-2244	+		0.8958	0.0048	0.0130	-0.4194	5	NO	YES	IG2
b4281	yjhD	TU-2245	-		0.7965	0.5325	0.0248	0.1099	3	NO	YES	IG2
b4282	yjhE	TU-2246	+		0.7657	0.2833	0.0338	0.1966				
b4283	yi91b	TU-2246	+		0.6533	0.1127	-0.0453	0.1656				
b4284	tra8	TU-2247	-	S	0.0009	0.1780	-0.4806	-0.6881	4			
b4285	b4285	TU-2248	+		0.1240	0.1881	0.1320	0.2683				
b4286	b4286	TU-2249	+		0.1988	0.1706	0.1279	0.2785				
b4287	fecE	TU-2250	-		0.5009	0.7055	0.0910	0.1514				
b4288	fecD	TU-2250	-		0.1164	0.2692	0.2528	0.4578				
b4289	fecC	TU-2250	-		0.6357	0.1428	0.0366	0.2119				
b4290	fecB	TU-2250	-		0.0134	0.7176	0.2538	0.3040				
b4291	fecA	TU-2250	-		0.0250	0.6290	0.2581	0.2007				
b4292	fecR	TU-2251	-		0.0022	0.2978	0.6583	0.4602				
b4293	fecI	TU-2251	-		0.0484	0.3883	0.3850	0.1789				
b4294	insA	TU-2252	+		0.0098	0.0940	0.4021	0.1379				
b4295	yjhU	TU-2253	-		0.1586	0.0902	-0.1073	-0.3210	5	YES	YES	
b4296	yjhF	TU-2254	-		0.0044	0.4746	0.3287	0.4088				
b4297	yjhG	TU-2254	-		0.0029	0.3637	0.4515	0.5777				
b4298	yjhH	TU-2254	-		0.0080	0.9981	0.2078	0.2080				
b4299	yjhI	TU-2254	-	S	0.0013	0.4405	0.3697	0.2562	4			
b4300	sgcR	TU-2255	-		0.2521	0.4744	0.1134	0.2053	5			
b4301	sgcE	TU-2255	-		0.0188	0.8483	0.2339	0.2575	5			
b4302	sgcA	TU-2255	-		0.3663	0.1113	0.0760	-0.1136	5	YES	YES	
b4303	sgcQ	TU-2255	-		0.0068	0.9529	0.3691	0.3765	5			
b4304	sgcC	TU-2255	-		0.0123	0.9151	0.3658	0.3808	5			
b4305	sgcX	TU-2255	-		0.0119	0.4970	0.4008	0.5133	5	NO	YES	
b4306	yjhP	TU-2256	-		0.0059	0.4144	0.4961	0.6342				
b4307	yjhQ	TU-2256	-		0.0038	0.1272	0.2628	0.1262				
b4308	yjhR	TU-2257	+		0.2096	0.3031	0.1333	-0.0399	3	YES	YES	IG2
b4309	yjhS	TU-2258	-		0.3017	0.3081	0.0920	-0.0422	3	YES	YES	IG2
b4310	yjhT	TU-2258	-		0.1609	0.0754	-0.2216	0.2052				
b4311	yjhA	TU-2258	-	S	0.0016	0.9826	0.6291	0.6253	4			
b4312	fimB	TU-2259	+		0.0375	0.0827	0.2709	0.5308	5	YES	YES	
b4313	fimE	TU-2259	+	S	0.0012	0.7902	0.6493	0.6975	1	YES	NO	
b4314	fimA	TU-2259	+	S	0.0002	0.6592	1.4808	1.2917	1			
b4315	fimI	TU-2259	+	S	0.0000	0.5870	1.5355	1.3129	1			
b4316	fimC	TU-2259	+	S	0.0000	0.8032	2.0612	2.1518	1			
b4317	fimD	TU-2259	+	S	0.0001	0.0154	0.5920	0.9951	1			
b4318	fimF	TU-2259	+	S	0.0000	0.2361	0.9339	1.2034	1	NO	NO	
b4319	fimG	TU-2259	+	S	0.0000	0.9833	0.6922	0.6965	1			
b4320	fimH	TU-2259	+	S	0.0001	0.1845	0.3961	0.5925	1			
b4321	gntP	TU-2260	-		0.6159	0.1153	0.0451	0.2507	5	NO	NO	
b4322	uxuA	TU-2261	+		0.0398	0.0172	-0.2219	0.0602	5	NO	NO	
b4323	uxuB	TU-2261	+		0.1635	0.1371	0.1328	0.3184	5			
b4324	uxuR	TU-2262	+		0.3129	0.8708	0.1200	0.0965				
b4325	yjiC	TU-2263	-	S	0.0006	0.5190	0.4651	0.5762	4			
b4326	yjiD	TU-2264	+		0.1236	0.2643	0.3576	-0.0271				
b4327	yjiE	TU-2265	-		0.0024	0.1965	0.4123	0.2068				
b4328	iadA	TU-2265	-	S	0.0017	0.0128	0.4129	-0.1675	1	YES	NO	
b4329	yjiG	TU-2265	-	S	0.0009	0.0142	0.5403	-0.1659	4			
b4330	yjiH	TU-2265	-		0.0118	0.0197	0.3401	-0.3701				
b4331	yjiI	TU-2266	+	S	0.0007	0.0305	0.2740	0.0633	4			
b4332	yjiJ	TU-2267	-		0.0632	0.0507	0.2107	0.4995				
b4333	yjiK	TU-2267	-		0.1023	0.4497	0.2596	0.4354	5	NO	YES	ORF
b4334	yjiL	TU-2268	-	S	0.0011	0.5409	0.3707	0.5737	4			
b4335	yjiM	TU-2268	-	S	0.0018	0.1620	0.4535	1.3065	4			
b4336	yjiN	TU-2269	-		0.1172	0.0041	-0.1468	0.2355	5			
b4337	yjiO	TU-2269	-		0.0391	0.1495	0.1676	0.3412	5	YES	YES	
b4338	yjiP	TU-2270	+		0.1623	0.0811	0.2210	0.5316	5	YES	YES	
b4339	yjiQ	TU-2270	+		0.0091	0.8123	0.3864	0.4410	5			
b4340	yjiR	TU-2271	-		0.0055	0.2875	0.2910	0.4098				
b4341	yjiS	TU-2272	+	S	0.0004	0.7754	0.4028	0.3725	4			

b4342	yjiT	TU-2273	+	S	0.0000	0.0042	-0.5561	-0.2001	1	YES	YES	
b4343	yjiU	TU-2274	+		0.7853	0.1808	-0.0168	0.1136				
b4344	mcrD	TU-2274	+	S	0.0012	0.2698	0.3883	0.5286	4			
b4345	mcrC	TU-2275	-		0.1702	0.0024	-0.1669	-0.6631				
b4346	mcrB	TU-2275	-		0.0327	0.0081	0.1598	-0.1803				
b4347	yjiW	TU-2276	-		0.3080	0.9976	0.0682	0.0679				
b4348	hsdS	TU-2277	-		0.3559	0.0867	0.1088	-0.1497	5	NO	NO	ORF
b4349	hsdM	TU-2277	-	S	0.0000	0.0345	0.2485	0.0902	4			
b4350	hsdR	TU-2278	-		0.4115	0.8234	0.0331	0.0194				
b4351	mrr	TU-2279	+		0.3590	0.9485	-0.0894	-0.0971				
b4352	yjiA	TU-2280	-		0.7056	0.0795	0.0281	0.1842	5			
b4353	yjiX	TU-2280	-		0.2087	0.2896	-0.0898	0.0070	5			
b4354	yjiY	TU-2280	-		0.1141	0.0041	0.1610	-0.2603	5	YES	NO	
b4355	tsr	TU-2281	+		0.7561	0.4247	-0.0409	-0.3389	5	YES	NO	
b4356	yjiZ	TU-2282	-		0.9197	0.6371	-0.0088	-0.0782				
b4357	yjjM	TU-2283	-		0.0043	0.2120	-0.3147	-0.1522				
b4358	yjjN	TU-2284	+		0.0237	0.1211	0.2596	0.4873				
b4359	mdoB	TU-2285	-		0.2949	0.6106	0.1646	0.0487				
b4360	yjjA	TU-2286	-		0.0025	0.1211	0.4652	0.2300				
b4361	dnaC	TU-2287	-		0.2895	0.2279	0.1551	-0.0517				
b4362	dnaT	TU-2287	-	S	0.0002	0.2075	0.5184	0.3732	4			
b4363	yjjB	TU-2288	-		0.0582	0.0495	0.4268	-0.0592				
b4364	yjjP	TU-2288	-		0.0065	0.1119	0.5211	0.2080				
b4365	yjjQ	TU-2289	+	S	0.0006	0.8148	0.7202	0.6667	4			
b4366	bglJ	TU-2289	+		0.2260	0.4977	0.1555	0.2673				
b4367	fhuF	TU-2290	-		0.8378	0.4748	-0.0863	0.2521				
b4368	leuV	TU-2291	-		0.0440	0.9048	0.4053	0.3769	5			
b4369	leuP	TU-2291	-		0.1182	0.9121	0.3446	0.3791	5			
b4370	leuQ	TU-2291	-		0.0967	0.8088	0.3610	0.4191	5	YES	YES	
b4371	yjjT	TU-2292	-	S	0.0011	0.2931	0.3710	0.2501	4			
b4372	holD	TU-2293	+		0.0614	0.5125	0.2068	0.0880				
b4373	rimI	TU-2293	+	S	0.0001	0.5197	0.4226	0.3448	4			
b4374	yjjG	TU-2293	+		0.4582	0.1133	0.0493	-0.1381				
b4375	prfC	TU-2293	+	S	0.0001	0.1373	0.5055	0.2654	4			
b4376	osmY	TU-2294	+	S	0.0000	0.0003	-1.2259	0.0700	1	YES	NO	
b4377	yjjU	TU-2294	+		0.2260	0.2147	-0.1394	-0.4629	5			
b4378	yjjV	TU-2294	+		0.1400	0.3842	0.1603	0.0180	5			
b4379	yjjW	TU-2295	-		0.0103	0.8862	0.4060	0.3850				
b4380	yjjI	TU-2295	-		0.0041	0.0086	0.4664	-0.0893				
b4381	deoC	TU-2296	+		0.2631	0.8348	0.1342	0.0968				
b4382	deoA	TU-2296	+	S	0.0000	0.8829	-0.3955	-0.3686	4			
b4383	deoB	TU-2296	+	S	0.0010	0.3318	-0.4012	-0.5638	4			
b4384	deoD	TU-2296	+		0.0407	0.1164	-0.1845	-0.3762				
b4385	yjjJ	TU-2297	+		0.0035	0.7273	0.2269	0.2001				
b4386	lplA	TU-2298	-		0.0185	0.7484	0.1579	0.1361				
b4387	smp	TU-2298	-	S	0.0000	0.8539	0.3664	0.3535	4			
b4388	serB	TU-2299	+	S	0.0000	0.8699	0.4826	0.4975	4			
b4389	sms	TU-2299	+	S	0.0000	0.1872	0.4257	0.2987	4			
b4390	nadR	TU-2299	+		0.2994	0.5163	0.0598	0.1255				
b4391	yjjK	TU-2300	-		0.1633	0.3669	0.1140	0.2238				
b4392	slt	TU-2301	+		0.5014	0.9111	-0.0468	-0.0349				
b4393	trpR	TU-2302	+		0.0718	0.8909	0.1514	0.1352				
b4394	yjjX	TU-2303	-		0.0740	0.3671	0.1698	0.2653				
b4395	gpmB	TU-2304	+		0.0129	0.4543	-0.2298	-0.3119				
b4396	rob	TU-2305	-		0.0792	0.4510	-0.2377	-0.3736				
b4397	creA	TU-2306	+		0.0575	0.0447	-0.2566	0.0765				
b4398	creB	TU-2306	+		0.9294	0.7372	-0.0126	0.0559				
b4399	creC	TU-2306	+		0.7098	0.0682	-0.0367	0.1954				
b4400	creD	TU-2306	+		0.0963	0.6727	0.1409	0.2033	5	NO	NO	
b4401	arcA	TU-2307	-		0.7872	0.8293	-0.0380	-0.0008				
b4402	yjjY	TU-2308	+		0.1237	0.0673	-0.3125	-0.7976				
b4403	lasT	TU-2309	+	S	0.0016	0.2561	0.3444	0.2124	4			

Supplementary Table S2. Fis-binding sites identified by genome-wide ChIP-chip analysis. Numbers "1" and "0" in columns 3, 7, 8, 12, and 13 denote the presence and absence of the binding peak, respectively.

bnum	Gene	Promoter		Adjunct gene		ChIP-chip		Peak probe position		Ratio	RNAP	S70
				bnum	name	Aerobic	Anaerobic	Start	End		w/Rif	
b0015	dnaJ	0	orf			1	1	14351	14400	1.15	0	0
b0016	yi81_1	1				1	1	15401	15450	1.28	0	1
b0020	nhaR	0	ig	b0021	insB_1	1	1	19401	19450	0.95	0	1
b0025	ribF	0	orf			1	1	21626	21675	2.64	0	0
b0036	caiD	1				1	1	36334	36383	1.63	0	0
b0041	fixA	1		b0040	caiT	1	1	42284	42333	0.89	0	1
b0055	djlA	0	orf			1	1	57784	57833	0.67	0	0
b0063	araB	1		b0064	araC	1	1	70159	70208	0.62	0	0
b0070	yabM	1				1	1	77484	77533	0.59	1	1
b0070	yabM	0	ig	b0071	leuD	1	1	78559	78608	0.88	0	0
b0073	leuB	0	orf			1	1	81259	81308	1.81	0	0
b0074	leuA	0	orf			1	1	82209	82258	1.73	0	0
b0081	yabB	1				1	1	89334	89383	1.66	1	1
b0087	mraY	1				1	1	95784	95833	0.67	0	0
b0093	ftsQ	1				1	1	102684	102733	0.56	0	0
b0097	yacA	1				1	1	107859	107908	1.96	1	1
b0098	secA	0	orf			1	1	109434	109483	0.95	0	0
b0112	aroP	1		b0113	pdhR	1	1	121534	121583	2.44	1	1
b0118	acnB	1		b0117	yacH	1	1	131421	131470	0.83	1	1
b0121	speE	1				1	1	136646	136695	1.11	1	0
b0123	cueO	1		b0122	yacC	1	1	137071	137120	0.90	1	0
b0125	hpt	0	orf			1	1	141821	141870	1.00	0	0
b0134	panB	1				1	1	149576	149625	1.29	1	1
b0135	yadC	1				1	1	150801	150850	1.85	1	1
b0139	htrE	1				1	1	155326	155375	0.63	1	1
b0140	ecpD	1				1	1	156251	156300	0.64	0	0
b0141	yadN	1				1	1	156776	156825	0.74	0	1
b0150	fhuA	1				1	1	167351	167400	1.18	1	1
b0156	yadR	1				1	1	176601	176650	1.72	1	1
b0159	pfs	1				1	1	179026	179075	0.64	1	1
b0164	yeaI	1				1	1	184932	184981	1.80	0	0
b0166	dapD	1				1	1	186357	186406	1.78	1	1
b0170	tsf	0	orf			1	1	191107	191156	0.86	0	0
b0176	yaeL	0	orf			1	1	197157	197206	1.27	0	0
b0179	lpxD	0	orf			1	1	200982	201031	1.08	0	0
b0185	accA	1				1	1	208507	208556	0.58	1	1
b0199	metN	1		b0200	gmhB	1	1	222807	222856	3.26	1	0
b0201	rrsH	1				1	1	223332	223381	3.09	1	1
b0210	yafE	0	orf			1	1	232187	232236	2.18	0	0
b0211	mltD	1				1	1	233987	234036	1.77	1	1
b0214	rnhA	1		b0215	dnaQ	1	1	236013	236062	1.48	1	1
b0216	aspV	1				1	1	236763	236812	1.06	1	1
b0218	yafU	1				1	1	239288	239337	0.92	1	0
b0221	fadE	1		b0222	lpcA	1	1	243413	243462	1.64	1	1
b0226	dinJ	1		b0227	yafL	1	1	246713	246762	2.07	1	1
b0231	dinB	1				1	1	251013	251062	2.73	1	0
b0239	frsA	1				1	1	256538	256587	1.89	1	0
b0240	crl	0	ig	b0241	phoE	1	1	258188	258237	1.91	0	0
b0244	thrW	1				1	1	261814	261863	1.12	1	1
b0258	ykfC	0	ig	b0259	trs5_1	1	1	273189	273238	0.92	0	1
b0267	yagA	1		b0628	yagE	1	1	281414	281463	1.36	0	0
b0269	yagF	0	orf			1	1	283114	283163	1.09	0	0
b0278	yagL	1				1	1	293065	293114	3.38	0	0
b0286	yagT	1		b0287	yagU	1	1	301890	301939	0.99	1	1

b0290	yagW	0	orf			1	1	305715	305764	2.53	0	0
b0295	ykgL	1		b0296	ykgM	1	1	311843	311892	2.22	1	0
b0297	eaeH	1				1	1	313093	313142	2.09	0	0
b0300	ykgA	0	orf			1	1	315868	315917	0.69	0	0
b0308	ykgG	0	orf			1	1	323068	323117	0.69	0	0
b0312	betB	0	orf			1	1	327443	327492	0.60	0	0
b0316	yahB	0	orf			1	1	333418	333467	3.25	0	0
b0317	yahC	1		b0318	yahD	1	1	333918	333967	3.35	0	0
b0327	yahM	1				1	1	344468	344517	3.65	1	1
b0328	yahN	0	orf			1	1	344993	345042	3.65	0	0
b0329	yahO	1				1	1	345568	345617	3.05	0	0
b0365	tauA	1		b0364	yaiS	1	1	384256	384305	1.30	1	1
b0374	yaiU	0	orf			1	1	393011	393060	0.97	0	0
b0390	aroM	0	orf			1	1	407180	407229	1.26	0	0
b0401	brnQ	1				1	1	418681	418730	3.95	1	1
b0404	yajB	1		b0405	queA	1	1	424231	424280	0.87	1	1
b0409	secF	1				1	1	428784	428833	1.19	0	0
b0420	dxs	1				1	1	439262	439311	1.00	0	1
b0432	cyoA	1				1	1	451162	451211	0.79	1	1
b0434	yajG	1		b0435	bolA	1	1	453612	453661	1.04	1	1
b0436	tig	1				1	1	454162	454211	0.73	1	1
b0437	clpP	1				1	1	455587	455636	0.99	1	1
b0439	lon	1				1	1	458180	458229	2.69	1	1
b0450	glnK	1				1	1	471630	471679	1.39	0	0
b0455	ffs	1				1	1	475655	475704	3.92	1	1
b0462	acrB	0	orf			1	1	483258	483307	0.95	0	0
b0469	apt	1				1	1	490583	490632	0.89	0	1
b0476	aes	1		b0477	gsk	1	1	499233	499282	1.62	1	1
b0481	ybaK	0	orf			1	1	506039	506088	0.61	0	0
b0484	copA	1		b0485	ybaS	1	1	510664	510713	0.87	1	1
b0489	ybbK	1		b0490	ybbL	1	1	515164	515213	1.31	1	1
b0491	ybbM	0	orf			1	1	516164	516213	1.44	0	0
b0497	rhsD	1				1	1	522664	522713	0.83	1	1
b0502	ylbG	0	orf			1	1	528989	529038	0.81	0	0
b0503	ybbB	1				1	1	530414	530463	1.14	0	0
b0504	ybbS	1				1	1	531389	531438	0.98	0	0
b0505	allA	1				1	1	531739	531788	1.00	0	0
b0509	glxR	0	orf			1	1	536289	536338	0.57	0	0
b0512	allB	0	orf			1	1	539714	539763	1.49	0	0
b0525	ppiB	1		b0526	cysS	1	1	553714	553763	2.80	1	1
b0529	folD	1		b0530	sfmA	1	1	557214	557263	0.68	1	1
b0531	sfmC	1				1	1	558189	558238	0.94	0	0
b0533	sfmH	0	orf			1	1	562114	562163	1.81	0	0
b0534	sfmF	0	orf			1	1	562664	562713	1.82	0	0
b0536	argU	1				1	1	563839	563888	1.05	1	1
b0545	ybcL	1				1	1	569590	569639	2.12	1	0
b0551	ybcQ	0	ig	b0552	trs5_2	1	1	573841	573890	0.92	1	1
b0553	nmpC	1		b0554	ybcR	1	1	576266	576315	0.71	1	1
b0559	ybcW	1				1	1	579078	579127	2.04	1	0
b0560	nohB	1				1	1	579578	579627	2.17	0	0
b0564	appY	1				1	1	582740	582789	0.66	1	1
b0569	nfrB	1				1	1	592640	592689	0.69	0	0
b0571	cusR	1		b0572	cusC	1	1	594515	594564	1.48	1	1
b0581	ybdK	1		b4415	hokE	1	1	606720	606769	2.85	1	1
b0582	yi81_2	0	ig	b0583	entD	1	1	608845	608894	1.29	0	1
b0584	fepA	1				1	1	611670	611719	1.41	0	1
b0585	fes	1				1	1	611995	612044	1.76	0	1
b0600	ybdL	0	orf			1	1	633271	633320	0.96	0	0
b0602	ybdN	0	orf			1	1	634796	634845	0.99	0	0

b0603	ybdO	1				1	1	636646	636695	1.41	1	1
b0610	rnk	1				1	1	643481	643530	2.66	1	1
b0614	citX	0	orf			1	1	646839	646888	1.26	0	0
b0621	dcuC	1		b0622	crcA	1	1	655174	655223	3.65	1	1
b0627	tatE	1				1	1	658099	658148	1.66	0	0
b0628	lipA	1				1	1	659824	659873	2.96	1	1
b0631	ybeD	1				1	1	661699	661748	3.56	1	1
b0632	dacA	0	orf			1	1	662274	662323	3.89	0	0
b0635	mrdA	0	orf			1	1	665830	665879	1.22	0	0
b0646	ybeS	0	orf			1	1	677055	677104	1.43	0	0
b0654	gltJ	0	orf			1	1	685405	685454	0.85	0	0
b0655	gltI	1				1	1	687130	687179	0.87	0	0
b0673	metT	1				1	1	696630	696679	1.03	1	0
b0674	asnB	1				1	1	698505	698554	0.83	0	0
b0675	nagD	1				1	1	699430	699479	1.43	0	1
b0680	glnS	1				1	1	705380	705429	1.02	1	1
b0681	ybfM	1				1	1	707480	707529	0.90	0	0
b0685	ybfE	1				1	1	711430	711479	2.15	1	0
b0691	ybfH	1				1	1	716205	716254	1.30	0	0
b0695	kdpD	0	orf			1	1	723055	723104	1.66	0	0
b0700	rhsC	1				1	1	728855	728904	1.66	0	0
b0704	ybfC	0	orf			1	1	735155	735204	3.14	0	0
b0705	ybfL	1				1	1	736280	736329	2.62	1	0
b0706	ybfD	1				1	1	737408	737457	2.39	0	0
b0708	phrB	0	orf			1	1	739558	739607	0.76	0	0
b0714	nei	0	orf			1	1	745558	745607	0.63	0	0
b0716	ybgO	0	orf			1	1	748083	748132	1.08	0	0
b0719	ybgD	1				1	1	752408	752457	3.03	1	1
b0720	gltA	1		b0721	sdhC	1	1	753833	753882	1.04	1	1
b0729	sucD	1				1	1	763308	763357	0.65	0	0
b0733	cydA	1				1	1	769758	769807	0.73	1	1
b0737	tolQ	1				1	1	774233	774282	1.23	0	0
b0740	tolB	1				1	1	777033	777082	2.00	1	1
b0750	nadA	0	orf			1	1	781658	781707	0.69	0	0
b0759	galE	1				1	1	790908	790957	0.78	1	1
b0766	ybhA	1		b0767	ybhE	1	1	797558	797607	2.40	1	0
b0770	ybhI	1				1	1	801233	801282	0.94	0	0
b0771	ybhJ	0	orf			1	1	803733	803782	1.11	0	0
b0779	uvrB	1				1	1	812538	812587	3.89	1	1
b0787	ybhM	0	ig	b0788	ybhN	1	1	820890	820939	1.86	0	0
b0792	ybhR	1				1	1	825415	825464	1.04	0	0
b0794	ybhF	0	orf			1	1	826965	827014	0.67	0	0
b0801	ybiC	1				1	1	835671	835720	2.14	1	1
b0801	ybiC	1		b0802	ybiJ	1	1	837396	837445	1.16	1	1
b0805	ybiL	1				1	1	841021	841070	4.21	0	1
b0806	ybiM	1		b0807	ybiN	1	1	841596	841645	4.00	0	0
b0811	glnH	1				1	1	847547	847596	2.15	1	1
b0815	ybiP	0	orf			1	1	851572	851621	0.75	0	0
b4416	rybA	1				1	1	852197	852246	0.93	1	1
b0833	yliE	0	orf			1	1	874275	874324	3.27	0	0
b0835	yliG	1		b0836	yliH	1	1	877700	877749	4.53	1	1
b0841	mngA	1		b0842	cmr	1	1	882385	882434	2.52	1	1
b0849	grxA	1		b0850	ybjC	1	1	889929	889978	0.59	1	1
b0854	potF	1				1	1	893004	893053	1.47	1	1
b0856	potH	0	orf			1	1	895482	895531	1.81	0	0
b0857	potI	0	orf			1	1	896257	896306	2.02	0	0
b0861	artM	0	orf			1	1	900332	900381	0.74	0	0
b0863	artI	0	orf			1	1	901757	901806	0.80	0	0
b0876	ybjD	1		b0875	aqpZ	1	1	915583	915632	1.57	1	1

b0879	macB	0	orf			1	1	920410	920459	1.56	0	0
b0880	cspD	1		b0881	yljA	1	1	921785	921834	2.82	1	1
b0883	serW	1				1	1	925148	925197	1.52	1	1
b0890	ftsK	0	orf			1	1	933084	933133	1.38	0	0
b0894	dmsA	0	orf			1	1	941609	941658	0.81	0	0
b0899	ycaM	0	orf			1	1	947209	947258	0.92	0	0
b0904	focA	1				1	1	953836	953885	0.95	1	1
b0905	ycaO	1		b0906	ycaP	1	1	955836	955885	0.58	1	1
b0909	ycaL	1				1	1	959211	959260	1.87	0	0
b0913	ycaI	1				1	1	963661	963710	0.76	1	0
b0914	msbA	1				1	1	965812	965861	1.82	1	1
b0916	ycaQ	0	orf			1	1	969262	969311	1.31	0	0
b0922	mukF	0	orf			1	1	974137	974186	0.93	0	0
b0923	mukE	0	orf			1	1	974937	974986	0.61	0	0
b0924	mukB	0	orf			1	1	976787	976836	0.82	0	0
b0929	ompF	1				1	1	986867	986916	4.35	1	1
b0946	ycbW	0	ig	b0947	ycbX	1	1	1005718	1005767	3.30	0	0
b0950	pqiA	1				1	1	1011018	1011067	1.17	1	0
b0951	pqiB	1				1	1	1012418	1012467	1.24	0	0
b0953	rmf	1				1	1	1014768	1014817	2.70	1	1
b0964	yccT	0	orf			1	1	1026618	1026667	0.66	0	0
b0967	yccW	0	orf			1	1	1028236	1028285	0.95	0	1
b0971	serT	1				1	1	1030962	1031011	2.44	1	1
b0972	hyaA	1				1	1	1031537	1031586	2.09	0	0
b0983	yccZ	1				1	1	1045087	1045136	1.21	0	0
b0984	ymcA	0	orf			1	1	1045812	1045861	1.46	0	0
b0984	ymcA	1				1	1	1047137	1047186	2.06	0	0
b0991	sfa	0	ig	b0992	yccM	1	1	1051787	1051836	3.46	0	0
b0994	torT	0	ig	b0995	torR	1	1	1056412	1056461	0.74	0	0
b0997	torA	0	orf			1	1	1058987	1059036	0.89	0	0
b1001	yccE	0	orf			1	1	1063987	1064036	3.07	0	0
b1002	agp	1				1	1	1064437	1064486	2.97	0	0
b1012	rutA	1				1	1	1073112	1073161	2.58	1	0
b1013	rutR	1				1	1	1073437	1073486	2.10	1	0
b1013	rutR	0	ig	b1014	putA	1	1	1074312	1074361	1.76	0	0
b1014	putA	0	orf			1	1	1075787	1075836	0.65	0	0
b1015	putP	1				1	1	1078612	1078661	0.61	1	1
b1018	ycdO	0	orf			1	1	1082212	1082261	1.05	0	0
b1022	ycdQ	1				1	1	1087362	1087411	0.65	0	0
b1023	ycdR	0	orf			1	1	1088437	1088486	1.08	0	0
b1024	ycdS	0	orf			1	1	1089437	1089486	1.09	0	0
b1029	ycdU	0	ig	b1032	serX	1	1	1096237	1096286	1.82	0	0
b1032	serX	1				1	1	1097437	1097486	3.45	1	1
b1042	csgA	0	orf			1	1	1103815	1103864	1.76	0	0
b1044	ymdA	0	orf			1	1	1104765	1104814	2.11	1	0
b1047	mdoC	0	orf			1	1	1107190	1107239	1.19	0	0
b1048	mdoG	0	orf			1	1	1108940	1108989	1.02	0	0
b1054	htrB	0	orf			1	1	1115015	1115064	1.24	0	0
b1060	yceP	1				1	1	1120497	1120546	2.64	1	1
b1078	flgG	1				1	1	1134953	1135002	1.10	0	0
b1079	flgH	0	orf			1	1	1135403	1135452	1.14	0	0
b1086	rluC	1				1	1	1143979	1144028	1.15	1	1
b1097	yceG	0	orf			1	1	1153505	1153554	0.87	0	1
b1098	tmk	0	orf			1	1	1154405	1154454	1.10	0	0
b1099	holB	0	orf			1	1	1155180	1155229	0.93	0	0
b1101	ptsG	1				1	1	1156905	1156954	0.84	1	1
b1102	fhuE	0	orf			1	1	1160055	1160104	0.73	0	0
b1108	ycfP	1				1	1	1164680	1164729	4.71	0	1
b1109	ndh	1				1	1	1165580	1165629	4.31	1	1

b1120	cobB	0	orf			1	1	1179380	1179429	0.91	0	0
b1125	potB	1				1	1	1183412	1183461	0.59	0	0
b1126	popA	1		b1127	pepT	1	1	1184937	1184986	0.94	1	1
b1140	intE	0	orf			1	1	1199776	1199825	1.97	0	0
b1154	ycfK	0	orf			1	1	1207018	1207067	2.69	0	0
b1157	stfE	1		b1158	pin	1	1	1208843	1208892	2.58	0	0
b1168	ycgG	0	orf			1	1	1216694	1216743	2.07	1	1
b4491	ycgH	1				1	1	1217994	1218043	1.94	1	1
b1172	ymgG	0	orf			1	1	1222019	1222068	1.34	0	0
b1173	ycgI	1				1	1	1222894	1222943	2.15	1	0
b1176	minC	1		b1177	ycgJ	1	1	1225519	1225568	3.86	1	1
b1178	ycgK	1		b1179	ycgL	1	1	1226870	1226919	2.29	1	1
b1183	umuD	1				1	1	1229970	1230019	1.29	1	0
b1185	dsbB	1				1	1	1232245	1232294	0.76	1	1
b1190	dadX	1				1	1	1237920	1237969	1.82	0	0
b1190	dadX	0	ig	b1191	ycgO	1	1	1239345	1239394	2.29	0	1
b1195	ymgE	0	orf			1	1	1244095	1244144	0.69	0	0
b1197	treA	1				1	1	1246574	1246623	2.75	0	0
b1199	dhaL	1				1	1	1249024	1249073	1.85	0	0
b1202	ycgV	0	orf			1	1	1253299	1253348	1.57	0	0
b1207	prsA	1				1	1	1260874	1260923	1.41	1	1
b1208	ispE	0	orf			1	1	1261524	1261573	1.08	0	0
b1211	prfA	1				1	1	1264049	1264098	1.56	0	0
b1214	ychA	0	orf			1	1	1266824	1266873	0.68	0	0
b1215	kdsA	1				1	1	1267349	1267398	0.58	0	0
b1218	chaC	1				1	1	1271524	1271573	2.58	1	0
b1218	chaC	0	orf			1	1	1272124	1272173	2.10	0	0
b1231	tyrT	1				1	1	1286800	1286849	2.53	1	1
b1232	purU	0	orf			1	1	1287300	1287349	2.65	0	0
b1236	galU	1				1	1	1290725	1290774	2.09	1	0
b1237	hns	1				1	1	1292350	1292399	1.14	1	1
b1250	kch	1				1	1	1308026	1308075	3.79	0	0
b1273	yciN	1		b1274	topA	1	1	1328827	1328876	2.02	1	1
b1274	topA	0	orf			1	1	1330452	1330501	1.45	0	0
b1276	acnA	0	orf			1	1	1334863	1334912	1.21	0	0
b1276	acnA	0	ig	b1277	ribA	1	1	1336638	1336687	1.62	0	0
b1279	yciS	0	orf			1	1	1338388	1338437	2.30	0	0
b1284	yciT	1				1	1	1342838	1342887	2.83	1	1
b1287	yciW	0	orf			1	1	1347413	1347462	1.28	0	1
b1288	fabI	0	orf			1	1	1348813	1348862	1.72	0	0
b1289	ycjD	1				1	1	1349790	1349839	0.73	0	0
b1296	ycjJ	1				1	1	1357315	1357364	2.22	0	0
b1297	ycjK	1		b1298	ycjL	1	1	1359215	1359264	1.73	1	1
b1300	aldH	0	orf			1	1	1361340	1361389	0.72	0	0
b1302	goaG	0	ig	b1303	pspF	1	1	1364890	1364939	0.56	0	0
b1309	ycjM	1				1	1	1368365	1368414	0.96	0	0
b1313	ycjQ	0	orf			1	1	1374165	1374214	0.74	0	0
b1314	ycjR	0	orf			1	1	1374715	1374764	0.73	0	0
b1320	ycjW	1		b1321	ycjX	1	1	1382116	1382165	1.93	1	1
b1325	ycjG	0	orf			1	1	1387241	1387290	0.91	0	0
b1329	mppA	1				1	1	1390791	1390840	4.18	1	0
b1330	ynaI	0	orf			1	1	1393491	1393540	1.88	0	1
b1332	ynaJ	1				1	1	1395416	1395465	1.75	1	1
b1334	fnr	0	orf			1	1	1397041	1397090	1.11	0	0
b1336	abgT	0	orf			1	1	1399767	1399816	0.96	0	0
b4426	IS061	1		b1340	ydaL	1	1	1404017	1404066	3.68	1	1
b1349	recT	0	orf			1	1	1412743	1412792	0.71	0	0
b1369	b1369	0	ig	b1370	trs5_5	1	1	1425812	1425861	0.71	0	0
b1376	ynaF	0	orf			1	1	1433288	1433337	1.84	0	0

b1377	ompN	0	orf			1	1	1434263	1434312	1.66	0	0
b4427	tke8	1				1	1	1435163	1435212	1.24	1	1
b1380	ldhA	1		b1381	ydbH	1	1	1440738	1440787	1.41	1	1
b1383	ydbL	0	ig	b1384	feaR	1	1	1444163	1444212	2.05	0	0
b1384	feaR	0	orf			1	1	1444688	1444737	2.13	0	0
b1387	paaZ	0	orf			1	1	1450063	1450112	1.44	0	0
b1392	paaE	0	orf			1	1	1454488	1454537	1.91	0	0
b1400	paaY	0	orf			1	1	1462688	1462737	1.60	0	0
b4492	ydbA	1				1	1	1463438	1463487	1.52	1	1
b1407	ydbD	0	orf			1	1	1474388	1474437	1.85	0	0
b1411	ynbD	0	orf			1	1	1478897	1478946	0.90	0	0
b1413	hrpA	0	orf			1	1	1484074	1484123	1.44	0	0
b1415	aldA	0	orf			1	1	1487417	1487466	2.14	0	0
b1419	ydcA	1				1	1	1489542	1489591	2.04	0	0
b1428	ydcK	1		b1429	tehA	1	1	1498477	1498526	2.85	1	1
b1431	ydcL	1				1	1	1500052	1500101	1.47	1	1
b1433	ydcO	1		b1434	ydcN	1	1	1504332	1504381	1.75	1	0
b1435	ydcP	0	orf			1	1	1505932	1505981	2.10	0	0
b1436	yncJ	1				1	1	1507107	1507156	1.42	1	0
b1443	ydcV	0	orf			1	1	1513150	1513199	0.95	0	0
b1445	ydcX	1				1	1	1515500	1515549	2.64	1	1
b1450	yncC	1				1	1	1518175	1518224	2.01	1	0
b1452	yncE	1				1	1	1521175	1521224	0.80	1	1
b1453	ansP	0	orf			1	1	1523950	1523999	1.37	1	1
b1456	rhsE	1				1	1	1525600	1525649	1.31	0	0
b1458	yncI	1				1	1	1528606	1528655	1.56	0	0
b1460	ydcC	0	orf			1	1	1530006	1530055	2.38	0	0
b1463	nhoA	0	orf			1	1	1532181	1532230	0.68	0	0
b1469	narU	1				1	1	1542031	1542080	0.85	1	0
b1471	yddK	0	orf			1	1	1543606	1543655	0.82	0	0
b1473	yddG	1		b1474	fdnG	1	1	1545117	1545166	1.48	0	1
b1476	fdnI	0	orf			1	1	1549642	1549691	0.73	0	0
b1479	sfcA	0	orf			1	1	1552917	1552966	0.65	0	0
b1480	sra	1				1	1	1553892	1553941	1.17	0	0
b1481	bdm	1		b1482	osmC	1	1	1554467	1554516	1.19	1	1
b1486	yddR	1				1	1	1557842	1557891	1.42	0	0
b1495	yddB	0	orf			1	1	1575112	1575161	2.04	0	0
b1496	yddA	0	orf			1	1	1576112	1576161	2.84	0	0
b1501	ydeP	0	orf			1	1	1582262	1582311	0.76	0	0
b1510	ydeK	0	orf			1	1	1594337	1594386	1.07	0	0
b1512	ydeW	1				1	1	1599012	1599061	4.74	0	0
b1513	ego	1				1	1	1599712	1599761	4.09	0	0
b1529	marC	1				1	1	1616912	1616961	1.70	1	1
b1530	marR	1				1	1	1617012	1617061	2.22	1	1
b1533	eamA	1		b1534	ydeE	1	1	1619062	1619111	0.91	1	1
b1543	ydfJ	0	orf			1	1	1629962	1630011	0.74	0	0
b1549	ydfO	1				1	1	1634824	1634873	2.03	1	0
b1550	gnsB	0	orf			1	1	1635652	1635701	1.27	0	0
b1582	ynfA	0	orf			1	1	1653470	1653519	1.25	0	0
b1583	ynfB	0	orf			1	1	1654045	1654094	0.81	0	0
b1588	ynfF	1				1	1	1658520	1658569	0.77	0	0
b1594	mlc	1				1	1	1666695	1666744	0.97	1	0
b1604	ydgH	1				1	1	1676845	1676894	1.72	1	1
b1605	ydgI	0	orf			1	1	1677945	1677994	1.19	0	0
b1609	rstB	0	orf			1	1	1681620	1681669	0.99	0	0
b1613	manA	0	orf			1	1	1687570	1687619	0.66	0	0
b1614	ydgA	0	ig	b1615	uidC	1	1	1689045	1689094	1.74	0	0
b1615	uidC	0	ig	b1614	ydgA	1	1	1689845	1689894	1.63	0	0
b1618	uidR	0	orf			1	1	1694620	1694669	5.03	0	0

b1618	uidR	1				1	1	1694945	1694994	4.88	1	1
b1628	rnfB	0	orf			1	1	1704696	1704745	0.65	0	0
b1634	ydgR	1				1	1	1710596	1710645	2.18	0	1
b1642	slyA	1		b1643	ydhI	1	1	1718971	1719020	0.98	1	1
b1645	ydhK	0	orf			1	1	1720771	1720820	1.83	0	0
b1653	lhr	0	orf			1	1	1730790	1730839	1.08	0	0
b1654	ydhD	1				1	1	1732140	1732189	1.95	1	1
b1656	sodB	1				1	1	1733465	1733514	0.87	1	1
b1662	ribC	0	orf			1	1	1740965	1741014	2.30	0	0
b1665	valV	1				1	1	1744365	1744414	2.42	1	1
b1668	ydhS	1				1	1	1745365	1745414	2.70	0	0
b1669	ydhT	0	orf			1	1	1747015	1747064	1.21	0	0
b1671	ydhX	1				1	1	1749065	1749114	1.07	0	0
b1681	sufD	0	orf			1	1	1759265	1759314	0.92	0	0
b1682	sufC	0	orf			1	1	1759940	1759989	1.21	0	0
b1685	ydiH	1				1	1	1763295	1763344	3.63	1	1
b4431	rprA	1				1	1	1768170	1768219	0.62	1	1
b1692	ydiB	0	orf			1	1	1772445	1772494	2.11	0	0
b1694	ydiF	0	orf			1	1	1773920	1773969	1.05	0	0
b1698	ydiR	0	orf			1	1	1778545	1778594	0.77	0	0
b1706	ydiU	1				1	1	1789172	1789221	1.42	1	1
b4494	arpB	0	ig	b1722	ydiY	1	1	1803122	1803171	0.79	1	0
b1725	yniA	1				1	1	1805722	1805771	2.37	0	0
b1728	ydjM	1				1	1	1808172	1808221	1.30	0	0
b1732	katE	1				1	1	1812229	1812278	1.39	1	1
b1738	celA	1				1	1	1819510	1819559	3.57	1	0
b1740	nadE	0	orf			1	1	1820885	1820934	1.87	0	0
b1741	ydjQ	0	orf			1	1	1821660	1821709	1.73	0	1
b1743	spy	1				1	1	1823735	1823784	1.11	1	1
b1751	ydjY	0	orf			1	1	1832235	1832284	1.98	0	0
b1770	ydjF	1				1	1	1852810	1852859	2.59	1	0
b1774	ydjJ	0	orf			1	1	1856035	1856084	0.68	0	0
b1777	yeaC	0	orf			1	1	1859885	1859934	1.36	0	0
b1785	yeaI	1				1	1	1868043	1868092	2.60	0	1
b1787	yeaK	0	orf			1	1	1871593	1871642	1.75	0	0
b1794	yeaP	0	ig	b1795	yeaQ	1	1	1877093	1877142	2.99	0	1
b1797	yeaR	1				1	1	1878243	1878292	1.44	0	0
b1801	yeaV	1				1	1	1881068	1881117	0.56	0	1
b1805	fadD	1				1	1	1887843	1887892	0.78	1	1
b1809	yoaB	1				1	1	1890993	1891042	1.84	1	0
b1812	pabB	0	orf			1	1	1893770	1893819	1.39	0	0
b1813	yeaB	0	orf			1	1	1894645	1894694	1.02	0	0
b1815	yoaD	1				1	1	1896520	1896569	0.89	1	0
b1820	yobD	1				1	1	1902695	1902744	1.00	0	0
b1821	yebN	0	ig	b1822	rrmA	1	1	1904345	1904394	1.25	0	0
b1826	yobG	1				1	1	1906920	1906969	4.01	1	1
b1833	yebS	1				1	1	1914345	1914394	2.49	1	1
b1836	yebV	1				1	1	1919645	1919694	1.24	1	0
b1837	yebW	1				1	1	1920045	1920094	1.27	1	0
b1838	pphA	1		b4432	ryeA	1	1	1920971	1921020	1.43	1	1
b1839	yebY	0	orf			1	1	1921521	1921570	1.31	0	0
b1844	exoX	0	orf			1	1	1924371	1924420	2.75	0	0
b1855	msbB	1				1	1	1938499	1938548	2.02	1	1
b1856	yebA	0	orf			1	1	1939099	1939148	2.25	0	0
b1858	znuC	1				1	1	1940324	1940373	1.07	1	0
b1861	ruvA	1		b1862	yebB	1	1	1944274	1944323	0.85	1	1
b1871	yecP	1				1	1	1951399	1951448	1.30	0	0
b1871	yecP	0	ig	b1872	torZ	1	1	1952099	1952148	1.32	0	0
b1872	torZ	0	orf			1	1	1953049	1953098	2.06	0	0

b1873	torY	1				1	1	1956499	1956548	2.06	1	0
b1875	yecM	1				1	1	1957799	1957848	2.28	1	1
b1876	argS	1				1	1	1958224	1958273	2.14	1	1
b1879	flhA	0	orf			1	1	1962549	1962598	0.61	0	1
b1884	cheR	0	orf			1	1	1967174	1967223	0.76	0	0
b1885	tap	0	orf			1	1	1968349	1968398	1.65	0	0
b1886	tar	0	orf			1	1	1969624	1969673	0.83	0	0
b1888	cheA	0	orf			1	1	1972549	1972598	0.70	0	0
b1890	motA	1				1	1	1974974	1975023	1.29	1	1
b1896	otsA	0	orf			1	1	1978874	1978923	1.92	1	1
b1897	otsB	1				1	1	1980574	1980623	2.46	1	1
b1900	araG	1				1	1	1983252	1983301	2.07	0	0
b1904	yecR	1		b4434	IS092	1	1	1986327	1986376	2.89	1	1
b1911	glyW	1				1	1	1990052	1990101	0.74	1	1
b1915	yecF	1				1	1	1993805	1993854	3.95	1	1
b1916	sdiA	1				1	1	1995305	1995354	2.73	1	1
b1919	yedO	0	orf			1	1	1997455	1997504	2.65	0	0
b1922	fliA	1				1	1	1999680	1999729	2.10	0	1
b1923	fliC	0	orf			1	1	2000488	2000537	3.19	0	1
b1924	fliD	0	orf			1	1	2003123	2003172	0.71	0	0
b1927	amyA	1				1	1	2004023	2004072	0.82	0	0
b1928	yedD	1		b1929	yedE	1	1	2006248	2006297	1.79	1	1
b1936	intG	0	orf			1	1	2010573	2010622	0.54	0	0
b1944	fliL	1				1	1	2017398	2017447	1.71	1	0
b1946	fliO	1				1	1	2019398	2019447	3.36	0	0
b1950	fliR	1				1	1	2020798	2020847	1.22	0	0
b1956	yedQ	1				1	1	2025977	2026026	0.71	1	1
b1957	yodC	1				1	1	2026477	2026526	0.91	1	0
b1958	yedI	1		b1959	yedA	1	1	2027527	2027576	2.05	1	1
b1959	yedA	0	orf			1	1	2028102	2028151	2.40	0	0
b1962	yedJ	1				1	1	2030752	2030801	4.02	0	0
b1967	yedU	1				1	1	2033527	2033576	0.75	1	0
b1969	yedW	0	orf			1	1	2036477	2036526	0.64	0	0
b1974	yodB	0	orf			1	1	2040577	2040626	2.95	0	0
b1977	asnT	1				1	1	2042214	2042263	2.43	1	1
b4497	yeeL	1		b1981	shiA	1	1	2051414	2051463	1.42	1	1
b1983	yeeN	1				1	1	2054914	2054963	1.41	1	1
b1984	asnW	1				1	1	2056380	2056429	1.83	1	1
b1986	asnU	1				1	1	2057884	2057933	1.18	1	1
b1989	asnV	1				1	1	2060284	2060333	1.47	1	1
b1993	cobU	1				1	1	2064209	2064258	0.92	1	1
b2001	yeeR	0	orf			1	1	2074136	2074185	1.56	0	1
b2010	dacD	1		b2011	sbcB	1	1	2080536	2080585	3.58	1	1
b2014	yeeF	1				1	1	2085411	2085460	1.70	1	1
b2017	yefM	1				1	1	2087611	2087660	0.59	1	1
b2028	ugd	0	orf			1	1	2097422	2097471	0.96	0	0
b2029	gnd	1				1	1	2099322	2099371	2.10	1	1
b2038	rfbC	0	orf			1	1	2108008	2108057	1.60	1	0
b2041	rfbB	0	orf			1	1	2110535	2110584	1.24	0	0
b2042	galF	1				1	1	2112785	2112834	2.85	1	1
b2050	wcaI	0	orf			1	1	2123061	2123110	1.00	0	0
b2056	wcaD	0	orf			1	1	2128016	2128065	2.21	0	0
b2060	wzc	1				1	1	2133541	2133590	0.79	0	0
b2063	yegH	0	ig	b2064	asmA	1	1	2137966	2138015	0.80	0	0
b2067	yegE	0	orf			1	1	2142691	2142740	2.44	0	0
b2068	alkA	0	orf			1	1	2144916	2144965	0.62	0	0
b2072	yegK	0	orf			1	1	2150116	2150165	1.20	0	0
b2075	yegN	0	orf			1	1	2154316	2154365	0.75	0	0
b2080	yegP	1				1	1	2162866	2162915	2.33	1	0

b2097	fbaB	1				1	1	2176341	2176390	4.06	1	0
b2098	yegT	1				1	1	2176716	2176765	4.34	1	0
b2102	yegX	0	orf			1	1	2181066	2181115	2.15	1	1
b2107	yohN	0	orf			1	1	2184916	2184965	0.94	1	0
b2109	yehB	0	orf			1	1	2188266	2188315	2.88	0	0
b2113	mrp	0	orf			1	1	2191266	2191315	3.75	0	0
b2119	yehL	1				1	1	2202691	2202740	1.07	1	1
b2122	yehQ	0	orf			1	1	2208091	2208140	1.35	0	0
b2123	yehR	0	orf			1	1	2209541	2209590	2.24	0	0
b2126	yehU	1		b2127	yehV	1	1	2212793	2212842	2.54	1	1
b2132	bglX	1		b2133	dld	1	1	2220118	2220167	1.82	1	1
b2135	yohC	1				1	1	2223443	2223492	2.87	1	0
b2136	yohD	1				1	1	2224068	2224117	2.68	1	0
b2145	yeiS	0	orf			1	1	2231718	2231767	1.02	0	0
b2151	galS	1				1	1	2239596	2239645	1.03	0	0
b2153	folE	1				1	1	2241371	2241420	1.63	1	1
b2170	setB	0	orf			1	1	2262571	2262620	1.60	0	0
b2175	spr	1				1	1	2267196	2267245	4.79	1	1
b2181	yejG	1				1	1	2276771	2276820	1.24	1	1
b2189	proL	1				1	1	2284613	2284662	2.04	1	1
b2190	yejO	1				1	1	2287038	2287087	0.88	0	1
b2198	ccmD	0	orf			1	1	2293388	2293437	0.75	0	0
b2216	yojN	1				1	1	2311425	2311474	2.29	1	1
b2217	rcsB	1				1	1	2313600	2313649	3.87	1	1
b2217	rcsB	0	ig	b2218	rcsC	1	1	2315175	2315224	1.16	0	0
b2218	rcsC	1		b2219	atoS	1	1	2317850	2317899	1.28	1	0
b2233	yfaL	0	orf			1	1	2339550	2339599	1.79	1	0
b2233	yfaL	1				1	1	2342100	2342149	4.01	1	1
b2234	nrdA	1				1	1	2342825	2342874	3.74	1	1
b2240	glpT	1		b2241	glpA	1	1	2350478	2350527	1.15	0	0
b2242	glpB	1				1	1	2352203	2352252	0.78	0	0
b2248	yfaX	1				1	1	2360329	2360378	0.78	0	0
b2249	yfaY	1				1	1	2361529	2361578	1.55	0	1
b2250	yfaZ	1		b2251	yfaO	1	1	2362104	2362153	2.39	1	1
b2255	yfbG	1				1	1	2366229	2366278	0.92	0	0
b2256	yfbH	1				1	1	2367879	2367928	1.25	0	0
b2257	arnT	0	orf			1	1	2369979	2370028	1.26	0	0
b2259	pmrD	1				1	1	2371579	2371628	1.13	1	1
b2269	elaD	0	ig	b2270	yfbK	1	1	2382230	2382279	2.02	0	0
b2275	yfbP	0	ig	b2276	nuoN	1	1	2387880	2387929	1.78	0	0
b2283	nuoG	0	orf			1	1	2397505	2397554	0.71	0	0
b2288	nuoA	1				1	1	2403722	2403771	4.59	1	1
b2295	yfbV	1				1	1	2411097	2411146	2.20	1	1
b2296	ackA	1				1	1	2411422	2411471	2.00	1	1
b2298	yfcC	0	orf			1	1	2415447	2415496	1.65	0	0
b2301	yfcF	1		b2302	yfcG	1	1	2418572	2418621	0.81	0	0
b2303	folX	1				1	1	2419372	2419421	1.20	1	0
b2313	cvpA	1				1	1	2428622	2428671	1.12	1	0
b2316	accD	1				1	1	2432297	2432346	1.72	1	1
b2318	truA	0	orf			1	1	2433522	2433571	0.89	1	1
b2321	flk	0	orf			1	1	2436497	2436546	0.87	0	0
b2323	fabB	1		b2324	yfcK	1	1	2439597	2439646	0.78	1	1
b2331	yfcN	1				1	1	2445798	2445847	0.59	1	1
b2339	yfcV	1				1	1	2454048	2454097	3.73	1	1
b2340	sixA	1				1	1	2454648	2454697	4.02	1	1
b2344	fadL	1				1	1	2459600	2459649	2.26	1	1
b2348	argW	1				1	1	2464303	2464352	0.85	1	1
b2353	tfaS	1				1	1	2468628	2468677	1.39	1	1
b2354	yfdK	0	orf			1	1	2469278	2469327	0.90	0	0

b2363	yfdT	0	ig	b2364	dsdC	1	1	2474103	2474152	0.95	1	1
b2364	dsdC	1				1	1	2475378	2475427	2.21	0	0
b2365	dsdX	1				1	1	2475803	2475852	2.31	0	0
b2369	evgA	0	orf			1	1	2482154	2482203	2.78	0	0
b2370	evgS	0	orf			1	1	2484629	2484678	0.87	1	0
b2371	yfdE	0	orf			1	1	2486504	2486553	1.06	1	0
b2377	yfdY	1				1	1	2493229	2493278	2.02	1	1
b2378	ddg	0	orf			1	1	2494404	2494453	2.50	0	0
b2382	ypdC	1				1	1	2498954	2499003	0.77	0	1
b2383	ypdD	0	orf			1	1	2501654	2501703	1.24	0	0
b2394	yi81_3	1				1	1	2512304	2512353	1.39	0	1
b2395	yfeA	1				1	1	2515779	2515828	2.47	1	1
b2397	alaW	1				1	1	2516404	2516453	2.51	1	1
b2401	valU	1		b2400	gltX	1	1	2518804	2518853	1.12	1	1
b2412	zipA	1		b2413	cysZ	1	1	2529556	2529605	3.76	1	1
b2415	ptsH	1				1	1	2531156	2531205	3.13	1	1
b2421	cysM	1				1	1	2537256	2537305	1.86	1	1
b2425	cysP	0	orf			1	1	2541333	2541382	1.46	0	0
b2426	ucpA	1				1	1	2542885	2542934	1.06	0	0
b2429	yfeV	0	orf			1	1	2544985	2545034	0.61	0	0
b2434	ypeA	1		b2435	amiA	1	1	2550435	2550484	0.86	1	1
b2443	yffL	0	orf			1	1	2558485	2558534	2.13	1	1
b2448	yffQ	1				1	1	2561211	2561260	1.93	1	0
b2458	eutI	0	orf			1	1	2570562	2570611	1.03	0	0
b2464	talA	0	orf			1	1	2576887	2576936	1.68	0	0
b2470	acrD	0	orf			1	1	2585788	2585837	1.64	0	0
b2471	yffB	1				1	1	2588988	2589037	1.25	1	0
b2474	ypfI	0	orf			1	1	2592813	2592862	1.68	0	0
b2487	hyfG	0	orf			1	1	2607090	2607139	0.73	0	0
b2501	ppk	1				1	1	2620791	2620840	1.57	1	1
b2503	yfgF	0	orf			1	1	2626453	2626502	0.68	0	0
b2509	xseA	0	orf			1	1	2633278	2633327	0.72	0	0
b2516	yfgA	1				1	1	2641104	2641153	0.61	1	1
b2517	yfgB	1				1	1	2642279	2642328	0.94	1	1
b2522	sseB	1				1	1	2652624	2652673	2.31	0	0
b2531	iscR	1				1	1	2660027	2660076	0.91	1	1
b2534	yfhR	0	orf			1	1	2662427	2662476	0.77	0	0
b2536	hcaT	1				1	1	2666127	2666176	0.98	0	0
b2541	hcaB	0	orf			1	1	2669452	2669501	2.63	0	0
b2545	yphC	0	orf			1	1	2673277	2673326	0.69	0	0
b2557	purL	0	orf			1	1	2692177	2692226	0.86	0	0
b2558	yfhD	0	orf			1	1	2694502	2694551	0.61	0	0
b2560	yfhB	1		b2561	yfhH	1	1	2696677	2696726	1.10	1	0
b2574	nadB	1				1	1	2708589	2708638	0.60	1	1
b2574	nadB	0	ig	b2575	yfiC	1	1	2709889	2709938	1.07	0	0
b2579	yfiD	1		b2580	ung	1	1	2714864	2714913	1.02	1	0
b2582	trxC	0	orf			1	1	2717039	2717088	0.73	1	0
b2591	rrsG	1				1	1	2729819	2729868	2.48	1	1
b2592	clpB	1				1	1	2732419	2732468	1.68	1	1
b2600	tyrA	1				1	1	2738269	2738318	2.48	0	0
b2606	rplS	1				1	1	2742394	2742443	3.62	0	0
b2610	ffh	1		b2611	ypjD	1	1	2745820	2745869	1.39	1	1
b2616	recN	0	orf			1	1	2750545	2750594	1.15	0	0
b2621	ssrA	1				1	1	2753345	2753394	1.05	1	1
b2628	yfjL	1				1	1	2763411	2763460	0.83	1	1
b2630	yfjN	0	orf			1	1	2764561	2764610	1.42	1	1
b2641	b2641	1		b2642	yfjW	1	1	2771192	2771241	1.35	1	1
b2646	ypjF	0	ig	b2647	ypjA	1	1	2776668	2776717	2.80	0	1
b2647	ypjA	0	orf			1	1	2779268	2779317	1.21	1	1

b2659	csiD	1				1	1	2787026	2787075	2.24	0	1
b2661	gabD	0	orf			1	1	2789801	2789850	1.03	0	0
b2663	gabP	0	orf			1	1	2792877	2792926	0.65	0	0
b2669	stpA	1		b2670	ygaW	1	1	2796877	2796926	2.81	1	0
b2675	nrdE	0	orf			1	1	2800402	2800451	0.93	0	0
b4442	sraD	1				1	1	2812856	2812905	1.24	1	0
b2704	srlB	1				1	1	2825356	2825405	1.20	0	0
b2707	srlR	0	orf			1	1	2827356	2827405	0.60	0	0
b2714	ascG	1		b2715	ascF	1	1	2837556	2837605	1.36	0	1
b2723	hycC	0	orf			1	1	2846006	2846055	1.20	0	0
b2735	ygbI	1		b2736	ygbJ	1	1	2859157	2859206	1.26	1	0
b2740	ygbN	0	orf			1	1	2863457	2863506	0.81	0	0
b2742	nlpD	0	orf			1	1	2866032	2866081	0.81	1	1
b2751	cysN	1				1	1	2873382	2873431	1.99	0	0
b2753	iap	0	orf			1	1	2875332	2875381	2.72	0	0
b2758	ygcJ	0	orf			1	1	2879632	2879681	3.41	0	0
b2760	ygcL	0	orf			1	1	2881800	2881849	2.13	0	0
b2761	ygcB	0	orf			1	1	2883275	2883324	2.81	0	0
b2761	ygcB	0	orf			1	1	2884700	2884749	1.54	0	0
b2763	cysI	1				1	1	2888028	2888077	1.78	0	0
b2776	ygcE	0	ig	b2777	ygcF	1	1	2901688	2901737	1.47	1	1
b2778	ygcG	0	ig	b2779	eno	1	1	2904613	2904662	0.87	0	0
b2783	chpR	1				1	1	2909313	2909362	0.72	1	1
b2786	barA	1				1	1	2913338	2913387	0.87	1	1
b2793	syd	1				1	1	2923038	2923087	0.63	1	1
b2796	sdaC	1				1	1	2925513	2925562	2.46	1	1
b2801	fucP	0	orf			1	1	2933165	2933214	3.78	0	0
b2806	ygdE	0	orf			1	1	2938348	2938397	1.95	0	0
b2808	gcvA	0	orf			1	1	2939998	2940047	0.65	0	1
b2813	mltA	1		b2814	metZ	1	1	2945173	2945222	3.23	1	1
b2817	amiC	1		b2818	argA	1	1	2947098	2947147	0.72	1	1
b2821	ptr	0	orf			1	1	2955423	2955472	1.57	0	0
b2821	ptr	1				1	1	2956700	2956749	3.59	0	0
b2830	ygdP	1		b2831	mutH	1	1	2967475	2967524	3.78	1	1
b2840	ygeA	0	orf			1	1	2978228	2978277	3.11	0	0
b2841	araE	1				1	1	2980228	2980277	0.69	1	1
b2844	yqeF	1		b2845	yqeG	1	1	2984080	2984129	2.00	0	1
b2845	yqeG	0	orf			1	1	2984780	2984829	2.24	0	0
b2846	yqeH	1				1	1	2985680	2985729	2.34	1	1
b2864	glyU	1				1	1	2997250	2997299	2.93	1	1
b2869	ygeV	1				1	1	3003475	3003524	1.35	1	0
b2870	ygeW	1				1	1	3004054	3004103	1.20	0	0
b2871	ygeX	0	orf			1	1	3005804	3005853	0.63	0	0
b2873	ygeZ	0	orf			1	1	3008154	3008203	1.91	0	0
b4464	ygfQ	0	orf			1	1	3025304	3025353	1.05	0	0
b2901	bglA	1				1	1	3041327	3041376	0.62	1	1
b2903	gcvP	0	orf			1	1	3044352	3044401	1.41	0	0
b2905	gcvT	1				1	1	3048702	3048751	1.47	1	1
b2908	pepP	0	orf			1	1	3052227	3052276	0.68	0	0
b4446	rygC	1				1	1	3054627	3054676	1.04	1	1
b2924	yggB	1				1	1	3067883	3067932	0.82	1	1
b2926	pgk	1				1	1	3070708	3070757	1.42	1	1
b2927	epd	1				1	1	3071533	3071582	1.65	1	1
b2936	yggG	0	ig	b2937	speB	1	1	3080771	3080820	0.92	0	0
b2940	yqgC	1				1	1	3084299	3084348	1.31	1	1
b2945	endA	1				1	1	3088224	3088273	0.82	0	0
b2954	yggV	0	orf			1	1	3094974	3095023	1.16	0	0
b2961	mutY	1				1	1	3100624	3100673	0.69	1	1
b2962	yggX	0	orf			1	1	3102174	3102223	1.55	0	0

b2967	pheV	1				1	1	3108413	3108462	1.40	1	1
b2970	yghF	1				1	1	3111038	3111087	4.69	1	0
b4466	yghJ	1				1	1	3117213	3117262	0.80	1	1
b2976	glcB	0	orf			1	1	3120913	3120962	1.04	0	0
b4467	glcF	0	orf			1	1	3122588	3122637	0.75	0	0
b2979	glcD	1		b2980	glcC	1	1	3126113	3126162	1.01	1	0
b2982	trs5_9	0	ig	b2983	yghQ	1	1	3129288	3129337	0.86	0	1
b2987	pitB	1				1	1	3134388	3134437	1.44	1	1
b2988	gss	1		b2989	yghU	1	1	3136613	3136662	1.41	1	1
b3000	b3000	1		b3001	yghZ	1	1	3146063	3146112	4.24	1	0
b3005	exbD	0	orf			1	1	3149163	3149212	0.99	0	0
b3010	yqhC	1		b3011	yqhD	1	1	3153322	3153371	1.45	1	1
b3014	yqhH	0	orf			1	1	3156822	3156871	1.18	0	0
b4469	yqiQ	0	orf			1	1	3157472	3157521	1.09	0	0
b4469	yqiQ	1				1	1	3159197	3159246	1.43	0	1
b3017	sufI	1				1	1	3160747	3160796	0.70	0	0
b3027	ygiZ	0	orf			1	1	3169974	3170023	3.42	0	0
b3028	mdaB	1				1	1	3170727	3170776	3.96	1	1
b3036	ygiA	1				1	1	3177477	3177526	1.07	0	1
b3042	yqiC	1				1	1	3182927	3182976	0.75	1	1
b3051	yqiK	0	orf			1	1	3191402	3191451	1.11	0	0
b3069	ileX	1				1	1	3213427	3213476	1.13	1	1
b3072	aer	1		b3073	ygjG	1	1	3217302	3217351	4.24	1	1
b3089	ygjU	1				1	1	3237353	3237402	2.00	1	1
b3103	yhaH	1				1	1	3250373	3250422	1.05	1	1
b3116	tdcC	1				1	1	3263176	3263225	2.45	0	0
b3120	yhaB	1				1	1	3265851	3265900	3.01	1	1
b3129	sohA	1				1	1	3275045	3275094	1.90	1	0
b3160	yhbW	0	orf			1	1	3301796	3301845	0.67	0	0
b3162	deaD	0	orf			1	1	3304671	3304720	0.70	0	0
b3169	nusA	0	orf			1	1	3314871	3314920	1.54	0	1
b3171	metY	1				1	1	3316271	3316320	3.02	1	1
b3175	secG	1				1	1	3320746	3320795	3.26	1	1
b3177	folP	0	orf			1	1	3322496	3322545	1.75	0	0
b3184	yhbE	0	orf			1	1	3330146	3330195	3.28	0	1
b3189	murA	1				1	1	3334446	3334495	1.47	0	0
b3192	yrbC	1				1	1	3335646	3335695	1.70	1	0
b3195	yrbF	1		b3196	yrbG	1	1	3338147	3338196	0.58	1	1
b3207	yrbL	1				1	1	3346197	3346246	1.32	1	1
b3211	yhcC	1		b3212	gltB	1	1	3352304	3352353	1.28	1	1
b3215	yhcA	1				1	1	3360204	3360253	1.08	0	0
b3216	yhcD	1				1	1	3361104	3361153	2.21	1	1
b3217	yhcE	0	ig	b3218	trs5_10	1	1	3363529	3363578	1.01	0	0
b3219	yhcF	0	orf			1	1	3365129	3365178	0.94	0	1
b3220	yhcG	0	ig	b3221	yhcH	1	1	3366959	3367008	0.65	0	0
b3225	nanA	0	orf			1	1	3371159	3371208	0.80	0	0
b3229	sspA	1				1	1	3375409	3375458	1.83	1	1
b3236	mdh	1		b3237	argR	1	1	3382509	3382558	1.47	1	1
b3239	yhcO	1				1	1	3383953	3384002	1.36	1	0
b3242	yhcR	1		b3243	yhcS	1	1	3387628	3387677	0.77	1	1
b3251	mreB	1				1	1	3399453	3399502	0.79	1	1
b3254	b3254	1				1	1	3402603	3402652	1.25	1	1
b3260	yhdG	1				1	1	3408456	3408505	4.44	1	1
b3266	acrF	0	orf			1	1	3413707	3413756	1.66	0	0
b3269	yhdX	1				1	1	3418157	3418206	0.59	0	0
b3278	rrsD	1				1	1	3426907	3426956	1.22	1	1
b3289	rrmB	1				1	1	3433032	3433081	0.91	0	0
b3291	mscL	0	ig	b3292	zntR	1	1	3437082	3437131	1.26	0	1
b3324	gspC	0	orf			1	1	3453922	3453971	0.71	0	0

b3337	bfd	1				1	1	3464922	3464971	1.57	1	1
b3340	fusA	1				1	1	3471447	3471496	1.00	0	0
b3342	rpsL	1				1	1	3472824	3472873	3.23	1	1
b3357	crp	0	orf			1	1	3484374	3484423	2.32	0	0
b3358	yhfK	1				1	1	3484824	3484873	2.20	0	0
b3365	nirB	1				1	1	3491474	3491523	3.83	0	0
b4474	frlC	1				1	1	3500485	3500534	0.68	0	0
b3378	yhfU	1				1	1	3505712	3505761	0.73	1	1
b3392	yrfA	1				1	1	3519037	3519086	2.72	0	0
b3398	yrfF	0	orf			1	1	3525887	3525936	0.81	0	0
b3402	yhgE	1		b3403	pckA	1	1	3530437	3530486	2.15	1	1
b3408	feoA	1				1	1	3538163	3538212	2.83	1	1
b3417	malP	0	orf			1	1	3549713	3549762	0.80	0	0
b3425	glpE	1				1	1	3559814	3559863	0.68	1	1
b3426	glpD	1				1	1	3560164	3560213	0.65	1	1
b3430	glgC	1				1	1	3567497	3567546	0.94	0	0
b4476	gntU	1				1	1	3575147	3575196	1.43	0	0
b3438	gntR	0	orf			1	1	3576222	3576271	0.95	0	0
b3452	ugpA	1				1	1	3589195	3589244	1.43	0	0
b3458	livK	1		b3459	yhhK	1	1	3595674	3595723	1.26	1	1
b3470	sirA	1		b3471	yhhQ	1	1	3607024	3607073	2.88	1	1
b3474	yhhT	1				1	1	3609274	3609323	0.99	0	1
b3476	nikA	1				1	1	3611949	3611998	1.71	0	0
b3482	rhsB	1				1	1	3617324	3617373	1.75	1	0
b3483	yhhH	0	orf			1	1	3621674	3621723	2.82	1	0
b3484	yhhI	1				1	1	3622574	3622623	2.53	0	0
b3484	yhhI	0	ig	b3485	yhhJ	1	1	3623774	3623823	1.12	1	1
b3488	yhiJ	1				1	1	3629374	3629423	2.88	1	1
b3491	yhiM	0	orf			1	1	3633299	3633348	1.54	0	0
b3491	yhiM	0	ig	b3492	yhiN	1	1	3634224	3634273	1.82	0	0
b3496	yhiP	0	orf			1	1	3639199	3639248	0.63	0	0
b3501	arsR	1				1	1	3646435	3646484	0.93	1	1
b3502	arsB	1				1	1	3646910	3646959	0.93	0	0
b3504	yhiS	0	ig	b3505	trs5_11	1	1	3650135	3650184	0.91	0	0
b3511	hdeD	0	orf			1	1	3655160	3655209	3.85	0	0
b3515	yhiW	0	orf			1	1	3662435	3662484	0.88	0	0
b3516	gadX	1				1	1	3664110	3664159	0.66	1	1
b3520	yhjB	1		b3521	yhjC	1	1	3670265	3670314	2.64	0	0
b3523	yhjE	1				1	1	3672715	3672764	4.31	1	0
b3524	yhjG	0	orf			1	1	3675590	3675639	2.89	0	0
b3526	kdgK	1				1	1	3677140	3677189	1.06	1	1
b3529	yhjK	1				1	1	3684015	3684064	0.91	1	0
b3535	yhjR	1		b3536	yhjS	1	1	3694265	3694314	1.85	1	1
b3544	dppA	1				1	1	3705919	3705968	2.82	1	1
b3545	proK	1				1	1	3706819	3706868	2.34	1	1
b3560	glyQ	1		b3561	yiaH	1	1	3723869	3723918	1.94	1	1
b3561	yiaH	0	orf			1	1	3724619	3724668	2.92	0	0
b3571	malS	0	orf			1	1	3735976	3736025	1.24	0	0
b3588	aldB	1				1	1	3754751	3754800	2.38	0	0
b3589	yiaY	1				1	1	3755976	3756025	0.93	1	1
b3591	selA	1				1	1	3759302	3759351	1.09	0	0
b3592	yibF	1		b3593	rhsA	1	1	3760177	3760226	1.73	1	1
b3594	yibA	0	orf			1	1	3764652	3764701	1.72	1	1
b3598	yibI	1		b3599	mtlA	1	1	3770177	3770226	2.07	1	1
b3602	yibL	1				1	1	3774652	3774701	2.16	1	1
b3617	kbl	1				1	1	3790577	3790626	1.30	0	1
b3632	rfaQ	1		b3633	kdtA	1	1	3806306	3806355	0.73	1	1
b3645	dinD	1				1	1	3815881	3815930	2.17	0	0
b3656	yicI	0	orf			1	1	3831556	3831605	1.51	0	0

b3657	yicJ	0	orf			1	1	3833081	3833130	2.94	0	0
b3658	selC	1				1	1	3834331	3834380	2.79	1	1
b3662	yicM	0	orf			1	1	3839506	3839555	0.96	1	1
b3664	yicO	0	orf			1	1	3841381	3841430	1.23	1	0
b3669	uhpA	1				1	1	3848831	3848880	1.24	0	1
b3676	yidH	1		b3677	yidI	1	1	3854458	3854507	1.87	1	0
b3683	glvC	1		b3684	yidP	1	1	3861958	3862007	2.72	0	0
b3687	ibpA	1		b3688	yidQ	1	1	3865658	3865707	1.18	1	0
b4479	dgoR	1		b3696	yidX	1	1	3873393	3873442	1.86	1	1
b3717	yieJ	1				1	1	3896072	3896121	1.43	0	0
b3719	yieL	0	orf			1	1	3898372	3898421	0.64	0	0
b3730	glmU	1				1	1	3913432	3913481	1.78	1	1
b3734	atpA	0	orf			1	1	3916607	3916656	1.27	0	0
b3746	yieN	0	orf			1	1	3928482	3928531	0.70	0	0
b3752	rbsK	0	orf			1	1	3935607	3935656	1.51	0	0
b3753	rbsR	1				1	1	3936132	3936181	1.53	0	0
b3755	yieP	1				1	1	3939182	3939231	1.84	1	1
b3756	rrsC	1				1	1	3939507	3939556	1.87	1	1
b3775	ppiC	1				1	1	3958086	3958135	1.43	1	1
b3780	rhlB	1		b3781	trxA	1	1	3963561	3963610	0.60	1	0
b3784	rfe	1				1	1	3966012	3966061	3.01	1	1
b3786	wecB	1				1	1	3968362	3968411	0.66	0	0
b4481	rffT	1				1	1	3975487	3975536	1.10	0	0
b3794	wecG	0	orf			1	1	3978187	3978236	0.84	0	0
b3796	argX	1				1	1	3980187	3980236	0.98	1	1
b3798	leuT	1				1	1	3980662	3980711	0.83	1	1
b3813	uvrD	1				1	1	3995865	3995914	1.13	1	1
b3827	yigM	1				1	1	4008940	4008989	1.87	1	1
b3832	yigN	0	orf			1	1	4016190	4016239	1.04	0	0
b3836	tatA	1				1	1	4019865	4019914	0.84	1	1
b4483	tatD	1				1	1	4021290	4021339	2.01	0	0
b3846	fadB	1		b3847	pepQ	1	1	4029067	4029116	1.42	1	1
b3849	trkH	1				1	1	4031042	4031091	1.37	0	0
b3849	trkH	0	orf			1	1	4031942	4031991	1.01	0	0
b3850	hemG	0	orf			1	1	4032492	4032541	1.13	0	0
b3851	rrsA	1				1	1	4033242	4033291	1.65	1	1
b3861	yihF	0	orf			1	1	4042300	4042349	1.36	0	0
b4457	csrC	1				1	1	4049056	4049105	0.88	1	1
b3867	hemN	0	ig	b3868	glnG	1	1	4052031	4052080	2.50	1	1
b3870	glnA	1		b3871	bipA	1	1	4056381	4056430	0.52	1	0
b3874	yihN	1				1	1	4060281	4060330	0.64	0	0
b3882	yihU	1		b3883	yihV	1	1	4071933	4071982	3.04	0	0
b3890	yiiF	1				1	1	4077708	4077757	1.29	0	0
b3896	yiiG	1				1	1	4085058	4085107	0.70	0	0
b3899	frvB	0	orf			1	1	4089908	4089957	0.96	0	0
b3909	kdgT	1				1	1	4099820	4099869	4.05	0	0
b3915	yiiP	0	orf			1	1	4105270	4105319	1.59	1	0
b3930	menA	1				1	1	4118473	4118522	1.48	0	1
b3936	rpmE	1				1	1	4125148	4125197	1.06	1	1
b3938	metJ	1		b3939	metB	1	1	4126448	4126497	1.90	1	1
b3950	frwB	1				1	1	4141773	4141822	1.05	0	0
b3951	pflD	0	orf			1	1	4143523	4143572	0.88	0	0
b3961	oxyR	0	orf			1	1	4157148	4157197	1.00	0	0
b3965	trmA	1		b3966	btuB	1	1	4161485	4161534	1.86	1	0
b3968	rrsB	1				1	1	4164010	4164059	2.25	1	1
b3974	coaA	1				1	1	4173135	4173184	2.62	1	0
b3975	b3975	1		b3976	thrU	1	1	4173335	4173384	2.69	1	1
b3987	rpoB	1				1	1	4178960	4179009	0.99	0	0
b4000	hupA	1				1	1	4198024	4198073	3.44	1	1

b4007	rrsE	1				1	1	4205875	4205924	1.67	1	1
b4014	aceB	1				1	1	4213502	4213551	1.53	1	1
b4016	aceK	0	orf			1	1	4217202	4217251	1.59	0	0
b4022	yjbC	0	ig	b4023	yjbD	1	1	4229283	4229332	0.85	0	0
b4030	yjbA	1				1	1	4238408	4238457	2.35	0	1
b4056	yjbQ	1				1	1	4268367	4268416	3.91	1	1
b4060	yjcB	1				1	1	4272967	4273016	3.73	1	1
b4061	yjcC	1				1	1	4273667	4273716	3.97	1	1
b4459	ryjA	1		b4064	yjcD	1	1	4276267	4276316	3.65	1	1
b4066	yjcF	1				1	1	4280817	4280866	1.14	1	0
b4069	acs	1		b4070	nrfA	1	1	4285443	4285492	3.32	0	1
b4077	gltP	1				1	1	4292118	4292167	2.10	1	1
b4078	yjcO	1				1	1	4295168	4295217	0.89	1	1
b4079	fdhF	0	orf			1	1	4296493	4296542	0.88	0	0
b4085	alsE	1				1	1	4306443	4306492	1.89	0	0
b4088	alsB	0	orf			1	1	4309469	4309518	1.16	1	0
b4092	phnP	1				1	1	4312994	4313043	1.04	0	0
b4107	phnB	1				1	1	4323744	4323793	0.88	0	0
b4108	phnA	1		b4109	yjdA	1	1	4324694	4324743	1.56	1	1
b4111	proP	1				1	1	4328569	4328618	3.16	1	1
b4115	yjdE	1				1	1	4335494	4335543	2.34	0	0
b4116	adiY	0	orf			1	1	4336319	4336368	2.05	0	0
b4117	adiA	1				1	1	4338394	4338443	1.11	0	0
b4120	melB	0	orf			1	1	4342394	4342443	0.83	1	1
b4122	fumB	1				1	1	4345544	4345593	0.50	1	0
b4125	dcuS	0	orf			1	1	4348298	4348347	2.83	0	0
b4130	yjdL	1				1	1	4354048	4354097	0.75	1	1
b4133	cadC	1				1	1	4360324	4360373	1.64	1	1
b4134	pheU	1				1	1	4360924	4360973	1.70	1	1
b4139	aspA	1		b4140	fxsA	1	1	4366424	4366473	3.58	1	0
b4141	yjeH	1				1	1	4368274	4368323	0.73	1	1
b4146	yjeK	1		b4147	efp	1	1	4373699	4373748	1.12	1	1
b4159	yjeP	0	orf			1	1	4385899	4385948	0.71	0	0
b4163	glyV	1				1	1	4390025	4390074	1.50	1	1
b4177	purA	1				1	1	4402558	4402607	0.68	1	1
b4180	yjfH	1				1	1	4407033	4407082	0.88	0	0
b4194	sgaB	1				1	1	4419520	4419569	0.95	0	0
b4199	yjfY	1		b4200	rpsF	1	1	4422995	4423044	4.38	1	1
b4205	ytfA	0	ig	b4206	ytfB	1	1	4426045	4426094	0.93	0	0
b4215	ytfI	0	ig	b4216	ytfJ	1	1	4436595	4436644	0.73	1	1
b4219	msrA	1				1	1	4440222	4440271	1.74	1	1
b4226	ppa	1		b4227	ytfQ	1	1	4447997	4448046	1.04	1	1
b4231	yjfF	0	ig	b4232	fbp	1	1	4452547	4452596	0.73	0	0
b4233	mpl	0	orf			1	1	4454572	4454621	2.45	0	0
b4238	nrdD	1				1	1	4460956	4461005	2.31	1	0
b4255	yjgD	0	orf			1	1	4476810	4476859	1.19	1	0
b4257	yjgN	0	orf			1	1	4478488	4478537	0.85	0	0
b4258	valS	0	orf			1	1	4480563	4480612	1.10	0	0
b4263	yjgR	1				1	1	4488263	4488312	1.21	0	1
b4270	leuX	1				1	1	4494363	4494412	2.40	1	1
b4274	yjgW	0	ig	b4275	yjgX	1	1	4498038	4498087	0.69	0	0
b4278	yi41	1				1	1	4501413	4501462	2.95	1	1
b4279	yjhB	1				1	1	4501763	4501812	2.83	1	1
b4280	yjhC	0	ig	b4281	yjhD	1	1	4504013	4504062	1.83	0	1
b4295	yjhU	1				1	1	4518095	4518144	1.29	1	1
b4302	sgcA	1				1	1	4525670	4525719	2.45	1	1
b4305	sgcX	1				1	1	4530120	4530169	2.75	0	1
b4308	yjhR	0	ig	b4309	yjhS	1	1	4533970	4534019	2.41	1	1
b4312	fimB	1				1	1	4539045	4539094	2.74	1	1

b4313	fimE	1				1	1	4539995	4540044	2.10	1	0
b4318	fimF	1				1	1	4545771	4545820	1.35	0	0
b4321	gntP	1				1	1	4549171	4549220	1.79	0	0
b4322	uxuA	1				1	1	4549496	4549545	1.77	0	0
b4328	iadA	1				1	1	4557796	4557845	1.02	1	0
b4333	yjiK	0	orf			1	1	4561397	4561446	0.89	0	1
b4337	yjiO	1				1	1	4566498	4566547	0.99	1	1
b4338	yjiP	1				1	1	4566881	4566930	1.22	1	1
b4342	yjiT	1				1	1	4569856	4569905	2.42	1	1
b4348	hsdS	0	orf			1	1	4578670	4578719	3.02	0	0
b4354	yjiY	1		b4355	tsr	1	1	4589024	4589073	2.78	1	0
b4370	leuQ	1				1	1	4604949	4604998	1.56	1	1
b4376	osmY	1				1	1	4609399	4609448	0.79	1	0
b4400	creD	1				1	1	4635949	4635998	1.81	0	0

Supplementary Table S3. Confirmation of previously characterized Fis-binding sites in ChIP-chip analysis.

	bnum	Locus	Regulation	ChIP-chip	Regulon	Reference
1	b0116	*lpd*	+	NO	*lpd*	(Cunningham et al., 1998)
2	b0201	*rrsH*	+	YES	*rrsH-ileV-alaV-rrlH-rrfH*	(Hirvonen et al., 2001)
3	b0216	*aspV*	+	YES	*aspV*	(Keseler et al., 2005)
4	b0244	*thrW*	+	YES	*thrW*	(Keseler et al., 2005)
5	b0405	*queA*	+	YES	*queA*	(Slany and Kersten, 1992)
6	b0440	*hupB*	-	NO	*hupB*	(Claret and Rouviere-Yaniv, 1996)
7	b0536	*argU*	+	YES	*argU*	(Keseler et al., 2005)
8	b0673	*metT*	+	YES	*metT-leuW-glnUW-metU-glnVX*	(Verbeek et al., 1990)
9	b0743	*lysT*	+	NO	*lysT-valT-lysW*	(Verbeek et al., 1990)
10	b0971	*serT*	+	YES	*serT*	(Verbeek et al., 1990)
11	b1032	*serX*	+	YES	*serX*	(Keseler et al., 2005)
12	b1101	*ptsG*	-	YES	*ptsG*	(Shin et al., 2003)
13	b1109	*ndh*	+/-	YES	*Ndh*	(Jackson et al., 2004)
14	b1231	*tyrT*	+	YES	*tyrTV-tpr*	(Maurer et al., 2006)
15	b1237	*hns*	+	YES	*Hns*	(Falconi et al., 1996)
16	b1241	*adhE*	+	NO	*adhE*	(Membrillo-Hernandez et al., 1999)
17	b1274	*topA*	+	YES	*topA*	(Weinstein-Fischer and Altuvia, 2007)
18	b1530	*marR*	+	YES	*marRAB*	(Martin and Rosner, 1997)
19	b1739	*osmE*	-	NO	*osmE*	(Bordes et al., 2002)
20	b2189	*proL*	+	YES	*proL*	(Keseler et al., 2005)
21	b2231	*gyrA*	-	NO	*gyrA*	(Schneider et al., 1999)
22	b2234	*nrdA*	+	YES	*nrdAB*	(Augustin et al., 1994)
23	b2288	*nuoA*	+	YES	*nuoABCEFGHIJKL*	(Zhang et al., 2004)
24	b2348	*argW*	+	YES	*argW*	(Keseler et al., 2005)
25	b2397	*alaW*	+	YES	*alaWX*	(Verbeek et al., 1990)
26	b2401	*valU*	+	YES	*valUXYV*	(Keseler et al., 2005)
27	b2591	*rrsG*	+	YES	*rrsG-gltW-rrlG-rrfG*	(Hirvonen et al., 2001)
28	b2783	*mazE*	+	YES	*mazEF*	(Keseler et al., 2005)
29	b2967	*pheV*	+	YES	*pheV*	(Verbeek et al., 1990)
30	b3123	*rnpB*	+	NO	*rnpB*	(Choi et al., 2005)
31	b3171	*metY*	+	YES	*metY-yhbC-nusA-infB-rbfA-truB-rpsO-pnp*	(Verbeek et al., 1990)
32	b3260	*dusB*	-	YES	*dusB-fis*	(Ball et al., 1992)
33	b3278	*rrsD*	+	YES	*rrsD-ileU-alaU-rrlD-rrfD-thrV-rrfF*	(Verbeek et al., 1990)
34	b3357	*crp*	-	YES	*crp*	(Gonzalez-Gil et al., 1998)
35	b3365	*nirB*	-	YES	*nirBDC-cysG*	(Wu et al., 1998)
36	b3545	*proK*	+	YES	*proK*	(Verbeek et al., 1990)
37	b3588	*aldB*	-	YES	*aldB*	(Xu and Johnson, 1995)
38	b3699	*gyrB*	-	NO	*gyrB*	(Schneider et al., 1999)
39	b3723	*bglG*	-	NO	*bglGFB*	(Caramel and Schnetz, 2000)
40	b3756	*rrsC*	+	YES	*rrsC-gltU-rrlC-rrfC*	(Verbeek et al., 1990)
41	b3796	*argX*	+	YES	*argX-hisR-leuT-proM*	(Keseler et al., 2005)
42	b3851	*rrsA*	+	YES	*rrsA-ileT-alaT-rrlA-rrfA*	(Verbeek et al., 1990)
43	b3870	*glnA*	+	NO	*glnALG*	(Huo et al., 2006)
44	b3968	*rrsB*	+	YES	*rrsB-gltT-rrlB-rrfB*	(Verbeek et al., 1990)
45	b3976	*thrU*	+	YES	*thrU-tyrU-glyT-thrT*	(Verbeek et al., 1990)
46	b4000	*hupA*	+	YES	*hupA*	(Claret and Rouviere-Yaniv, 1996)
47	b4007	*rrsE*	+	YES	*rrsE-gltV-rrlE-rrfE*	(Verbeek et al., 1990)
48	b4069	*acs*	-	YES	*acs-yjcH-actP*	(Browning et al., 2004)
49	b4070	*nrfA*	-	YES	*nrfABCDEFG*	(Browning et al., 2005)
50	b4111	*proP*	+	YES	*proP*	(McLeod et al., 2002)
51	b4134	*pheU*	+	YES	*pheU*	(Keseler et al., 2005)
52	b4270	*leuX*	+	YES	*leuX*	(Keseler et al., 2005)
53	b4370	*leuQ*	+	YES	*leuQPV*	(Keseler et al., 2005)

Supplementary Table S4. Validation of 13 randomly selected Fis-binding sites and 2 control sites by real-time qPCR.

bnum	Gene	Type	Peak Start	Peak End	ChIP-chip	qPCR
b1618	*uidR*	ORF	1,694,620	1,694,669	4.89	5.03
b3909	*kgdT*	IG1	4,099,820	4,099,869	3.98	4.90
b4000	*hupA*	IG1	4,198,024	4,198,073	3.30	3.15
b1915	*yecF*	IG1	1,993,805	1,993,854	3.82	4.30
b0297	*eaeH*	IG1	313,093	313,142	1.93	2.26
b0705	*ybfL*	IG1	736,280	736,329	2.49	2.79
b1460	*ydcC*	ORF	1,530,006	1,530,055	2.29	5.13
b3357	*crp*	ORF	3,484,374	3,484,423	2.23	2.01
b0244	*thrW*	IG1	261,814	161,863	1.07	1.92
b1332	*ynaJ*	IG1	1,395,416	1,395,465	1.61	2.36
b1896	*otsA*	ORF	1,978,874	1,978,923	1.83	2.75
b3938	*metJ*	IG2	4,126,448	4,126,497	1.81	2.03
b2363	*yfdT*	IG2	2,474,103	2,474,152	0.87	1.50
b4025	*pgi*	NA	NA	NA	-0.30	-0.14
b0894	*dmsA*	NA	NA	NA	-0.31	0

The columns "Peak Start" and "Peak End" were obtained from NC_000913 build of the *E. coli* MG1655. The column "Type" indicates where Fis-binding sites are located relative to the known gene annotations. The "ChIP-chip" and "qPCR" columns indicate the level of enrichment ratio (log_2 ratio) obtained from Fis ChIP-chip and the quantitative PCR, respectively. The data in the "ChIP-chip" and "qPCR" columns are plotted in the **Fig. 2C**. "NA" indicates "not available".

Supplementary Figure S1. Fis bindings on all of rRNA promoter regions.
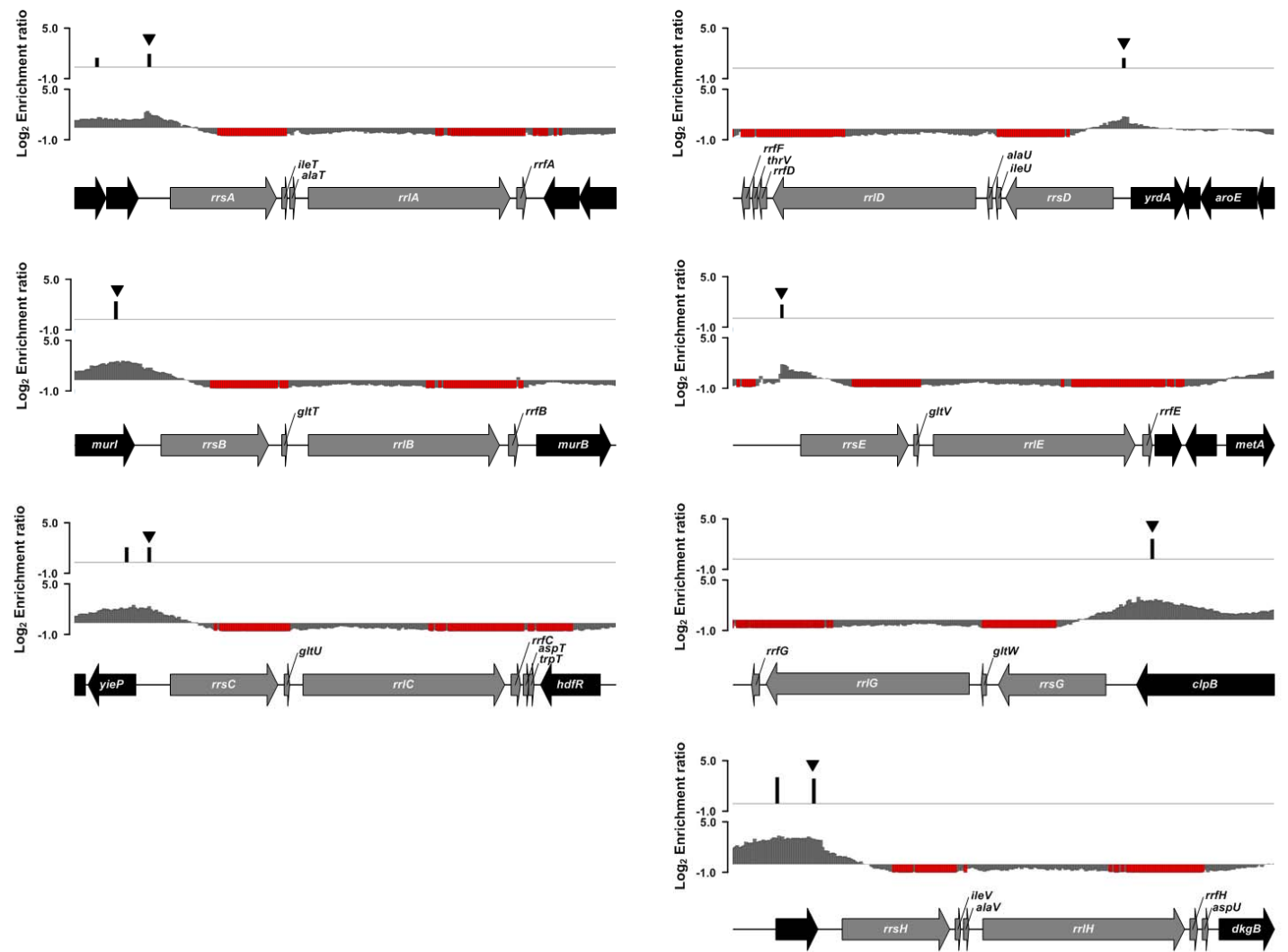
Supplementary Figure S2. Reproducibility of Fis ChIP-chip.
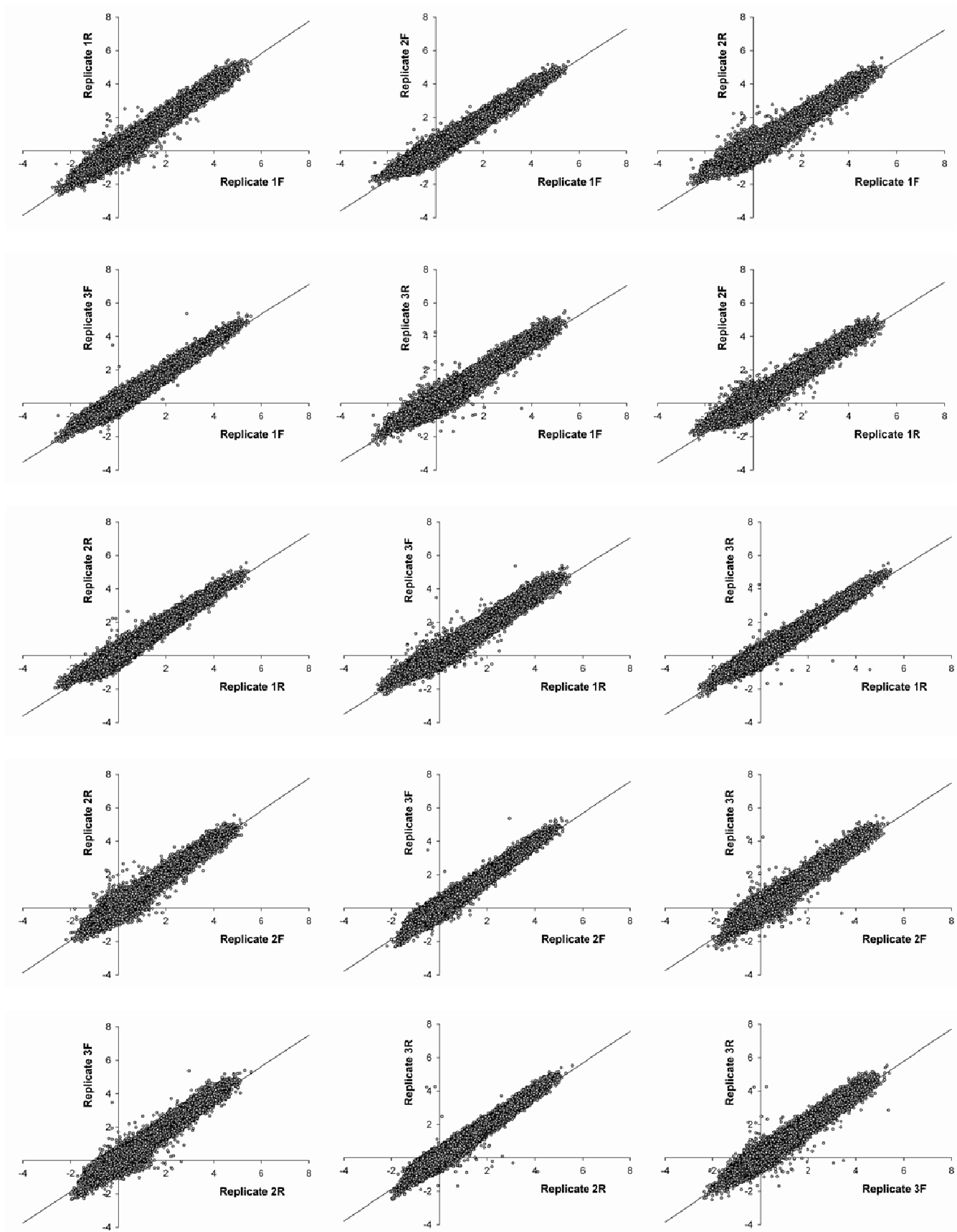
Supplementary Figure S3. The most significant non-palindromic (npFis) and palindromic (pFis) motifs found in the chromosomal sequence regions under the Fis ChIP-chip peaks with increasingly stringent log ratio cutoffs.
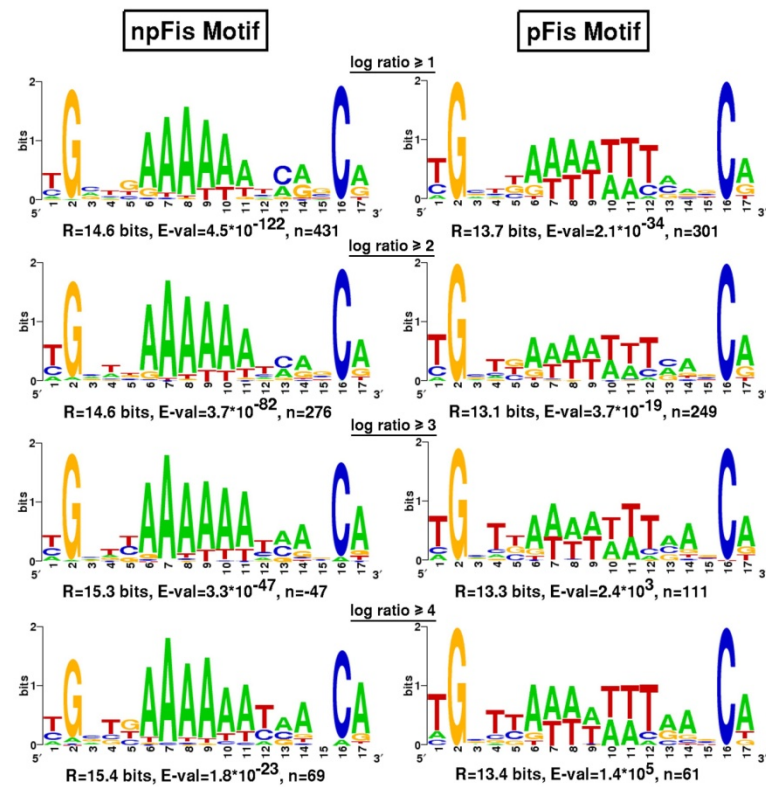
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