

Transcription	Translation S	Translation S	Transcription	Strand	Name
7423	7503	8282	8353	+	-
8354	8354	9160	9256	+	-
9271	9293	10486	10629	+	-
10630	10630	11295	11370	+	-
14725	14730	14999	15007	+	-
15895	15895	16986	17037	+	-
19927	19927	19217	19108	-	-
	22686	24779		+	-
	25203	24859		-	-
	25350	25748		+	-
	26837	29329		+	-
29806	29797	29405	29405	-	-
31016	30992	29964	29964	-	-
	32435	31845	31845	-	-
32572	32691	33731	33734	+	-
34852	34857	35342	35401	+	-
36419	36419	35382	34980	-	-
37602	37598	36579	36545	-	-
37748	37757	40027	40027	+	-
41004	41000	40161	40147	-	-
	41259	42137		+	-
	42149	43351		+	-
	44267	43482		-	-
	44455	45657		+	-
	45654	45986		+	-
46162	46185	47003	47045	+	-
	51344	50775		-	-
52222	52213	51542	51473	-	-
	55178	54822		-	-
	56516	59206		+	-
	59169	63101	64119	+	-
64431	64432	64956	65071	+	-
	67704	68525		+	-
	68842	69795		+	-
72827	72827	73747	73783	+	-
74701	74701	75528	75529	+	-
76728	76720	75854	75854	-	-
	77471	79294		+	-
85832	85828	85439	85436	-	-
	85940	86998		+	-
	87294	86986		-	-
	87513	88619		+	-
88729	88736	90151	90151	+	-
	92215	92601		+	-
	94984	94670		-	-
	96085	95063		-	-
98786	98829	99302	99302	+	-
99338	99343	100017	100053	+	-
	101885	100077		-	-
	104050	101882		-	-
	105168	104047		-	-

106061	106061	105165	-	-
107052	107052	106069	106065 -	-
	107776	107069	107069 -	-
109131	109110	107776	-	-
110796	110766	109132	109132 -	-
112455	112428	110797	110797 -	-
113193	113196	113810	117556 +	-
117609	117570	113884	113868 -	-
117746	117797	118375	118380 +	-
120337	120332	118848	118816 -	-
120451	120456	121085	121086 +	-
121614	121616	122233	+	-
	122230	124287	124287 +	-
124288	124298	124732	124761 +	-
125643	125650	126684	126684 +	-
128214	128822	129433	129525 +	-
130984	130975	130148	130148 -	-
131855	131843	131049	130987 -	-
	140662	139871	-	-
	142148	140649	-	-
148397	148355	147489	147489 -	-
148454	148485	149765	149832 +	-
151288	151288	149993	149993 -	-
152287	152233	151295	151289 -	-
153210	153222	153689	153710 +	-
153719	153722	154147	154195 +	-
154205	154205	154642	154736 +	-
156989	157022	157687	157687 +	-
	158075	157701	-	-
	159593	158562	-	-
161631	161551	161252	161252 -	-
162623	162456	161770	161725 -	-
162905	162896	162624	162624 -	-
	164058	163108	-	-
	166637	165774	-	-
166966	166933	166670	166664 -	-
	181360	181983	+	-
	182111	182653	+	-
	188861	189592	+	-
192414	192414	190624	190624 -	-
193264	193329	193904	193904 +	-
193905	194030	194800	194809 +	-
	194869	195237	+	-
195336	195361	196335	196776 +	-
	196830	197246	+	-
	200120	197931	-	-
	201509	200385	200385 -	-
202154	202038	201631	201631 -	-
205179	205157	204387	204323 -	-
	205976	205545	205545 -	-
206337	206337	205963	-	-
207040	207021	206383	206382 -	-

	207097	210696		+	-
211156	211091	210690	210681	-	-
212901	212842	211157	211157	-	-
	216148	215672		-	-
216558	216565	219414	219414	+	-
219621	219629	219946	220029	+	-
222649	222625	222209	222209	-	-
222682	222682	224403		+	-
	224400	225392	225664	+	-
227269	227269	227904		+	-
	230980	230399		-	-
	232130	230991		-	-
	232741	232130		-	-
232905	232908	233495	233495	+	-
234925	234921	234394	234307	-	-
235492	235492	236094	236188	+	-
	238954	238508		-	-
	239359	238958		-	-
	240385	241641		+	-
	242668	241760		-	-
	243983	243015		-	-
247510	247569	248555	248555	+	-
248556	248569	251058	251283	+	-
251362	251359	251066	250911	-	-
251498	251498	252664	252664	+	-
254707	254666	252684	252677	-	-
256318	256318	254708	254708	-	-
	257652	258269	258269	+	-
258437	258517	258996	258996	+	-
259205	259205	260650	260650	+	-
	261630	260773		-	-
261674	261674	262345		+	-
	262342	263442	263442	+	-
264389	264379	263543	263543	-	-
269364	269364	268624	268613	-	-
269409	269412	269813	269817	+	-
269870	269870	270676	270676	+	-
270816	270818	271918	272138	+	-
272863	272863	271922	271423	-	-
275287	275285	274614	274599	-	-
	277234	275825	275825	-	-
278381	278348	277299	277263	-	-
	278542	280434	280434	+	-
	281934	280567		-	-
282038	282050	283555	283560	+	-
283563	283570	284736		+	-
	284733	285530		+	-
	285527	286702		+	-
289307	289302	288346	288321	-	-
289590	289681	290193		+	-
	290190	290540	290552	+	-
290562	290564	290920	290922	+	-

290992	290992	291651	+	-
	291651	291959	291959 +	-
	292010	292267	+	-
	292379	293707	+	-
	293704	294033	+	-
	295326	296477	296477 +	-
	296554	297630	297630 +	-
	297632	298084	+	-
	298097	299236	+	-
299277	299277	300413	300413 +	-
	300566	301261	301261 +	-
	301325	302065	302065 +	-
	302085	302663	+	-
	302660	306148	+	-
306160	306160	306465	+	-
306774	306948	307175	307215 +	-
307317	307317	308084	+	-
308189	308240	309115	309407 +	-
309413	309465	310058	310083 +	-
310084	310084	312498	312530 +	-
313741	313838	314212	314212 +	-
314213	314286	314969	314969 +	-
	317296	316505	316500 -	-
317561	317547	317263	-	-
319394	319398	320252	320292 +	-
	322418	321555	-	-
322950	322714	322451	322419 -	-
323829	323840	323980	324027 +	-
	324039	324341	+	-
	324915	324514	-	-
	325509	326279	+	-
	329981	329181	-	-
331503	331590	331886	331886 +	-
332088	332091	333023	333080 +	-
333117	333129	334781	334781 +	-
335253	335244	334948	334948 -	-
336774	336646	335312	335254 -	-
336860	336870	337775	+	-
341762	341701	338876	338876 -	-
	343757	342435	-	-
	344928	343771	-	-
	345632	344943	-	-
	346982	345735	-	-
	347346	348533	+	-
	348530	349132	+	-
	350238	349702	-	-
352842	352842	351475	351470 -	-
353565	353565	352846	352843 -	-
354115	353972	353640	353640 -	-
	355221	354199	-	-
	355831	355376	355330 -	-
356299	356298	355828	-	-

356711	356672	356307	356300 -	-
358228	358207	356774	356770 -	-
358686	358698	359513	359513 +	-
359514	359621	360307	360307 +	-
	360682	360323	-	-
	363176	360774	-	-
363334	363387	363959	363959 +	-
363960	364134	364838	365164 +	-
365237	365234	364845	363349 -	-
	365383	366111	+	-
	367301	366108	-	-
367400	367400	368287	368638 +	-
368723	368723	368256	368253 -	-
368882	368884	369636	369636 +	-
370640	370623	369727	369727 -	-
	373847	373221	-	-
387460	387460	386798	386781 -	-
390449	390481	390711	390711 +	-
391960	391960	390833	390833 -	-
393526	393499	392027	392027 -	-
408491	408491	406782	406782 -	-
409261	409240	408578	408492 -	-
409315	409336	410637	410683 +	-
413006	413006	412314	-	-
420095	420110	420586	420615 +	-
	423227	423427	+	-
	423424	424014	+	-
	424028	424903	+	-
	425142	424924	-	-
	425200	425916	+	-
426012	426012	426581	426581 +	-
426582	426589	427755	427759 +	-
428790	428790	429599	429640 +	-
430629	430629	429658	429580 -	-
	431158	430658	-	-
434012	433880	432987	432987 -	-
434589	434456	434013	434013 -	-
436571	436567	436031	435809 -	-
437496	437499	438770	438770 +	-
	441202	441753	+	-
443050	443031	441865	441865 -	-
443196	443200	443652	443684 +	-
444097	444083	443760	443426 -	-
	445495	444194	-	-
446268	446253	445492	-	-
447122	447117	446269	446269 -	-
	448726	447632	447531 -	-
450171	450171	448723	-	-
	450295	451767	+	-
	451819	454818	+	-
	454806	456392	+	-
	456439	457038	+	-

457248	457248	457619	457691 +	-
	457852	458262	+	-
458358	458358	459110	459110 +	-
459111	459142	459630	459637 +	-
459772	459791	461155	461155 +	-
462786	462780	461266	461266 -	-
466899	466895	466335	466170 -	-
	467486	466971	466971 -	-
468040	468021	467518	467487 -	-
	468892	468041	468041 -	-
	469168	468941	468941 -	-
470280	470256	469297	469293 -	-
470370	470383	470973	470990 +	-
471203	471281	471766	471766 +	-
472312	472309	471908	471898 -	-
472516	472519	473352	473371 +	-
	474311	473514	-	-
	474860	474372	-	-
	482388	482020	-	-
	483568	483359	-	-
483847	483927	484475	484494 +	-
484679	484702	485454	485461 +	-
485529	485610	486536	486536 +	-
486683	486683	487168	487170 +	-
487171	487171	488184	488184 +	-
	488369	489514	+	-
489644	489658	490230	490230 +	-
490281	490281	490880	491301 +	-
491371	491371	490922	490851 -	-
	491893	491414	-	-
	492115	492927	+	-
492937	492937	493110	493245 +	-
	493901	493221	-	-
	494040	494684	+	-
	494749	495717	+	-
496575	496563	495721	495658 -	-
	496876	497790	+	-
	498258	497842	-	-
	498424	498633	+	-
	499678	498719	-	-
	500459	500088	-	-
	500528	501853	+	-
	502249	503163	+	-
	504782	503175	-	-
	505892	504993	-	-
	506124	507302	+	-
	507299	508483	+	-
	510317	508701	-	-
	510548	511921	+	-
512096	512096	512872	+	-
514497	514490	512970	512970 -	-
514674	514779	516737	516739 +	-

517133	517122	516715	516632	-	-
	517834	518247		+	-
	518774	519184		+	-
	519208	519564		+	-
	519667	520872		+	-
520940	520979	522175		+	-
	522166	523266	523339	+	-
523360	523365	524051	524085	+	-
524086	524086	525717	525774	+	-
525961	525961	527610	527610	+	-
	527785	529044		+	-
	529034	529804		+	-
	529838	530182		+	-
	530836	530222		-	-
	531146	532075		+	-
	532774	532187		-	-
	532896	534122		+	-
	534119	535291		+	-
537539	537535	535424	535424	-	-
	537823	540774		+	-
	541855	540974		-	-
	541952	542362		+	-
	542394	543182		+	-
543271	543300	544949	545001	+	-
545367	545357	545097	545085	-	-
545427	545436	545978	546777	+	-
546322	546309	546034	545489	-	-
546825	546811	546323	546323	-	-
549416	549417	549791	549935	+	-
	549936	550115		+	-
	552137	553204	553811	+	-
553890	553874	553308	553270	-	-
554076	554119	556107	556107	+	-
556151	556151	556444	556461	+	-
	556778	556515		-	-
	558695	559378	561152	+	-
	563645	562734		-	-
	564375	563737		-	-
564484	564484	565413		+	-
	565410	566201	566254	+	-
568874	568869	567028	567017	-	-
569295	569350	569928	569931	+	-
	570382	570020	570007	-	-
570861	570861	570379		-	-
	573137	571689		-	-
	575901	574132		-	-
	576624	577343		+	-
	577340	578809		+	-
	580158	578806	578626	-	-
581117	581188	583089	583093	+	-
584391	584373	584026	584026	-	-
	585047	587686		+	-

	587761	590355		+	-
	593181	592900		-	-
593181	593200	594189	594203	+	-
594204	594204	594872	594872	+	-
	596335	594917		-	-
597641	597641	596358	596358	-	-
598985	598900	597773	597773	-	-
598984	599022	599387		+	-
	599384	600268	600268	+	-
600398	600593	600829	600888	+	-
606101	606101	607591	607591	+	-
610964	610968	611888	612060	+	-
612071	612095	613402	613940	+	-
614042	614079	614702	615625	+	-
	616904	616113		-	-
	618399	616891		-	-
619268	619235	618972	618908	-	-
620131	620114	619269	619269	-	-
629988	629988	630575	630575	+	-
	631292	630651	630651	-	-
632218	632215	631289		-	-
633046	633046	632219	632219	-	-
634169	634169	633048	633047	-	-
634262	634262	635521	635521	+	-
637901	637901	638500	638631	+	-
638858	638849	638472	638459	-	-
	639703	640206		+	-
641567	641567	640746	640017	-	-
644729	644729	644538	644534	-	-
646805	646840	647928	647939	+	-
647940	647940	649031	649058	+	-
649682	649624	649211	649211	-	-
	658992	660086		+	-
	660056	666172		+	-
	666330	668183		+	-
	679628	680479		+	-
	680476	681315	681315	+	-
682990	682980	682615	681506	-	-
684008	684065	684793	684864	+	-
	687441	688478	688530	+	-
	689925	692126		+	-
	694277	697111		+	-
	698070	697105		-	-
699573	699565	698249	698184	-	-
701386	701322	699658	699647	-	-
701565	701595	702020	702021	+	-
703531	703588	704007	704034	+	-
704035	704035	704484	704598	+	-
706821	706778	706401	706386	-	-
707820	707809	706925	706922	-	-
708638	708582	707962	707962	-	-
	714186	713815		-	-

	714725	714315	-	-
	717593	715182	-	-
	717913	721143	+	-
	721339	723360	+	-
	726086	725442	-	-
726554	726532	726197	726197 -	-
728306	728288	726555	726555 -	-
728353	728358	729176	729198 +	-
730428	730144	729230	728390 -	-
731357	731357	730878	730839 -	-
732504	732504	731716	731716 -	-
750391	750423	751379	751440 +	-
756143	756143	755559	755518 -	-
	757215	758141	+	-
	758178	759227	+	-
	759224	759955	+	-
760003	760006	760590	760590 +	-
760686	760692	761327	761349 +	-
	761883	761398	761386 -	-
762356	762356	761883	-	-
	763810	762467	-	-
764694	764649	763861	763811 -	-
766592	766594	769110	769122 +	-
772682	772682	772176	772176 -	-
	774370	776085	+	-
	776082	776882	+	-
	777002	778069	+	-
778988	778954	778127	778072 -	-
	780614	780183	780183 -	-
783066	783053	781755	781755 -	-
783224	783247	784218	784218 +	-
784420	784421	784615	784623 +	-
	786978	787565	+	-
787582	787639	788574	788671 +	-
	791187	788677	-	-
792633	792663	793349	793349 +	-
793350	793504	794775	795474 +	-
795612	795612	794911	794867 -	-
796249	796255	797004	797004 +	-
	797233	798393	+	-
	799561	800448	+	-
	800448	800942	+	-
803921	803917	803303	803303 -	-
805372	805359	804976	804976 -	-
812035	812035	811097	811097 -	-
812607	812599	812045	812036 -	-
813199	813192	812608	812608 -	-
816162	816155	815757	815757 -	-
	817287	816220	816218 -	-
817863	817831	817271	-	-
818657	818652	817930	817930 -	-
819356	819354	818701	818701 -	-

821366	821371	821634	821636 +	-
	831397	830513	-	-
	831503	832921	+	-
	833855	833058	833058 -	-
835926	835912	835331	-	-
836097	836313	838565	838565 +	-
840273	840270	839818	839818 -	-
	840603	840274	-	-
	841154	840600	-	-
843736	843650	843321	843304 -	-
843844	843917	844414	844473 +	-
848395	848366	847872	847681 -	-
	848772	848437	-	-
849449	849449	850714	+	-
	850711	851286	851298 +	-
852612	852566	851784	851779 -	-
854324	854319	852613	852613 -	-
856720	856723	858417	+	-
	858414	859073	+	-
	867607	864299	-	-
	868511	867870	-	-
	871735	868508	-	-
	873083	871863	-	-
	875851	873080	-	-
	878753	876015	-	-
	878923	879936	+	-
	880045	881061	+	-
882915	882967	883380	883381 +	-
917784	917784	915661	915605 -	-
	919849	920940	+	-
922624	922623	921013	921013 -	-
923155	923144	922677	922677 -	-
	930468	930971	+	-
931018	931018	932073	932125 +	-
933381	933347	932889	932881 -	-
	936525	935896	-	-
937760	937740	936721	936666 -	-
937925	938098	939189	939189 +	-
939399	939408	939914	939914 +	-
940822	940827	941162	941176 +	-
942684	942734	943429	943429 +	-
945112	945116	947281	947281 +	-
947431	947481	948125	948163 +	-
949518	949519	950547	950561 +	-
950594	950594	951373	951373 +	-
952879	952880	953704	953704 +	-
	955229	953772	-	-
955455	955455	956708	957477 +	-
	958179	957640	-	-
962460	962416	959477	959477 -	-
970432	970418	968772	968768 -	-
	970848	971240	971242 +	-

971507	971563	972567	972567	+	-
	972816	973559		+	-
	973613	974533		+	-
	974541	975299		+	-
	975931	975311		-	-
976810	976779	976021	976021	-	-
	978051	978419		+	-
	988387	989586		+	-
989732	989732	990097		+	-
	990097	990417	990417	+	-
990418	990442	991422		+	-
	991391	991639	991639	+	-
991640	991674	993422	993889	+	-
	995820	994075	991768	-	-
997358	997358	995817		-	-
	998277	997468		-	-
	998900	999727		+	-
	999807	1001855		+	-
	1001918	1002127		+	-
	1002889	1003203		+	-
1005834	1005773	1005537	1003329	-	-
	1006235	1006498		+	-
	1006835	1007632		+	-
	1007708	1007992		+	-
	1008007	1008876		+	-
	1009118	1009756		+	-
	1009753	1010016		+	-
	1010013	1010567		+	-
	1010564	1011163		+	-
	1011612	1013594		+	-
	1014817	1013930		-	-
	1015636	1016208		+	-
	1016357	1016782		+	-
	1016859	1018247		+	-
	1018250	1019386		+	-
	1028016	1027006		-	-
1028446	1028454	1029173	1029220	+	-
1029221	1029221	1030477	1030477	+	-
	1030651	1030914		+	-
	1031382	1031822		+	-
	1033780	1034724		+	-
	1034721	1034987		+	-
	1037220	1037684		+	-
	1042607	1042897		+	-
	1047439	1047660		+	-
1050075	1050128	1050703	1050703	+	-
1052734	1052720	1052016	1051996	-	-
1053680	1053690	1054094	1054354	+	-
1055211	1055159	1054113	1053727	-	-
1055153	1055153	1055929		+	-
	1055929	1056696		+	-
	1056693	1057082	1057170	+	-

	1058389	1069140		+	-
	1069867	1069241		-	-
	1070603	1069869		-	-
	1071836	1070946		-	-
	1072687	1071833		-	-
	1074404	1072680		-	-
	1075914	1074418		-	-
	1076695	1075901		-	-
	1076877	1076692		-	-
	1077556	1076888		-	-
	1078355	1077540		-	-
	1079156	1078371		-	-
	1080535	1079153		-	-
	1081067	1080795		-	-
1082767	1082662	1081607	1081607	-	-
	1084375	1082768		-	-
1086690	1086690	1087010	1087020	+	-
1087754	1087759	1088118	1088118	+	-
	1088748	1088221	1088221	-	-
	1090694	1088745		-	-
	1091610	1090687		-	-
1092585	1092512	1091634	1091634	-	-
1092581	1092630	1094465	1094545	+	-
1095138	1095138	1094569	1094252	-	-
1095166	1095291	1095761	1095771	+	-
1097133	1097210	1097992	1098016	+	-
1101808	1101814	1103178	1103178	+	-
	1108859	1108431		-	-
	1109425	1109805	1109805	+	-
1110937	1110937	1109840	1109840	-	-
1111747	1111747	1111181	1110938	-	-
1111754	1111790	1112185	1112185	+	-
1112263	1112444	1114453	1114453	+	-
	1114471	1115970		+	-
1119401	1119389	1118715	1118118	-	-
	1120750	1119488		-	-
	1121001	1121864		+	-
1122858	1122858	1121914	1121914	-	-
	1122944	1124461		+	-
	1125144	1124740		-	-
1125268	1125316	1126290		+	-
	1126290	1128311	1128316	+	-
	1129820	1128399		-	-
	1130959	1130357		-	-
	1131058	1131933		+	-
1133510	1133510	1132833	1132815	-	-
1135959	1135999	1136982	1136990	+	-
1137958	1137958	1137062	1137059	-	-
	1138257	1138469		+	-
1138532	1138532	1139287	1139346	+	-
1142352	1142427	1142822	1142822	+	-
1144372	1144372	1143881	1143827	-	-

	1145297	1144509	-	-
1149753	1149687	1149376	-	-
1150992	1150976	1150092	1150084 -	-
	1151954	1151004	1150998 -	-
1152424	1152376	1151951	-	-
1155649	1155548	1154982	-	-
	1156225	1155650	1155650 -	-
1157894	1157894	1158124	1158136 +	-
	1159414	1159731	1159731 +	-
1160554	1160554	1159871	1159863 -	-
1161451	1161318	1160557	1160555 -	-
1162770	1162770	1162108	-	-
	1163234	1162812	1162771 -	-
1163740	1163686	1163231	-	-
1164899	1164899	1166038	+	-
	1166035	1167204	+	-
	1167204	1167911	1167924 +	-
	1169093	1168383	1168383 -	-
1170154	1170115	1169090	-	-
1170518	1170449	1170180	1170180 -	-
1172025	1172012	1170519	1170519 -	-
1172147	1172242	1172538	1172750 +	-
	1172917	1173972	+	-
1173980	1173984	1174715	1174743 +	-
1174750	1174750	1175358	1175400 +	-
	1177110	1175506	1175440 -	-
1178934	1178934	1178131	1178130 -	-
1179578	1179575	1179057	1179044 -	-
1180253	1180240	1179602	1179597 -	-
	1183399	1182998	-	-
1184979	1184971	1184252	1184242 -	-
1187342	1187334	1185040	1185037 -	-
1187887	1187824	1187486	1187406 -	-
	1188395	1188063	1188063 -	-
1188931	1188931	1188392	-	-
	1189140	1189790	+	-
	1191443	1190187	1190168 -	-
1195585	1195487	1195032	1195019 -	-
1195688	1195697	1196164	1196175 +	-
1196283	1196327	1196869	1196869 +	-
1197543	1197538	1196942	1196942 -	-
	1198166	1197621	-	-
1198544	1198531	1198223	1198167 -	-
1199229	1199184	1198786	1198786 -	-
1204782	1204782	1206134	+	-
1207572	1207611	1208144	1208847 +	-
1208854	1208651	1208205	1208175 -	-
1210118	1210101	1208866	1208855 -	-
	1210255	1211046	+	-
	1217143	1214258	-	-
	1219338	1217290	-	-
	1219582	1221774	+	-

	1221771	1223258		+	-
1225098	1225100	1225486	1225486	+	-
1225487	1225647	1225964	1225981	+	-
	1229664	1226080		-	-
	1230579	1229677		-	-
	1231741	1230710		-	-
	1235456	1237141		+	-
	1237141	1237716		+	-
	1237701	1238474		+	-
	1238801	1238505		-	-
	1239683	1238820		-	-
	1240827	1239703		-	-
	1242057	1240840		-	-
	1243137	1242085		-	-
1245531	1245604	1246569	1246603	+	-
	1246734	1248476		+	-
	1248992	1248486		-	-
	1249465	1249028		-	-
	1249736	1250182		+	-
	1251615	1250221		-	-
	1251951	1251640		-	-
	1252081	1252662		+	-
	1252830	1253339		+	-
	1253339	1253563		+	-
1253597	1253637	1255148	1255148	+	-
1255253	1255278	1256405	1256405	+	-
	1257099	1256461		-	-
	1257917	1257183		-	-
	1258755	1257910		-	-
	1259286	1258810		-	-
	1260026	1259382		-	-
	1260368	1261159		+	-
	1261163	1261708		+	-
	1261739	1262506		+	-
	1262503	1263816		+	-
	1263942	1264955		+	-
	1265034	1266293		+	-
1267317	1267317	1266298	1266295	-	-
	1267399	1267722		+	-
1268736	1268736	1268017	1268017	-	-
	1270160	1268793		-	-
	1271185	1270265		-	-
	1272674	1272033		-	-
	1273377	1272667		-	-
	1274282	1273374		-	-
1274599	1274599	1274279		-	-
1276253	1276253	1274610		-	-
	1278627	1276435		-	-
1281294	1281280	1280834	1280834	-	-
	1282371	1281466		-	-
1282460	1282509	1283144	1283205	+	-
1283255	1283308	1285296	1285345	+	-

1287107	1287105	1285351	1285315	-	-
	1288363	1287215	-	-	-
1288563	1288564	1290528	1290537	+	-
1290759	1290770	1292848	1292856	+	-
1292908	1292908	1294233	1294258	+	-
1294800	1294784	1294305	1294305	-	-
1297353	1297328	1296732	1296732	-	-
1297479	1297479	1298675		+	-
	1298675	1299316	1299320	+	-
1299435	1299551	1300624	1300624	+	-
1300711	1300729	1301100	1301121	+	-
1302064	1302064	1301255	1300995	-	-
	1302667	1302074		-	-
	1302850	1302671	1302668	-	-
	1303026	1302847		-	-
	1303953	1303072		-	-
1306576	1306576	1305362	1305362	-	-
	1307527	1308087		+	-
	1309356	1308139		-	-
1310044	1310044	1309535	1309535	-	-
1311845	1311833	1311057	1311043	-	-
1311980	1311994	1312314	1312326	+	-
1313182	1313112	1312387	1312366	-	-
	1313617	1313210	1313201	-	-
1326459	1326474	1328357		+	-
	1328354	1329043	1329043	+	-
	1329810	1329103	1329103	-	-
1330775	1330763	1329807		-	-
	1333607	1330809		-	-
	1334590	1333622	1333622	-	-
1335066	1335066	1334587		-	-
	1335353	1338226		+	-
	1339547	1344934		+	-
1348871	1348870	1348535	1348535	-	-
1349521	1349519	1348884	1348884	-	-
	1356306	1354249		-	-
1359874	1359876	1362182	1362221	+	-
1362283	1362305	1362754	1362776	+	-
1363648	1363648	1362854	1362853	-	-
1365162	1365296	1366372		+	-
	1366369	1367181		+	-
1369480	1369480	1369896	1369896	+	-
	1369976	1370410		+	-
	1370449	1370856		+	-
	1372434	1370974		-	-
1372496	1372497	1372736	1372745	+	-
1373799	1373794	1373192	1373154	-	-
1378926	1378855	1378463	1378463	-	-
	1381330	1383498		+	-
1383665	1383665	1384033	1384033	+	-
	1385289	1384162	1384162	-	-
	1386473	1385286		-	-

1387462	1387462	1386458	-	-
1388887	1388864	1387464	1387463 -	-
1389841	1389836	1388943	1388938 -	-
	1389943	1390557	+	-
1391559	1391556	1391344	1391344 -	-
1392040	1391984	1391625	1391625 -	-
1393011	1393008	1392124	1392112 -	-
1394076	1394076	1393012	1393012 -	-
1397663	1397663	1396455	1396319 -	-
1398068	1398057	1397674	1397664 -	-
1398429	1398428	1398069	1398069 -	-
1399280	1399266	1398430	1398430 -	-
1401450	1401406	1400723	-	-
1402674	1402667	1401540	1401467 -	-
	1403190	1402741	-	-
	1403280	1404467	+	-
1406018	1405978	1404563	1404474 -	-
	1406265	1408514	+	-
1408692	1408698	1409678	1409690 +	-
1411943	1411944	1414037	1414037 +	-
1414880	1414855	1414238	1414238 -	-
1419065	1419060	1418515	1418398 -	-
1420013	1420013	1419156	1419137 -	-
	1423650	1424060	+	-
1424209	1424216	1425808	1425808 +	-
	1429158	1428004	-	-
	1430783	1429167	-	-
	1431406	1430840	-	-
	1433816	1431606	-	-
	1433953	1434366	+	-
1434408	1434477	1434656	1434685 +	-
1436037	1436037	1434787	1434765 -	-
	1438108	1436630	-	-
1438561	1438561	1439742	1439742 +	-
1439790	1439801	1440346	1440346 +	-
1440347	1440355	1440747	1440747 +	-
1440815	1440827	1442005	1442005 +	-
1442247	1442238	1442017	1440861 -	-
1443805	1442522	1442358	1442358 -	-
	1444703	1447084	+	-
	1447230	1448858	+	-
1449719	1449733	1450803	1450803 +	-
1450934	1450946	1452106	1452133 +	-
1453084	1453084	1452137	1452137 -	-
	1454574	1453699	-	-
	1455014	1454571	-	-
1455086	1455149	1456687	1456687 +	-
1456832	1456844	1458676	1459013 +	-
	1464324	1463341	-	-
1466690	1466685	1464877	1464877 -	-
1466782	1466798	1467154	+	-
	1467151	1467966	1468011 +	-

1468291	1468291	1467998	1467998	-	-
	1469304	1468360		-	-
	1469420	1470292		+	-
1471783	1471783	1470881	1470881	-	-
	1471920	1472285		+	-
	1472282	1473271		+	-
1475382	1475373	1474783	1474783	-	-
1475516	1475523	1475978	1475984	+	-
1478069	1478060	1477191	1477078	-	-
1488970	1488896	1486533	1486468	-	-
1490329	1490329	1488971	1488971	-	-
1496293	1496223	1494685	1494591	-	-
	1499207	1498509		-	-
	1499569	1499207		-	-
	1500612	1499575		-	-
	1502978	1500609		-	-
	1503720	1502986		-	-
	1504229	1503735		-	-
1508991	1508993	1509859	1509883	+	-
1509888	1509891	1510262	1510262	+	-
	1512391	1511507		-	-
	1514517	1515905		+	-
	1518294	1515988		-	-
1522679	1522679	1521624	1521624	-	-
	1522678	1523121		+	-
	1523118	1524611	1524611	+	-
	1528586	1527687		-	-
	1528685	1529431		+	-
1532493	1532537	1533019	1533019	+	-
	1535441	1534002		-	-
1538765	1538857	1539567	1539573	+	-
	1539574	1544187		+	-
	1545653	1545132		-	-
	1546433	1545678		-	-
	1547232	1546426		-	-
1547674	1547641	1547288	1547288	-	-
	1554499	1555731		+	-
1556836	1556777	1556505		-	-
1557769	1557813	1558514	1558531	+	-
1558676	1558723	1559484		+	-
	1559481	1560383	1560390	+	-
1561267	1561285	1561812	1561812	+	-
	1564546	1564217	1564185	-	-
	1566180	1564543		-	-
	1566491	1566177		-	-
1568049	1568023	1566737	1566737	-	-
1569035	1569026	1568148	1568148	-	-
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1573995	1573986	1573525	1573018	-	-
1575438	1575430	1574072	1574072	-	-
1577104	1577074	1575512	1575512	-	-
1579778	1579773	1578181	1577603	-	-

	1581276	1579999	-	-
	1581438	1582199	+	-
	1582196	1583593	1583666 +	-
1587966	1587973	1589337	1589350 +	-
	1591792	1590533	1590527 -	-
1593309	1593301	1592735	1592691 -	-
1593954	1593954	1593379	1593379 -	-
	1594517	1594032	1593955 -	-
1595584	1595584	1594514	-	-
	1596024	1596980	+	-
	1597001	1597924	+	-
	1597921	1599033	1599085 +	-
1600548	1600540	1599122	1599114 -	-
	1601426	1602394	+	-
	1602441	1603346	+	-
1607929	1607929	1607579	1607570 -	-
	1608998	1607997	-	-
1610305	1610296	1610027	-	-
1612004	1612116	1612457	1612457 +	-
1613181	1613232	1613552	+	-
	1613549	1614325	1614325 +	-
1614442	1614577	1617777	1617829 +	-
1617998	1618025	1619419	1619428 +	-
1630144	1630144	1629842	1627342 -	-
1630869	1630839	1630555	1630335 -	-
	1631637	1630870	-	-
	1631783	1632454	1632454 +	-
	1632456	1633799	+	-
	1633937	1636258	+	-
1636259	1636262	1636924	1636924 +	-
1636925	1636928	1637350	+	-
	1640960	1641448	+	-
	1641445	1642857	+	-
	1646032	1647531	+	-
	1647518	1648309	+	-
1650036	1650036	1650410	+	-
	1650397	1650828	1651121 +	-
	1652383	1651520	-	-
1652728	1652679	1652416	1652407 -	-
	1652806	1653129	+	-
	1653126	1654037	+	-
1655012	1654894	1654670	1654450 -	-
	1655977	1655792	-	-
	1660530	1660258	-	-
1664759	1664925	1666349	1666349 +	-
	1667640	1668110	+	-
	1668631	1669716	+	-
	1670252	1670554	+	-
	1671786	1672316	+	-
	1674005	1672524	-	-
	1678220	1676298	-	-
1678455	1678455	1679087	1679087 +	-

1679100	1679100	1679732	1679742 +	-
1679817	1679817	1680182	1680211 +	-
	1681714	1680194	-	-
	1682072	1681728	-	-
	1683478	1682084	-	-
	1684438	1683488	-	-
	1684827	1684435	-	-
	1686483	1685716	-	-
	1689399	1686508	-	-
	1689791	1689399	-	-
	1690605	1689829	-	-
	1691248	1690610	-	-
	1692149	1691238	-	-
	1692838	1692146	-	-
	1693161	1692835	-	-
	1693604	1693245	-	-
	1693854	1693621	-	-
	1694234	1693851	-	-
1694427	1694438	1694908	1694982 +	-
1695101	1695133	1695480	1695484 +	-
1695498	1695498	1696412	+	-
	1696409	1696879	+	-
	1696876	1697376	+	-
	1697376	1698278	1698439 +	-
1698449	1698449	1699042	1699108 +	-
1699109	1699109	1701676	1701676 +	-
	1702466	1701717	-	-
	1704529	1702463	-	-
	1705163	1704660	-	-
	1705795	1705205	-	-
	1706514	1705777	-	-
	1707171	1706527	-	-
	1707767	1707168	-	-
	1710182	1707906	-	-
	1710624	1710319	-	-
	1711034	1710714	-	-
	1712194	1711085	-	-
	1712906	1712259	-	-
	1713243	1712983	-	-
	1713667	1713260	-	-
	1714113	1713772	-	-
	1714897	1714208	-	-
	1715663	1714992	-	-
	1716870	1715965	-	-
	1717465	1717181	-	-
	1718033	1717773	-	-
	1723033	1722209	-	-
	1723600	1723322	-	-
	1724435	1723698	-	-
	1725205	1724519	-	-
	1725780	1725388	-	-
	1726014	1725802	-	-

	1736095	1735655	-	-
	1736696	1736169	-	-
	1737484	1736693	-	-
	1739152	1737914	-	-
	1739716	1739156	-	-
	1741401	1739731	-	-
	1741672	1741403	-	-
	1742531	1741656	-	-
	1742786	1742574	-	-
	1743651	1742905	-	-
	1745147	1746253	+	-
	1746707	1746276	1746263 -	-
1747073	1747068	1746694	-	-
1747685	1747799	1749124	+	-
	1749121	1750260	1750270 +	-
1750271	1750271	1750999	+	-
	1750996	1751910	1751977 +	-
	1752362	1751913	1751913 -	-
1752767	1752756	1752355	-	-
1754872	1754830	1754585	1754446 -	-
	1756234	1755968	-	-
	1757193	1756543	-	-
	1757525	1757190	-	-
	1759666	1757522	-	-
	1760270	1759659	-	-
	1761242	1760754	-	-
	1761478	1761239	-	-
	1761801	1761475	-	-
	1763075	1762851	-	-
	1765398	1765754	+	-
	1767332	1768594	+	-
	1768937	1769581	+	-
	1769578	1771503	+	-
	1772151	1771843	-	-
	1773748	1775583	+	-
	1775606	1775971	+	-
	1776052	1776483	+	-
	1776483	1776824	+	-
	1776821	1777312	+	-
	1777309	1777632	+	-
	1778121	1778921	+	-
	1778992	1779642	+	-
	1779635	1783384	+	-
	1783804	1787409	+	-
	1788754	1790559	+	-
1796459	1796459	1797373	1797484 +	-
1797603	1797603	1797860	1797910 +	-
	1799110	1798037	-	-
	1799371	1799889	+	-
1800012	1800031	1800864	1800864 +	-
	1801260	1800868	-	-
	1801829	1801428	-	-

1801839	1801941	1802144	1802231 +	-
1802243	1802504	1802740	1802934 +	-
1803750	1803736	1802750	1802307 -	-
1804153	1804089	1803802	1803751 -	-
1804257	1804257	1804709	1804726 +	-
1806164	1806403	1806837	1806837 +	-
1808259	1808314	1809936	1809953 +	-
1810042	1810042	1810503	1810522 +	-
	1811843	1810596	1810535 -	-
1812335	1812335	1812700	1812713 +	-
1813007	1813007	1813774	1813790 +	-
	1813925	1814920	+	-
1814988	1814988	1815485	1815498 +	-
1817638	1817534	1816221	-	-
1817796	1817818	1818444	1818444 +	-
1821352	1821352	1819856	1819728 -	-
1822150	1822056	1821463	1821463 -	-
1824228	1824281	1824514	1824514 +	-
1824846	1824806	1824588	1824588 -	-
1827505	1827514	1827843	+	-
	1827843	1828172	1828189 +	-
1832789	1832789	1832244	1832244 -	-
1834465	1834465	1835079	1835079 +	-
1836195	1836200	1836688	1837352 +	-
1837093	1837090	1836716	1836528 -	-
1837419	1837409	1837104	1837094 -	-
1840112	1840211	1840396	1840399 +	-
1844442	1844525	1845025	1845056 +	-
	1845057	1846742	+	-
	1855102	1852772	-	-
	1855324	1855806	+	-
	1858863	1859369	+	-
	1859387	1860388	+	-
	1860530	1863463	+	-
1869673	1869673	1867295	1867287 -	-
	1870715	1869789	1869674 -	-
	1872243	1873361	+	-
	1874598	1873459	-	-
	1874783	1875478	+	-
	1876562	1875861	-	-
	1876703	1877623	+	-
1879541	1879541	1878642	-	-
1881177	1881165	1880497	1880464 -	-
	1881684	1881178	1881178 -	-
1883081	1883081	1881681	-	-
1883696	1883645	1883166	1883082 -	-
1884346	1884297	1883737	1883725 -	-
1885356	1885387	1885902	1885926 +	-
1886422	1886347	1886090	1886090 -	-
	1894875	1894306	1894264 -	-
1896098	1896098	1894872	-	-
	1897459	1898208	1898208 +	-

1898209	1898410	1899057	1899066 +	-
1905406	1905483	1906565	1906565 +	-
1907553	1907544	1906669	1906669 -	-
1911261	1911336	1911584	1911584 +	-
1911602	1911619	1911984	1912005 +	-
1912006	1912008	1913249	+	-
	1913242	1913955	1914002 +	-
1914062	1914063	1914512	1914512 +	-
1914861	1914856	1914587	1914587 -	-
1917499	1917515	1917814	1917967 +	-
1920642	1920644	1921222	1921242 +	-
1921806	1921819	1922310	1922310 +	-
1924601	1924623	1925459	1925466 +	-
	1925962	1926321	+	-
	1926302	1926781	1926843 +	-
	1927698	1930259	+	-
	1930256	1931374	+	-
	1931371	1932738	+	-
	1932749	1933363	+	-
	1933453	1934868	+	-
1934976	1935009	1935704	1935743 +	-
	1945726	1945349	-	-
	1945897	1946130	1946130 +	-
1947028	1947028	1946150	-	-
	1947409	1948635	+	-
	1949360	1948656	-	-
	1950626	1951840	+	-
	1953880	1951859	-	-
1954018	1954018	1954488	1954808 +	-
1955016	1954988	1954503	1954451 -	-
	1958848	1955744	-	-
1961029	1961067	1961330	1961348 +	-
1961363	1961363	1962226	1962254 +	-
	1966087	1964846	-	-
	1966824	1967396	+	-
	1967854	1967423	1967423 -	-
1968806	1968841	1969098	1969463 +	-
1969527	1969524	1969132	1969132 -	-
	1971415	1970108	-	-
1971513	1971513	1972430	1972458 +	-
	1980203	1979406	-	-
	1980327	1981475	+	-
1984585	1984533	1984339	1984337 -	-
	1986376	1984604	1984604 -	-
1986965	1986965	1986369	-	-
	1988004	1987006	1986987 -	-
1988624	1988624	1988001	-	-
1988764	1988812	1991607	1991607 +	-
1992233	1992220	1991627	1991618 -	-
1993988	1993910	1992414	1992392 -	-
2000511	2000514	2001803	2001850 +	-
2003987	2003987	2001918	2001916 -	-

	2005263	2004079	2004030 -	-
2005808	2005808	2005260	-	-
	2007304	2006816	-	-
	2008728	2010293	+	-
	2014235	2013156	-	-
	2014337	2015212	+	-
2018069	2018069	2017608	2017214 -	-
2018491	2018468	2018079	2018070 -	-
2027780	2027776	2026556	2026529 -	-
2028311	2028311	2027781	2027781 -	-
2029225	2029213	2028326	2028325 -	-
2030412	2030412	2029375	2029375 -	-
2030792	2030781	2030452	2030413 -	-
2034205	2034282	2034566	2034567 +	-
2034573	2034573	2035751	2035754 +	-
2041220	2041220	2040012	2040012 -	-
2043684	2043667	2041295	2041272 -	-
2044364	2044360	2043707	2043685 -	-
2047172	2047172	2048026	2048026 +	-
2048027	2048091	2048729	2048743 +	-
2048744	2048744	2049937	2049954 +	-
2051510	2051510	2052691	2052808 +	-
2057882	2057972	2058451	+	-
2066367	2066369	2068117	+	-
	2068117	2069193	2069196 +	-
	2071312	2070389	-	-
	2071408	2072247	+	-
	2072806	2072342	-	-
	2073453	2074349	+	-
2074350	2074604	2074903	2074903 +	-
	2076261	2077043	+	-
	2077804	2077040	-	-
	2078279	2077902	-	-
	2079138	2078272	-	-
	2079554	2079135	-	-
	2080147	2079689	2079689 -	-
	2080482	2080150	-	-
2080973	2080948	2080493	2080483 -	-
	2081587	2081132	-	-
	2081755	2082762	+	-
2082914	2082963	2083487	2083492 +	-
2083611	2083630	2085399	2085432 +	-
	2086286	2085447	-	-
	2086395	2087339	+	-
2087450	2087450	2088037	2088037 +	-
	2088130	2088630	+	-
	2089109	2088642	-	-
	2089552	2089217	-	-
	2090747	2089746	-	-
	2091078	2093654	+	-
	2094546	2094908	+	-
	2094923	2095900	+	-

	2095919	2097262		+	-
	2097330	2098487		+	-
	2098484	2099035		+	-
	2099032	2100777		+	-
	2100794	2101771		+	-
	2104950	2101831		-	-
	2106151	2105117		-	-
2106286	2106298	2106909	2106909	+	-
	2108852	2106906		-	-
	2109663	2108947		-	-
	2110420	2109692		-	-
	2111109	2110435		-	-
	2111156	2111662		+	-
	2111704	2112507		+	-
	2112604	2113194		+	-
	2113191	2114225		+	-
2116360	2116328	2115441	2115398	-	-
2119265	2119265	2118495	2118493	-	-
2119559	2119554	2119270	2119266	-	-
2120558	2120503	2119775	2119709	-	-
2122198	2122146	2120614	2120584	-	-
	2124540	2124983		+	-
	2125551	2124991		-	-
2125693	2125698	2126591	2126879	+	-
	2127036	2126677	2126656	-	-
2128208	2128132	2127026		-	-
2128336	2128341	2131454		+	-
	2131451	2132275		+	-
	2132275	2132850		+	-
	2132847	2133980	2133980	+	-
2133981	2134064	2134492	2134492	+	-
2134819	2134819	2134496	2134370	-	-
	2134906	2135343		+	-
	2135340	2135753		+	-
	2135821	2136873		+	-
2137687	2137685	2136870	2136870	-	-
2137780	2137780	2138475	2138484	+	-
	2138643	2139593		+	-
	2139923	2139603		-	-
2147063	2147122	2147355	2147355	+	-
	2147555	2147863		+	-
2155071	2155071	2156660	2156696	+	-
2156697	2156697	2156981	2157015	+	-
2157059	2157066	2158088	2158088	+	-
2158143	2158143	2159138		+	-
	2160245	2163202		+	-
2166608	2166594	2166400	2166400	-	-
2170054	2169871	2166797	2166742	-	-
2170831	2170947	2173412	2173429	+	-
2173469	2173509	2174558	2174558	+	-
2174582	2174619	2175932	2175939	+	-
	2176932	2178158	2178235	+	-

2184945	2184942	2183515	2183503 -	-
2186543	2186499	2185024	2185010 -	-
2186632	2186632	2187246	2187266 +	-
2188748	2188751	2190139	2190201 +	-
2190202	2190202	2190501	2190534 +	-
2190576	2190638	2192407	2192417 +	-
	2193461	2192385	2192372 -	-
2194180	2194177	2193461	-	-
	2198622	2199014	2199081 +	-
2199085	2199098	2199790	2199790 +	-
2201348	2201339	2200569	2200561 -	-
2202735	2202735	2202334	-	-
2203536	2203526	2202738	2202736 -	-
	2205762	2206010	2206010 +	-
2206599	2206599	2206138	2206029 -	-
	2207328	2206747	-	-
	2207779	2207384	-	-
	2208545	2207784	-	-
2214687	2214687	2215604	2215636 +	-
2216964	2216955	2215915	2215838 -	-
	2219000	2221912	+	-
	2223214	2222015	-	-
2225600	2225603	2226385	2226385 +	-
	2227068	2226694	-	-
	2227081	2228466	+	-
	2242450	2244000	+	-
2247185	2247185	2247409	2247409 +	-
2247416	2247416	2247814	2247814 +	-
	2251739	2250594	-	-
2257869	2257852	2255582	2255565 -	-
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2261533	2261529	2261146	2261094 -	-
2263199	2263113	2262340	2262328 -	-
	2265523	2263274	2263274 -	-
2268606	2268600	2268292	2268281 -	-
	2270151	2268886	2268859 -	-
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	2284639	2282507	-	-
	2296844	2296428	-	-
	2298535	2297030	2297030 -	-
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2301300	2301293	2300655	2300643 -	-
	2301958	2301380	2301371 -	-
	2302248	2301955	-	-
2322183	2322189	2323409	2323419 +	-
2325423	2325420	2323648	2323635 -	-
2327538	2327482	2325425	2325425 -	-
2327633	2327658	2330417	2330417 +	-
2331070	2331048	2330542	2330536 -	-
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2332625	2332620	2331430	2331430 -	-
	2333453	2332839	2332814 -	-

2335051	2335050	2334589	2334578	-
2335535	2335525	2335052	2335052	-
2336938	2336938	2336126	2335700	-
	2339815	2339435	-	-
2342254	2342254	2341130	2341125	-
2342342	2342342	2343925	2345060	+
2347613	2347624	2349567	2349569	+
2350724	2350724	2352085	2352123	+
2352255	2352275	2352646	2352652	+
2353204	2353095	2352721	2352721	-
	2354640	2355908	+	-
	2355960	2357006	+	-
	2357048	2358046	+	-
	2358043	2358804	+	-
	2359069	2359617	+	-
2362354	2362368	2362640	2362701	+
2362713	2362718	2363506	2363609	+
2366070	2366067	2365009	2364968	-
	2366447	2366782	+	-
	2372900	2373211	+	-
2373433	2373433	2373705	2373705	+
2375787	2375787	2374579	2374579	-
2384892	2384824	2382500	2382303	-
2386892	2386824	2384893	2384893	-
2387047	2387052	2387492	2387508	+
2389180	2389181	2390452	2390480	+
	2395215	2394550	-	-
2398985	2398922	2395443	2395440	-
	2399763	2399230	-	-
	2400845	2399772	-	-
	2401627	2400842	-	-
	2402169	2401624	-	-
	2403421	2402171	-	-
	2404194	2403427	-	-
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	2406420	2405470	-	-
	2407269	2406502	-	-
	2407404	2408027	+	-
	2408024	2408698	+	-
	2408763	2409404	+	-
	2411806	2409407	2409407	-
	2412266	2411799	-	-
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	2414764	2415057	+	-
	2415559	2415074	-	-
	2417826	2415631	-	-
	2417960	2418439	+	-
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	2420261	2420488	+	-
	2420651	2421757	+	-
	2421764	2422066	+	-
	2424072	2424470	+	-

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	2430901	2431629		+	-
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	2434855	2435211		+	-
	2436174	2435722		-	-
	2441809	2441426		-	-
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	2443342	2442773		-	-
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	2446711	2445770		-	-
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	2468905	2469543		+	-
	2469547	2470116		+	-
	2470357	2470124		-	-
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	2480293	2479463		-	-
	2481335	2480298		-	-
	2482836	2481352		-	-
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	2489322	2487334		-	-
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	2495261	2492712		-	-

	2499579	2498086	-	-
	2501274	2499742	-	-
	2502308	2501286	-	-
	2503070	2502312	-	-
	2506331	2503203	-	-
	2507118	2506906	-	-
	2508424	2507225	-	-
	2508723	2509946	+	-
	2511405	2509972	-	-
	2512314	2511538	-	-
	2513131	2512298	-	-
	2514206	2513145	-	-
	2515400	2514279	-	-
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	2518180	2517653	-	-
	2518415	2519566	+	-
	2520445	2519573	-	-
	2522177	2523154	+	-
	2525712	2524885	-	-
	2526676	2527143	+	-
	2527419	2527676	+	-
	2527728	2529575	+	-
	2531075	2529621	-	-
	2532737	2531163	-	-
	2533014	2533910	+	-
	2534246	2534986	+	-
	2535700	2535005	-	-
2536030	2536042	2536737	2536739 +	-
	2536975	2536745	2536736 -	-
	2537385	2536972	-	-
	2537869	2537408	-	-
	2538792	2537866	-	-
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	2539921	2540802	+	-
	2540988	2541407	+	-
	2541400	2541708	+	-
	2543028	2541709	-	-
	2543462	2543992	+	-
	2543989	2544603	+	-
	2544680	2545963	+	-
	2546063	2546767	+	-
	2546781	2547530	+	-
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	2549508	2549777	+	-
	2549804	2550070	+	-
	2550131	2550403	+	-
	2550474	2550710	+	-
	2550707	2551297	+	-
	2551345	2551692	+	-
	2551713	2552792	+	-

	2552789	2553235		+	-
	2554782	2553295		-	-
	2555485	2555706		+	-
2555816	2555839	2556978	2556978	+	-
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	2558348	2558605	2558605	+	-
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	2559449	2560408		+	-
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	2561116	2561310		+	-
	2561430	2563148		+	-
	2564103	2565689		+	-
	2566645	2565659		-	-
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	2567190	2568056		+	-
	2568063	2568656		+	-
	2570714	2568771		-	-
	2571898	2570717		-	-
2572127	2572136	2572702		+	-
	2572699	2573472		+	-
	2573473	2574552	2574552	+	-
2574691	2574743	2575669	2576471	+	-
2577598	2577598	2576510	2576469	-	-
	2578287	2577703		-	-
	2578546	2580741		+	-
	2581229	2580873		-	-
	2584681	2583479		-	-
	2587197	2584678		-	-
	2587756	2587256		-	-
	2588616	2587882		-	-
	2588972	2589271		+	-
	2589565	2589864		+	-
	2593576	2594805		+	-
	2594798	2595439		+	-
	2595436	2595951		+	-
	2596340	2595948		-	-
	2596806	2596372		-	-
2597081	2597109	2598305	2598305	+	-
2598306	2598319	2599806	2599822	+	-
2599823	2599823	2601244	2601244	+	-
	2602419	2601241		-	-
	2602695	2602429		-	-
	2602950	2603768		+	-
	2604424	2603885		-	-
	2604909	2604541	2604541	-	-
	2607191	2604906		-	-
	2608860	2608324		-	-
	2608967	2609848		+	-
2610722	2610722	2610165	2610163	-	-
	2612259	2610727		-	-
	2613156	2612410		-	-
	2613758	2613156		-	-

	2614314	2613763	-	-
	2615570	2614317	-	-
	2616243	2615563	-	-
	2616788	2616255	-	-
	2616821	2617297	+	-
	2618468	2617566	-	-
	2618587	2619390	+	-
	2619402	2620376	+	-
	2620396	2621334	+	-
	2621331	2621654	+	-
	2623781	2625148	+	-
	2626173	2625220	-	-
	2626280	2627023	+	-
	2632941	2633615	+	-
	2633608	2634981	+	-
2637476	2637476	2635125	2635125	-
	2637936	2638181	+	-
	2638564	2638241	-	-
	2638986	2638570	-	-
2639740	2639585	2639184	2639184	-
	2641748	2641119	-	-
2642094	2642093	2641752	2641752	-
	2643702	2642164	-	-
	2644164	2643760	-	-
	2646609	2645845	-	-
	2649778	2646662	-	-
	2650919	2649963	-	-
	2651505	2651002	-	-
	2652562	2651636	-	-
	2652712	2653578	+	-
	2653650	2654330	+	-
	2654392	2654790	+	-
	2655128	2654799	-	-
	2657007	2655226	-	-
	2657613	2657020	-	-
	2661551	2659971	-	-
	2661789	2662124	+	-
	2676961	2664578	-	-
	2687302	2686745	-	-
	2687998	2687447	-	-
	2689679	2689107	-	-
	2690283	2689654	-	-
	2691325	2690861	-	-
	2691453	2692184	+	-
	2692181	2692495	+	-
	2694841	2694671	-	-
	2697374	2694810	-	-
	2700930	2699221	-	-
	2705135	2705563	+	-
	2707851	2707183	-	-
	2710500	2710135	2710072	-
	2715597	2715971	+	-

	2724096	2719411		-	-
	2724469	2725275		+	-
	2726105	2725311		-	-
	2726272	2728146		+	-
	2728151	2728360		+	-
	2728362	2729246		+	-
	2729243	2730679		+	-
	2730828	2731160		+	-
	2732018	2732638		+	-
	2733174	2733704		+	-
2733803	2733809	2734483		+	-
	2734480	2735721		+	-
	2736240	2738048		+	-
2739008	2739017	2739670	2739670	+	-
2739671	2739681	2741945		+	-
	2741942	2742580		+	-
	2742570	2742953	2742974	+	-
	2743384	2743238		-	-
	2748748	2748491		-	-
	2753415	2752219		-	-
	2753896	2753567		-	-
	2754939	2754004		-	-
	2755006	2755455		+	-
	2755562	2757073		+	-
2758168	2758179	2758742		+	-
	2758739	2759074	2759107	+	-
2760228	2760228	2759080	2759014	-	-
2761349	2761349	2760240	2760229	-	-
2761403	2761403	2762059	2762059	+	-
2762321	2762328	2764487	2764500	+	-
2764501	2764501	2765025	2765069	+	-
2765659	2765610	2765140	2765140	-	-
2765728	2765728	2767059	2767091	+	-
	2767448	2767122	2767092	-	-
	2767884	2767420		-	-
2771852	2771852	2772829		+	-
	2773031	2775658		+	-
2778316	2778312	2777932	2777932	-	-
2779149	2779086	2778733		-	-
2779228	2779249	2780100	2780100	+	-
2781120	2781108	2780188	2780188	-	-
2781192	2781192	2783321	2783321	+	-
	2783342	2785156		+	-
	2785285	2786001		+	-
	2786482	2786075		-	-
	2786546	2787373		+	-
	2787693	2787454		-	-
	2788708	2787866		-	-
	2794562	2788770		-	-
	2795778	2794798		-	-
	2796472	2796660		+	-
	2796750	2797295		+	-

	2797292	2797768		+	-
	2797794	2798828		+	-
	2798847	2800193		+	-
	2800278	2801489		+	-
	2801474	2802823		+	-
	2802826	2803782		+	-
	2803811	2804746		+	-
	2804746	2805636		+	-
	2805633	2806094		+	-
	2806103	2808253		+	-
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	2809531	2809145		-	-
	2812233	2810656		-	-
	2813573	2812296		-	-
	2815528	2813558		-	-
	2815950	2815525		-	-
	2816609	2815953		-	-
	2817022	2816606		-	-
	2817432	2817100		-	-
	2817538	2820558		+	-
	2820551	2821204		+	-
	2822820	2821630		-	-
	2822914	2823843		+	-
	2825419	2823911		-	-
	2826121	2825420		-	-
	2826244	2827125		+	-
	2827333	2827770		+	-
2829193	2829193	2829834	2829834	+	-
	2832641	2829915		-	-
	2832820	2833455		+	-
2834992	2834959	2834300	2834247	-	-
2835122	2835129	2835425	2835738	+	-
2836379	2836379	2835495	2835448	-	-
	2842484	2842032		-	-
	2843372	2842614		-	-
	2843767	2844720		+	-
	2846750	2844840		-	-
	2847354	2846968		-	-
	2848712	2847354		-	-
	2848818	2849714		+	-
	2852946	2853380		+	-
	2853547	2854251		+	-
	2855151	2854261		-	-
	2855283	2856233		+	-
	2856326	2856976		+	-
	2857012	2858019		+	-
	2858239	2858853		+	-
	2858863	2860272		+	-
2863464	2863471	2863977	2863977	+	-
	2865079	2864069		-	-
	2865301	2866206		+	-
	2866203	2866904		+	-

	2866901	2867125	2867125 +	-
2867205	2867225	2867731	2867731 +	-
	2867855	2868364	+	-
	2869352	2871823	+	-
	2871810	2872610	+	-
	2872603	2873316	+	-
	2873747	2873313	-	-
2874835	2874835	2873933	2873933 -	-
2878601	2878525	2877173	2877153 -	-
2880344	2880035	2878602	2878602 -	-
	2882219	2881434	-	-
	2883386	2882319	-	-
2885412	2885401	2884985	2884985 -	-
	2885478	2886434	+	-
2886941	2886938	2886558	2886422 -	-
	2887462	2888901	+	-
	2891304	2892392	+	-
2892415	2892455	2892745	2892797 +	-
2895363	2895241	2893052	2893026 -	-
2898292	2898259	2898044	2898023 -	-
	2898260	2898442	+	-
	2899542	2899090	-	-
2899757	2899742	2899539	-	-
	2900175	2899807	-	-
2902374	2902352	2901273	2901273 -	-
	2904806	2903445	-	-
	2905542	2904925	-	-
2906688	2906644	2906195	2906194 -	-
2907741	2907698	2906877	2906872 -	-
2910370	2910370	2911263	2911263 +	-
	2912508	2911393	-	-
2913590	2913589	2912717	2912688 -	-
2914961	2914932	2914408	2914369 -	-
	2915289	2915008	-	-
	2915447	2916214	+	-
2916283	2916283	2916720	2916755 +	-
2917308	2917290	2916754	2916387 -	-
2917486	2917519	2918175	2918196 +	-
2918209	2918219	2918872	+	-
	2918869	2920197	2920197 +	-
	2921106	2920252	-	-
2922624	2922624	2921617	2921518 -	-
2923285	2923218	2922682	2922625 -	-
2932981	2932898	2932158	2932158 -	-
2935804	2935770	2935504	2935488 -	-
2936269	2936209	2935805	2935805 -	-
2937269	2937266	2936283	2936270 -	-
	2939581	2938328	2938323 -	-
2941420	2941394	2940354	-	-
2942227	2941906	2941484	2941458 -	-
2944327	2944327	2944070	2944070 -	-
	2944458	2944877	+	-

	2945005	2946216		+	-
2946734	2946712	2946233	2946041	-	-
	2946802	2948040		+	-
2948101	2948133	2948609	2948609	+	-
	2948713	2948982		+	-
	2949108	2949353		+	-
	2949468	2949716		+	-
	2950062	2951798		+	-
	2953329	2951806	2951806	-	-
	2953412	2954056		+	-
	2954130	2956271		+	-
	2956607	2956326		-	-
	2956818	2957492		+	-
	2957492	2958841		+	-
	2959118	2959594		+	-
	2962972	2963370		+	-
	2963398	2963775		+	-
2965349	2965343	2964021	2964021	-	-
2966232	2966229	2965363	2965363	-	-
2967694	2967694	2966369	2966360	-	-
2968474	2968474	2967719	2967695	-	-
	2969066	2968659		-	-
2969938	2969901	2969554	2969494	-	-
	2970005	2970994		+	-
2971105	2971145	2973898	2973899	+	-
2974751	2974751	2975824	2975864	+	-
2976879	2976872	2975880	2975869	-	-
2977870	2977879	2978085	2978089	+	-
	2979585	2980184		+	-
2980294	2980304	2980876	2980910	+	-
2986011	2985963	2985220	2985205	-	-
2986141	2986152	2986427	2986458	+	-
2986494	2986508	2986999	2986999	+	-
2987224	2987236	2988240	2988982	+	-
2988963	2988764	2988387	2988213	-	-
2989821	2989793	2989065	2989065	-	-
	2991192	2989822		-	-
	2994018	2994872		+	-
	2994869	2996536	2996536	+	-
	2996685	2998121		+	-
	2998316	3000424		+	-
3001099	3000989	3000471	3000471	-	-
	3001608	3001132		-	-
3001880	3001880	3002203	3002203	+	-
3002818	3002813	3002238	3001997	-	-
	3002883	3003428		+	-
	3004109	3003432		-	-
3005035	3005033	3004251	3004249	-	-
3006072	3006072	3005083	3005074	-	-
3006169	3006169	3007329	3007460	+	-
	3008395	3007628		-	-
3010971	3010958	3008496	3008463	-	-

	3011456	3011127	-	-
3011924	3011924	3012700	+	-
	3012678	3013070	3013128 +	-
3014531	3014517	3013087	3012682 -	-
	3015056	3014649	-	-
	3016054	3015140	-	-
3016137	3016165	3017154	3017166 +	-
	3018837	3017206	-	-
	3019973	3018885	-	-
3027721	3027624	3026893	3026893 -	-
3029201	3029201	3028716	-	-
3031947	3031947	3033071	3034097 +	-
3039768	3039694	3039152	3039151 -	-
3041651	3041680	3041979	3041979 +	-
3041980	3041987	3042301	3042301 +	-
3043015	3043020	3043682	3043692 +	-
3044416	3044429	3045703	3045734 +	-
	3048538	3049224	+	-
	3049224	3050204	3050204 +	-
3050205	3050247	3050798	3051006 +	-
3051940	3051914	3050970	3050869 -	-
3052804	3052804	3051962	3051942 -	-
3058011	3057924	3053017	3052992 -	-
	3057982	3058101	+	-
3058244	3058244	3058900	+	-
3063823	3063796	3063509	3063509 -	-
3065227	3065228	3066157	3066170 +	-
	3070091	3071275	+	-
3073375	3073360	3071288	3071120 -	-
3074099	3074089	3073409	3073386 -	-
	3074342	3074100	3074100 -	-
3075684	3075684	3074335	-	-
3076699	3076568	3075708	3075685 -	-
3077734	3077735	3077971	3077973 +	-
3077974	3077974	3078333	+	-
	3078333	3079208	+	-
	3079205	3080233	3080258 +	-
3080259	3080259	3081146	3081163 +	-
3081176	3081177	3081782	3081824 +	-
3081874	3081889	3082314	3082314 +	-
	3086222	3085887	-	-
3086233	3086259	3087671	3087680 +	-
3087681	3087681	3088577	3088577 +	-
	3094726	3094487	-	-
	3094944	3094732	-	-
	3098985	3096742	-	-
3099027	3100632	3100901	3101133 +	-
3101452	3101448	3100888	3100888 -	-
	3105741	3103462	-	-
3107269	3107233	3106691	3106691 -	-
3108225	3108205	3107360	3107360 -	-
3108369	3108369	3108584	+	-

3110213	3110213	3109389	3109147 -	-
	3110293	3110727	+	-
3110815	3110864	3111358	3111358 +	-
	3111876	3112361	+	-
3112474	3112480	3113634	+	-
3115084	3115078	3114740	3114740 -	-
3116742	3116721	3115204	3115204 -	-
	3116868	3117764	+	-
	3117801	3118253	+	-
	3118492	3120363	+	-
3121895	3121908	3124076	3124076 +	-
3126217	3126217	3125363	3125360 -	-
3126594	3126584	3126282	3126218 -	-
3126738	3126793	3126954	3126967 +	-
3127624	3127624	3126998	3126990 -	-
3129207	3129197	3127632	3127625 -	-
3129360	3129360	3130208	3130247 +	-
3131144	3131144	3131623	+	-
	3131623	3132036	3132100 +	-
3133939	3133929	3132163	3132085 -	-
3134541	3134539	3133940	3133940 -	-
	3134977	3135393	3135394 +	-
3142074	3142074	3141220	3141098 -	-
	3145277	3142110	3142089 -	-
	3146110	3145274	-	-
	3146988	3146107	-	-
3148325	3148325	3146985	-	-
3150010	3149934	3148330	3148326 -	-
3153258	3153258	3150178	3150178 -	-
3154387	3154373	3153336	3153273 -	-
	3154797	3154522	3154425 -	-
	3159812	3159012	-	-
	3159891	3161021	+	-
3161454	3161442	3161008	3160996 -	-
3162367	3162360	3161554	3161525 -	-
3163532	3163529	3162375	3162375 -	-
	3165835	3166023	+	-
	3171685	3172029	3172029 +	-
3178607	3178607	3178723	3178778 +	-
3179201	3179294	3180499	3180541 +	-
	3189280	3189017	3189006 -	-
3192145	3192145	3191546	-	-
3193553	3193478	3192150	3192150 -	-
3197201	3197120	3196110	3196110 -	-
3196972	3197106	3197390	3197970 +	-
3198027	3198015	3197452	3197446 -	-
	3200084	3201331	3201412 +	-
3203191	3203110	3201884	3201881 -	-
	3204984	3205829	3205841 +	-
3206623	3206623	3205919	3205905 -	-
	3207330	3206635	3206624 -	-
3209573	3209413	3208070	3208070 -	-

3210304	3210308	3211324	3211336 +	-
	3213518	3211392	3211372 -	-
3214438	3214438	3213515	-	-
3217783	3217796	3218764	3218767 +	-
3219607	3219607	3220239	3220239 +	-
3221276	3221276	3220314	3220304 -	-
3222219	3222208	3221279	3221277 -	-
3227885	3227885	3226401	-	-
3227909	3227909	3228979	3228979 +	-
3231905	3231902	3231006	3230995 -	-
3233885	3233873	3231987	3231987 -	-
3237537	3237463	3235169	3235158 -	-
3238052	3238041	3237868	3237820 -	-
	3238182	3238685	+	-
	3239453	3238692	-	-
3239586	3239586	3240428	3240493 +	-
3241553	3241536	3240511	3240432 -	-
3242914	3242953	3243429	3243429 +	-
3243494	3243494	3245284	3245285 +	-
3245766	3245780	3246424	3246424 +	-
3248954	3248780	3248577	3246611 -	-
3249524	3249518	3248955	3248955 -	-
	3250197	3249646	-	-
	3250658	3251275	+	-
	3251272	3251823	+	-
	3251816	3252187	+	-
	3252287	3252613	+	-
	3252888	3253169	+	-
	3255094	3254837	-	-
3255483	3255488	3255769	3255769 +	-
3255779	3255782	3256015	3256015 +	-
3256106	3256152	3256679	3256679 +	-
3256691	3256693	3257025	3257042 +	-
3257251	3257221	3257048	3257042 -	-
3258120	3258120	3258812	3258881 +	-
3259146	3259136	3258825	3258794 -	-
	3259462	3259983	+	-
	3260838	3260497	3260384 -	-
3261066	3261035	3260835	-	-
	3261654	3261298	3261270 -	-
	3269377	3269673	+	-
	3269673	3269936	+	-
	3269947	3271506	+	-
	3271941	3271531	-	-
3301472	3301427	3300492	3300492 -	-
3301622	3301622	3303499	3303499 +	-
3303500	3303520	3304665	+	-
	3304658	3305515	3305515 +	-
	3309583	3308903	3308902 -	-
	3310895	3311782	+	-
3312997	3312964	3311855	3311855 -	-
	3313710	3313009	-	-

3319100	3319100	3313713	3313713 -	-
	3321204	3319186	3319184 -	-
3321879	3321875	3321201	-	-
3323862	3323862	3323500	3323492 -	-
3328195	3328182	3327166	3327077 -	-
3330346	3330349	3330999	+	-
3332321	3332310	3331963	3331963 -	-
3334067	3334067	3335572	3335610 +	-
	3337116	3336292	3336292 -	-
3338528	3338474	3337113	-	-
	3347254	3338966	3338966 -	-
	3347640	3347245	-	-
	3348101	3347640	-	-
	3348451	3348098	-	-
	3350613	3348448	-	-
	3351525	3351181	3351111 -	-
3352154	3351983	3351525	-	-
	3353017	3353439	3353441 +	-
3353442	3353455	3353622	3353622 +	-
3355240	3355234	3354380	3354358 -	-
3355372	3355448	3358237	3358237 +	-
	3358625	3361603	+	-
	3361698	3363725	+	-
3363826	3363895	3366000	3366000 +	-
3366202	3366216	3368222	3368222 +	-
	3368346	3368840	+	-
	3368917	3370500	+	-
3371225	3371222	3370551	3370551 -	-
	3371591	3371316	-	-
3372571	3372571	3371651	3371640 -	-
3375501	3375492	3374275	3374257 -	-
3376192	3376192	3376752	3376824 +	-
3376878	3376884	3377657	3377657 +	-
3379208	3379208	3377874	3377859 -	-
	3381066	3381605	3381605 +	-
3385059	3385047	3384676	3384676 -	-
3386549	3386502	3385135	3385132 -	-
3386536	3386571	3387158	3387616 +	-
3392562	3392561	3388704	3388664 -	-
3394810	3394810	3395547	3395547 +	-
	3395766	3396416	3396416 +	-
3396575	3396614	3399409	3399409 +	-
3402108	3402067	3401048	3401048 -	-
3405515	3405415	3404915	3404903 -	-
3408979	3408975	3408376	3408366 -	-
3410221	3410339	3411964	+	-
	3411961	3413586	3413601 +	-
	3413654	3414106	+	-
3414149	3414154	3414870	3414870 +	-
	3416195	3414879	-	-
3416272	3416272	3416955	+	-
	3416952	3417737	3417737 +	-

3417829	3417832	3419772	3419772 +	-
	3419789	3420859	+	-
	3420856	3421260	+	-
3421655	3421679	3422122	3422122 +	-
3424334	3424370	3424975	3424975 +	-
3425821	3425812	3425465	3425413 -	-
	3430736	3430119	3430119 -	-
3431558	3431558	3430956	3430759 -	-
3431788	3431788	3432939	3433228 +	-
3434883	3435108	3435359	3435359 +	-
3435360	3435371	3435553	3435566 +	-
3436483	3436469	3435603	3435588 -	-
	3437029	3436496	-	-
	3437604	3437026	-	-
	3437731	3437910	+	-
3437946	3437946	3438539	3438559 +	-
3439354	3439351	3439085	3439070 -	-
3440087	3440079	3439522	3439427 -	-
3440133	3440142	3440642	3440642 +	-
3441389	3441497	3443089	3443206 +	-
	3444169	3443093	-	-
3448550	3448619	3449794	3449889 +	-
3449891	3449919	3450260	3450263 +	-
3450405	3450417	3450827	3450827 +	-
	3452577	3450940	-	-
	3452691	3453689	+	-
	3455290	3457749	+	-
	3457739	3458380	+	-
3458669	3458651	3458382	3458381 -	-
3460100	3460100	3458832	3458832 -	-
3463753	3463736	3463041	3463030 -	-
3464337	3464337	3463852	3463852 -	-
3465824	3465834	3466562	3466578 +	-
3469818	3469766	3469383	-	-
3474175	3474175	3472643	3472643 -	-
3475973	3475978	3478041	3478079 +	-
	3478643	3479506	+	-
3480454	3480545	3481003	3481003 +	-
	3481983	3481132	-	-
	3484277	3484504	3484504 +	-
3485879	3485872	3484622	3484622 -	-
3485950	3486031	3486420	3486434 +	-
	3487793	3486507	3486507 -	-
3488498	3488493	3487780	-	-
3488625	3488625	3490328	3490356 +	-
	3490560	3491207	+	-
	3491204	3492853	3492869 +	-
3493439	3493451	3495415	3495452 +	-
3495929	3495928	3495536	3495517 -	-
	3496890	3495997	-	-
	3502091	3501681	-	-
3503604	3503597	3502230	3502230 -	-

3504402	3504402	3503680	3503680	-	-
	3506630	3507118		+	-
	3507831	3507127		-	-
3507950	3507962	3508249	3508249	+	-
3510459	3510459	3508336	3508336	-	-
	3510615	3511655		+	-
	3511660	3512337		+	-
3513013	3514354	3515193	3517448	+	-
3515403	3515403	3515218	3515110	-	-
	3517617	3518612		+	-
3520225	3520320	3520802	3520831	+	-
3528861	3528800	3523956	3523954	-	-
3531897	3531888	3530698	3530607	-	-
3532022	3532022	3531900	3531898	-	-
3532479	3532470	3532213	3532176	-	-
3539720	3539637	3539185	3539185	-	-
3540376	3540423	3541292	3541292	+	-
3541584	3541504	3541301	3541240	-	-
3543336	3543375	3543614	3543636	+	-
	3544815	3546224		+	-
3550289	3550234	3546728	3546728	-	-
	3553853	3550647		-	-
	3554060	3554704		+	-
	3554701	3555273	3555273	+	-
	3555277	3555849		+	-
	3556199	3555969		-	-
3557739	3557885	3558880	3558884	+	-
	3560058	3558991		-	-
	3562663	3563547		+	-
3565262	3565379	3566017	3566054	+	-
	3569035	3568625	3568624	-	-
3571889	3571928	3572776	3572776	+	-
3573128	3573160	3576036	3576036	+	-
3576777	3576777	3576175	3576175	-	-
	3576931	3577848		+	-
	3580398	3580865		+	-
	3581701	3581351		-	-
	3583106	3581778		-	-
3583377	3583391	3584791	3584791	+	-
	3585767	3586660		+	-
3587419	3587279	3586785	3586785	-	-
	3590116	3589814		-	-
	3590664	3590335	3590335	-	-
3591513	3591500	3590661		-	-
	3596180	3595716	3595716	-	-
	3597508	3596177		-	-
	3608911	3609795	3609798	+	-
3611088	3611088	3610375	3610372	-	-
	3613129	3613530		+	-
	3614288	3613752	3613686	-	-
3616774	3616820	3618919	3618946	+	-
3620484	3620481	3618916	3618906	-	-

3622794	3622799	3623323	3623359	+	-
3627522	3627568	3628116	3628136	+	-
3634039	3634039	3634551		+	-
3634937	3634935	3634630	3634619	-	-
	3635085	3635852		+	-
	3635945	3636367		+	-
3638262	3638262	3637399	3637399	-	-
3638776	3638776	3638312	3638263	-	-
3639316	3639316	3638780	3638777	-	-
	3640064	3639636	3639607	-	-
3640314	3640314	3640054		-	-
3640423	3640442	3640906	3641059	+	-
	3652655	3653020		+	-
	3653013	3653288		+	-
	3653925	3654449		+	-
	3656926	3658773		+	-
	3658775	3659425		+	-
	3662536	3662652		+	-
	3670208	3670414		+	-
	3670738	3670980		+	-
	3670980	3671288		+	-
	3671288	3671533		+	-
	3671642	3674332		+	-
	3674517	3674843		+	-
	3675689	3676885		+	-
	3677206	3678162		+	-
3679045	3678967	3678302	3678302	-	-
3679762	3679747	3679046	3679046	-	-
3680772	3680772	3679954	3679954	-	-
3681317	3681294	3680776	3680773	-	-
	3685683	3685252	3685252	-	-
3690801	3690784	3690053	3690053	-	-
3691608	3691578	3690961	3690929	-	-
3692190	3692190	3691669	3691656	-	-
3692561	3692545	3692222	3692219	-	-
	3694472	3695206		+	-
3695947	3695947	3695306	3695300	-	-
3697220	3697215	3696001	3695988	-	-
	3698215	3697301		-	-
3701234	3701199	3699334	3699334	-	-
	3701534	3703921		+	-
3705555	3705555	3707291	3707330	+	-
	3709128	3709865		+	-
	3709862	3711151		+	-
	3711292	3712092		+	-
3712682	3712647	3712132	3712132	-	-
	3716359	3715538		-	-
	3716531	3717241		+	-
3719022	3719017	3717407	3717322	-	-
	3722372	3721479	3721413	-	-
	3722855	3722373		-	-
	3723071	3725506		+	-

3726531	3726531	3728324	+	-
3730167	3730142	3729756	3729756 -	-
3730674	3730674	3730168	3730168 -	-
	3731465	3730695	3730675 -	-
	3733655	3734857	+	-
3746962	3746969	3747832	3747843 +	-
	3749015	3748629	-	-
3749667	3749745	3750008	3750013 +	-
3750014	3750041	3750904	3752126 +	-
3752584	3752584	3751256	3750857 -	-
3753326	3753266	3752589	3752585 -	-
3753900	3753889	3753428	3753428 -	-
	3754475	3754005	-	-
3755063	3755056	3754571	3754571 -	-
	3758023	3756779	3756779 -	-
3760303	3759918	3758020	-	-
3763047	3762968	3761115	3761104 -	-
3765051	3765051	3766898	3766916 +	-
3767539	3767536	3767201	3767193 -	-
3767702	3767715	3767996	3768008 +	-
3768072	3768072	3768788	3768788 +	-
3769493	3769493	3770914	3770947 +	-
	3772426	3770975	-	-
	3773423	3772437	-	-
3775933	3775932	3774424	-	-
3776550	3776550	3776113	3776113 -	-
3783268	3783268	3781205	3781205 -	-
3783760	3783760	3783341	3783340 -	-
	3783794	3784330	+	-
3786700	3786801	3787400	3787400 +	-
3788764	3788635	3787493	3787493 -	-
	3795512	3794136	3794136 -	-
3798208	3798175	3795509	-	-
3799481	3799498	3800127	3800157 +	-
3800687	3800687	3801505	3801516 +	-
3801517	3801517	3802317	3802358 +	-
	3802934	3802371	3800758 -	-
	3804172	3802931	-	-
	3804649	3805206	+	-
3805231	3805240	3807192	3807192 +	-
3807847	3807585	3807280	3807280 -	-
3811720	3811714	3810395	3810391 -	-
	3813487	3811772	-	-
	3815322	3813484	-	-
	3816769	3816320	-	-
3817695	3817695	3816766	-	-
3818747	3818729	3817704	3817704 -	-
3826866	3826889	3827533	3827533 +	-
	3828879	3828133	-	-
	3840344	3839280	-	-
3846378	3846358	3845972	3845965 -	-
3861500	3861487	3860639	3860607 -	-

	3862346	3862735		+	-
	3862732	3863328	3863352	+	-
3863353	3863387	3864613	3864630	+	-
3864792	3864815	3867094		+	-
	3867091	3867465	3867465	+	-
	3870728	3869400	3869393	-	-
3871294	3871276	3870728		-	-
3871430	3871430	3871651		+	-
	3871648	3871944	3871944	+	-
3872366	3872368	3872961		+	-
	3872958	3873437	3873454	+	-
3874108	3874129	3874575	3874586	+	-
3878337	3878313	3877885	3877885	-	-
3878458	3878458	3879060	3880374	+	-
3880495	3880495	3881367	3881409	+	-
3882419	3882414	3881470	3881384	-	-
3883571	3883562	3882570	3882508	-	-
3884476	3884474	3883656	3883656	-	-
3884580	3884583	3885266	3885356	+	-
3892238	3892183	3886949	3886837	-	-
3892867	3892858	3892367	3892349	-	-
3893532	3893532	3892870	3892870	-	-
3893638	3893669	3895615	3895643	+	-
	3896371	3895793	3895705	-	-
3900126	3900139	3900528	3901042	+	-
3901105	3901104	3900601	3900495	-	-
	3901460	3903487		+	-
	3904288	3903566		-	-
	3904710	3904285		-	-
	3905448	3904720		-	-
	3905902	3905435		-	-
3906623	3906628	3906885	3906932	+	-
	3909919	3907001		-	-
	3911096	3910176		-	-
	3912275	3911802		-	-
	3912766	3912275		-	-
3913491	3913643	3914764	3914764	+	-
3915131	3915033	3914824	3914814	-	-
3918059	3918052	3915203	3915203	-	-
3919003	3919001	3918102	3918064	-	-
	3922372	3921701		-	-
	3928568	3926850		-	-
	3928581	3929261		+	-
	3929258	3930232		+	-
	3939827	3939054		-	-
	3939944	3940849		+	-
3945634	3945634	3946314	3946420	+	-
	3949734	3948574		-	-
	3953751	3952420	3951634	-	-
3954860	3954847	3953732		-	-
3955076	3955060	3954863	3954861	-	-
	3955379	3955098		-	-

3955335	3955479	3958823	3958828 +	-
3958829	3958829	3959563	3959775 +	-
	3965529	3968171	+	-
3969459	3969459	3968809	3968809 -	-
	3970543	3969488	-	-
	3971931	3970540	-	-
3972782	3972822	3973997	3973997 +	-
	3976395	3978692	+	-
3980464	3980464	3979211	3979211 -	-
3981791	3981791	3983089	3983089 +	-
3983090	3983093	3983710	3983710 +	-
3983715	3983715	3984434	3984480 +	-
3985314	3985314	3984535	3984486 -	-
3985344	3985344	3986300	3986304 +	-
3986967	3986959	3986420	3986420 -	-
3991373	3991286	3987897	3987870 -	-
	3991542	3992951	+	-
	3992951	3994213	+	-
	3994234	3994866	+	-
3994952	3994962	3995903	3995903 +	-
3995904	3995981	3996319	3996319 +	-
	3997905	3996493	-	-
	3998984	3997902	-	-
	4000535	3999006	-	-
	4001606	4000689	-	-
	4001748	4002194	+	-
	4002218	4002670	+	-
	4004155	4002710	-	-
4005166	4005146	4004316	4004316 -	-
4005566	4005566	4005210	4005205 -	-
4007024	4007018	4006743	4006742 -	-
	4007994	4007089	-	-
	4008079	4009227	+	-
4010026	4010017	4009340	4009340 -	-
	4010132	4010548	+	-
	4011199	4010561	-	-
4011287	4011287	4011949	4012014 +	-
	4012949	4012065	-	-
4013050	4013057	4014115	4014115 +	-
4015620	4015602	4014238	4014238 -	-
4015733	4015755	4016459	+	-
	4016456	4017280	+	-
	4017998	4018969	+	-
4019768	4019802	4020602	4020602 +	-
4022306	4022354	4023091	4023102 +	-
	4024048	4023203	-	-
	4024127	4024627	+	-
	4024705	4025256	+	-
	4030574	4027713	-	-
4031884	4031884	4033869	4033879 +	-
4035811	4035799	4035365	4035317 -	-
	4036184	4035849	-	-

4037241	4037224	4036181	-	-
	4037633	4038067	+	-
	4041385	4038440	-	-
	4042782	4041724	-	-
4044972	4044967	4043939	-	-
4046080	4046075	4044975	4044975 -	-
4047419	4047371	4046082	4046081 -	-
4047721	4047747	4048766	4048800 +	-
4048910	4048910	4051573	4051573 +	-
	4054552	4054160	4054160 -	-
4055733	4055733	4054549	-	-
4055787	4055793	4056530	4056530 +	-
4057124	4057081	4056596	4056596 -	-
	4057171	4057914	+	-
4057959	4057959	4058282	4058286 +	-
4059869	4059869	4058358	4058350 -	-
	4060314	4059874	4059870 -	-
4062170	4062128	4060311	-	-
	4062704	4062321	-	-
4062870	4062875	4063918	4063963 +	-
4065129	4065119	4064214	4064146 -	-
	4066383	4065130	-	-
4066982	4066982	4066386	4066386 -	-
4069475	4069387	4067210	4067210 -	-
4071640	4071640	4071362	-	-
4071961	4071993	4073051	4073079 +	-
4085566	4085594	4086532	4086653 +	-
	4087340	4086720	4086712 -	-
4088081	4088071	4087340	-	-
4090154	4090013	4088199	4088150 -	-
	4091804	4092064	+	-
4092125	4092140	4092475	4092475 +	-
4092519	4092543	4092965	4092970 +	-
4099851	4099851	4100843	4100843 +	-
	4104641	4103967	4103951 -	-
4105754	4105754	4105482	-	-
4106267	4106265	4105837	4105824 -	-
4108574	4108574	4109767	4109767 +	-
4111988	4111982	4109886	4109886 -	-
	4112375	4112052	4112052 -	-
4112487	4112504	4113106	4113120 +	-
	4113892	4113203	4113203 -	-
4114913	4114896	4113889	-	-
4116002	4116002	4115106	4115106 -	-
4116146	4116158	4116640	4116655 +	-
4116733	4116742	4117308	4117313 +	-
4117314	4117314	4118108	4118108 +	-
4120417	4120421	4120825	4121673 +	-
4122080	4122076	4120964	4120927 -	-
4122181	4122202	4122717	4122717 +	-
4122793	4122817	4123236	4123921 +	-
4123977	4123735	4123304	4123262 -	-

	4126223	4127500		+	-
	4127529	4128254		+	-
	4128265	4129566		+	-
	4129588	4130802		+	-
	4130819	4131190		+	-
4131253	4131312	4132658		+	-
	4132655	4134007	4134060	+	-
4134534	4134534	4134064	4134064	-	-
4136042	4136050	4136400	4136437	+	-
4138727	4138655	4136442	4136428	-	-
4145997	4145944	4145579	4145548	-	-
	4146386	4146000		-	-
	4146402	4147220		+	-
	4152485	4151970		-	-
4152634	4152672	4153307	4153328	+	-
4157595	4157595	4156801	4156753	-	-
4158592	4158592	4157621	4157596	-	-
4158669	4158674	4159276	4159323	+	-
4159378	4159383	4160159	4160159	+	-
4162502	4162492	4161761	4161761	-	-
4163546	4163546	4162503	4162503	-	-
4166341	4166179	4164260	4164242	-	-
4169166	4169176	4169562	4169577	+	-
4172172	4172172	4169641	4169618	-	-
4173290	4173277	4172384	4172384	-	-
	4174290	4173376		-	-
	4174337	4174801		+	-
	4176290	4174806		-	-
	4176485	4176790		+	-
	4178274	4176802		-	-
	4178399	4179028		+	-
	4179385	4179044		-	-
	4180204	4179791		-	-
4180371	4180379	4183729	4183729	+	-
	4184477	4183809		-	-
	4185772	4184558		-	-
	4187108	4185783		-	-
	4188789	4187146		-	-
	4189652	4188786		-	-
	4192090	4189808		-	-
	4192145	4192744		+	-
	4193288	4192836		-	-
4196256	4195958	4195386	4194760	-	-
4196854	4196818	4196411	4196411	-	-
	4197405	4197797		+	-
	4198468	4198713		+	-
	4198805	4199056		+	-
	4199297	4199794		+	-
	4202951	4204396		+	-
4208037	4208017	4207685	4206912	-	-
	4211134	4210727		-	-
	4211606	4211241		-	-

	4220256	4217995	-	-
	4221936	4220260	-	-
	4226168	4225305	-	-
	4226464	4226201	-	-
4230097	4230061	4228847	4228797 -	-
	4230665	4230354	-	-
	4235597	4236097	+	-
	4236094	4237632	+	-
4238807	4238785	4237730	4237730 -	-
4240956	4240880	4239624	4239612 -	-
4242742	4242742	4241033	4240968 -	-
4245770	4245785	4246915	4246915 +	-
4248729	4248729	4249493	4249498 +	-
4249512	4249543	4250472	4250472 +	-
4253311	4253368	4253877	4253916 +	-
4253917	4253921	4254610	4254620 +	-
4254639	4254639	4255358	+	-
	4256341	4256553	+	-
4260092	4260054	4258690	4258635 -	-
4260833	4260830	4260261	4260261 -	-
4261840	4261839	4260835	4260834 -	-
4265156	4265145	4264525	4264510 -	-
4266060	4266058	4265279	4265157 -	-
	4268010	4267555	-	-
	4268864	4268589	-	-
4269196	4269196	4269813	4269921 +	-
	4271701	4271444	-	-
	4272130	4271792	-	-
	4272919	4272179	-	-
	4273416	4272916	-	-
	4274787	4273489	-	-
	4275527	4274820	-	-
	4275634	4276563	+	-
	4276631	4277794	+	-
4278543	4278543	4277887	4277880 -	-
	4280961	4282751	+	-
	4283155	4285536	+	-
	4285533	4286096	+	-
	4286722	4289244	+	-
	4291838	4289337	-	-
	4293354	4292983	-	-
	4293437	4294153	+	-
	4295087	4294188	-	-
4295903	4295903	4295337	-	-
	4295904	4296830	+	-
4297434	4297396	4296836	4296788 -	-
	4298042	4297446	-	-
	4298169	4298702	+	-
	4299586	4298759	-	-
	4299751	4300479	+	-
	4301200	4301625	4301636 +	-
	4304077	4303667	4303667 -	-

4305028	4305009	4304038	-	-
4306137	4306137	4306904	4307018 +	-
	4309043	4308414	-	-
	4309494	4309057	-	-
	4310759	4309491	-	-
4312582	4312570	4310819	4310813 -	-
4313235	4313222	4312605	4312583 -	-
4317118	4316770	4316438	4316438 -	-
4320026	4320019	4319177	-	-
4321770	4323561	4323929	4323929 +	-
4326339	4325028	4324597	4324414 -	-
	4326524	4328098	+	-
4329030	4329028	4328138	4328135 -	-
	4330839	4329109	-	-
	4330995	4331741	+	-
	4332175	4331816	-	-
	4332645	4332229	-	-
	4333186	4332638	-	-
	4334144	4333179	-	-
4338136	4338112	4337600	4337600 -	-
4338458	4338451	4338158	4338156 -	-
4339555	4339555	4338737	4338716 -	-
4341410	4341410	4340079	4340073 -	-
	4349462	4351639	+	-
	4351782	4352576	+	-
4354742	4354786	4355073	4355088 +	-
4355093	4355108	4355386	4355386 +	-
4355387	4355431	4355856	4355871 +	-
4357288	4357266	4356379	4356330 -	-
4358852	4358852	4358460	4358400 -	-
4359352	4359348	4358884	4358853 -	-
4360105	4360096	4359353	4359353 -	-
	4360276	4360893	4360893 +	-
4361035	4361040	4362827	4362827 +	-
4362828	4362829	4365069	4365972 +	-
4365907	4365893	4365684	4365684 -	-
4368287	4368293	4368937	4368947 +	-
4371163	4371206	4371967	4371980 +	-
4372754	4372754	4372080	4372064 -	-
4376129	4376079	4375300	4375300 -	-
4378984	4378851	4377922	4377922 -	-
4379588	4379588	4379106	4379051 -	-
4380665	4380665	4380336	4380323 -	-
4381849	4381883	4382368	4382378 +	-
	4390387	4389731	-	-
	4390513	4391055	+	-
4393708	4393636	4392524	4392490 -	-
4393749	4393766	4394260	4394260 +	-
	4395480	4394341	4394341 -	-
4396328	4396313	4395708	4395704 -	-
4397869	4397832	4396333	4396329 -	-
4398896	4398889	4398014	4397870 -	-

4401369	4401369	4401722		+	-
	4401719	4403107	4403112	+	-
	4404629	4403922		-	-
4405276	4405276	4404629		-	-
4405358	4405371	4406909	4408072	+	-
4408156	4408156	4407230	4407230	-	-
	4408320	4410011		+	-
4415653	4415625	4415377	4415358	-	-
	4416316	4417524		+	-
4417620	4417650	4418129	4418129	+	-
	4418647	4418213		-	-
	4418793	4419083		+	-
	4419083	4419742		+	-
	4419739	4421058		+	-
4421483	4421468	4421148	4421135	-	-
	4426866	4426075		-	-
	4428352	4426853		-	-
4428223	4428407	4429042	4429042	+	-
4429630	4429662	4429913	4429949	+	-
4430009	4430040	4430474	4430703	+	-
4430824	4430769	4430467	4430449	-	-
	4435344	4434742		-	-
	4435975	4436331		+	-
	4436380	4436910		+	-
	4441517	4441224		-	-
	4444109	4441791		-	-
4445373	4445368	4444535	4444535	-	-
	4448058	4447615		-	-
	4448592	4448164		-	-
	4448824	4450590		+	-
	4450590	4451168		+	-
	4452108	4451428		-	-
4456080	4456156	4457571	4457626	+	-
	4457645	4457905		+	-
	4457905	4458504		+	-
	4458514	4460028		+	-
	4461697	4460396		-	-
	4464099	4461697		-	-
4464766	4464718	4464317	4464317	-	-
	4464905	4465732		+	-
	4465746	4466825		+	-
4466875	4466880	4467551	4467551	+	-
	4468908	4467553		-	-
	4470779	4468956		-	-
4471391	4471380	4470868	4470862	-	-
	4471481	4472089		+	-
4474817	4474775	4473384	4472652	-	-
	4485811	4481114		-	-
	4487486	4486131		-	-
	4490527	4487552		-	-
	4494021	4490662		-	-
	4495490	4496428		+	-

	4499894	4501672	+	-
	4502195	4501725	-	-
4502744	4502743	4502192	-	-
	4503497	4502802	-	-
	4504931	4503591	-	-
4505933	4505928	4505365	4505116 -	-
4510035	4510043	4510927	4510927 +	-
	4512003	4511371	4511325 -	-
4512962	4512962	4512000	-	-
4513109	4513138	4513614	4513716 +	-
4524302	4524314	4525135	4525135 +	-
4525272	4525277	4525807	4525807 +	-
4525852	4525931	4526620	+	-
	4526617	4527609	+	-
	4527599	4529215	+	-
	4529212	4530396	+	-
	4530393	4531379	+	-
	4531376	4532674	4532773 +	-
	4534739	4534080	4534080 -	-
4535924	4535917	4534739	-	-
4536510	4536497	4535925	4535925 -	-
	4536907	4536611	-	-
4541473	4541473	4541120	4541117 -	-
4542367	4542371	4543234	4543305 +	-
4543649	4543624	4543355	4543279 -	-
4545622	4545583	4544666	4544666 -	-
4545966	4545955	4545707	4545707 -	-
4546141	4546142	4546600	4546618 +	-
4548505	4548505	4546706	4546698 -	-
4549090	4549088	4548573	4548563 -	-
4551368	4551339	4549114	4549114 -	-
4552293	4552335	4552925	4552977 +	-
4553095	4553127	4554140	4554220 +	-
	4554478	4554224	-	-
	4554626	4555354	+	-
	4555454	4556164	+	-
4557363	4557363	4556188	4556013 -	-
	4558115	4557369	4557364 -	-
	4559608	4558112	-	-
	4559732	4560463	+	-
4564141	4564114	4563365	4563338 -	-
4564187	4564220	4565167	+	-
	4565164	4565955	4565963 +	-
4566217	4566299	4567072	4567072 +	-
	4568195	4569079	4569083 +	-
4572666	4572705	4573079	4573079 +	-
4574666	4574666	4573809	4573805 -	-
4574834	4574836	4575792	4575799 +	-
4576781	4576870	4577994	4577998 +	-
	4580272	4579367	4579358 -	-
	4580717	4580262	-	-
4580891	4580901	4583021	4583033 +	-

4583250	4583266	4584075	4584141 +	-
4585032	4585032	4584238	4584212 -	-
4585049	4585084	4585464	4585535 +	-
4588273	4588273	4585547	4585153 -	-
	4589813	4590148	+	-
	4595448	4592110	4592110 -	-
4596311	4596287	4595862	4595854 -	-
	4598785	4598330	4598316 -	-
	4599966	4598782	-	-
	4600520	4599963	-	-
4601773	4601758	4600508	-	-
	4604165	4601811	4601809 -	-
4604760	4604760	4604158	-	-
	4605209	4604784	4604761 -	-
4606734	4606731	4605202	-	-
4607683	4607683	4606742	4606742 -	-
	4608455	4607685	4607685 -	-
	4610130	4608445	-	-
4610696	4610674	4610123	-	-
	4611229	4610972	4610972 -	-
	4612013	4611216	-	-
4612767	4612749	4612006	-	-
	4615809	4615594	4615594 -	-
	4616459	4615806	-	-
	4616826	4616497	-	-
	4617349	4616897	-	-
4617515	4617520	4619877	+	-
	4619874	4620293	4620323 +	-
	4620324	4620884	+	-
	4620920	4621885	+	-
4621886	4621923	4623536	4623555 +	-
4624534	4624583	4626103	4626118 +	-
4626660	4626627	4626148	4626123 -	-
4629863	4629869	4630153	4630234 +	-
4630794	4630769	4630323	4630282 -	-
4631630	4631625	4631071	4630958 -	-
	4632058	4631732	-	-
4636633	4636633	4635212	4635206 -	-
	4639622	4640836	+	-
	4642399	4641506	-	-
	4642508	4642897	+	-
4643139	4643139	4643471	4643471 +	-
4651071	4651071	4649299	4649282 -	-
	4651632	4651285	4651255 -	-
4653410	4653410	4652445	4652445 -	-
4654236	4654214	4653456	4653451 -	-
4657366	4657512	4657763	4657784 +	-
	4662070	4660406	-	-
	4663709	4662297	-	-
4666021	4666024	4666689	4666700 +	-
	4667969	4667394	-	-
	4671746	4668288	-	-

4674135	4674127	4671980	4671916 -	-
4676413	4676307	4675900	4675818 -	-
4675944	4676269	4677393	+	-
	4677390	4678637	4678683 +	-
	4682506	4678649	4678501 -	-
4684347	4684329	4682503	-	-
4687642	4687671	4689506	+	-
	4689478	4690224	4690224 +	-
4690254	4690274	4691185	4691185 +	-
4693699	4693681	4692788	4692721 -	-
4694833	4694833	4695660	4695660 +	-
4695951	4695951	4698056	4698056 +	-
4709854	4709854	4709624	4709276 -	-
4711656	4711626	4711081	4711064 -	-
4712468	4712468	4711698	4711698 -	-
4713387	4713385	4712495	4712469 -	-
4714698	4714694	4713447	4713392 -	-
	4715753	4714779	-	-
	4717057	4715750	-	-
4717147	4717170	4718450	4718532 +	-
4718882	4718882	4718454	4718454 -	-
4718946	4718949	4719728	4719743 +	-
4723275	4723263	4719883	4719858 -	-
	4723981	4723280	4723280 -	-
4725549	4725437	4723968	-	-
	4726787	4727215	4727215 +	-
	4727351	4727533	+	-
	4727530	4728447	+	-
	4728444	4729904	+	-
	4729908	4731947	+	-
4731985	4732042	4732440	4732442 +	-
4741698	4741746	4742534	+	-
	4742534	4743283	4743331 +	-
4743338	4743343	4743867	+	-
	4743864	4744532	+	-
	4744522	4744833	4744834 +	-
4744835	4744835	4745845	4745845 +	-
4747007	4747007	4746603	4746603 -	-
4748668	4748679	4749281	4749281 +	-
	4750353	4749346	-	-
	4750445	4751416	+	-
4751425	4751432	4752061	+	-
	4752058	4752495	4752495 +	-
	4753421	4752519	-	-
	4753543	4754538	+	-
4754708	4754714	4756141	4756148 +	-
4757542	4757466	4756225	4756214 -	-
4759067	4759158	4760120	4760124 +	-
4760227	4760227	4760997	+	-
4766545	4766430	4763758	4763758 -	-
395406			396943 +	16SrRNA
401066			402603 +	16SrRNA

4703560			4702023 -	16SrRNA
4709223			4707686 -	16SrRNA
397440			400317 +	23SrRNA
403100			405978 +	23SrRNA
4701526			4698649 -	23SrRNA
4707186			4704309 -	23SrRNA
400443			400557 +	5SrRNA
406104			406218 +	5SrRNA
406353			406467 +	5SrRNA
4698523			4698409 -	5SrRNA
4704182			4704068 -	5SrRNA
4352632	4352675	4354564	4354681 +	aas
	2341064	2340324	-	aat
1477077	1477077	1476118	1476027 -	accA
4301665	4301680	4302159	4302161 +	accB
4302169	4302170	4303537	4303563 +	accC
3307862	3307830	3306955	-	accD
	245781	247082	+	aceA
	1858533	1855858	-	aceE
475445	475478	478165	481352 +	aceE2
2246961	2246882	2244129	2244129 -	acn
3535258	3535189	3532571	3532571 -	acnA
2247815	2247858	2250449	2250449 +	acnB
	2977000	2977587	+	acpD
1100026	1100076	1100315	1100315 +	acpP
4610971	4610954	4610697	4610697 -	acpP2
3060171	3060184	3063357	3063357 +	acrD
4663928	4663970	4665913	4665960 +	acsA
	2163353	2165854	+	actP
3430031	3430013	3428694	3428633 -	acvB
1872058	1872058	1870712	-	adhB
4006689	4006684	4005575	4005567 -	adhC
2877152	2877152	2874864	2874836 -	adi
3898689	3898612	3898064	3898064 -	adk
	1244385	1245437	+	adrA
4497802	4497813	4498589	+	agaR
	4494343	4495497	+	agaS
	4496445	4497779	+	agaZ
	1212433	1214046	+	aglA
	1462063	1463331	+	agp
	2491478	2489319	-	aguA
827934	827857	827294	827290 -	ahpC
827099	827069	825477	825435 -	ahpF
1849492	1849542	1852190	1852273 +	alaS
	1570546	1572042	+	aldH
3789786	3789769	3788765	3788765 -	alf1
375882	375882	378167	378167 +	algC
3225839	3225839	3224271	3224266 -	amiC
3987785	3987779	3987003	3986985 -	amn
	92023	90902	-	ampC
1561212	1561212	1560646	1560642 -	ampDI
138162	138162	138983	138983 +	ampDII

	389098	390402	390402	+	ampG
388296	388439	389101		+	ampN
	3698391	3699257		+	ampR
	134158	135588		+	amtB
	1223258	1224973		+	amyM
804975	804960	803944	803944	-	apaH
4567254	4567260	4568198		+	apbA
1178129	1178129	1177107		-	apbE
2010874	2010884	2011420	2011698	+	apt
	1570442	1569090		-	aptA
3479614	3479628	3480347	3480361	+	aqpZ
327459	327464	328384	328488	+	arcA
	3399544	3400998		+	arcD
	3191549	3190596	3190596	-	argC
3194673	3194642	3193554	3193554	-	argE
3196024	3195990	3194794	3194774	-	argG
3190595	3190575	3189280		-	argH
372351	372288	370645	370641	-	argS
2982334	2982332	2981025	2981022	-	aroA
	3542142	3543254	3543306	+	aroB
	3329299	3328196	3328196	-	aroC
4542379	4542322	4541477	4541477	-	aroE
4271305	4271149	4270076	4269963	-	aroG
917990	918001	919392	919403	+	aroH
3541603	3541603	3542145		+	aroK
4300751	4300754	4301203		+	aroQ
	160110	159607		-	arsC
	3113634	3113975	3113975	+	arsC2
	1668123	1668620		+	arsC3
	1669731	1670153		+	arsC4
	160495	161223		+	arsH
	160477	160148		-	arsR
	1667279	1667626		+	arsR2
3327075	3327075	3326047	3326044	-	asd
1512677	1512724	1514415	1514415	+	asnB
3103461	3103440	3101515	3101515	-	asnB2
3040232	3040256	3041650	3041650	+	asnC
22571	22514	21312	21312	-	aspC
3694347	3694313	3692562	3692562	-	aspS
3880436	3880431	3879205	3879150	-	astC
	1307289	1306615		-	ate1
4143235	4143216	4141669	4141657	-	atpA
4145547	4145547	4144747	4144714	-	atpB
4139207	4139150	4138728	4138728	-	atpC
4140671	4140670	4139264	4139215	-	atpD
4144704	4144673	4144368	4144358	-	atpE
4144316	4144312	4143791	4143791	-	atpF
4141647	4141571	4140708	4140673	-	atpG
4143790	4143788	4143261	4143261	-	atpH
	2829008	2827848		-	atzC2
	1772366	1773604		+	B
	3816323	3815319		-	batA

3065116	3065075	3063927	3063922	-	bcd
	3498290	3497031		-	bcr
	4709882	4711057		+	benE
	2240078	2238396	2238396	-	betA
2241655	2241652	2240180	2240096	-	betB
	2242281	2241691		-	betI
2777931	2777748	2775769	2775760	-	betT
3520832	3520832	3521407	3521449	+	bfr
4365552	4365541	4365071	4364955	-	bfr2
1518435	1518439	1518927	1518927	+	bfr3
	1182852	1180432		-	bfrA
438813	438899	441073	441073	+	bgIX
3592950	3592955	3594346		+	bioA
	4506089	4507132		+	bioB
4507185	4507200	4508423	4508423	+	bioF
4508424	4508442	4509221	4509250	+	bioH
317691	317692	318660		+	birA
	3804530	3804165		-	blal
	3242236	3242787		+	blc
	4415808	4416302		+	blc2
2178236	2178236	2180854	2182061	+	bmnA
4746490	4746476	4745931	4745931	-	btuE
3077383	3077369	3076782	3076749	-	btuE2
2715470			2715556	+	C4.1
1109000			1108898	-	C4.10
325038			324953	-	C4.11
158204			158114	-	C4.12
4037501			4037595	+	C4.13
3749162			3749054	-	C4.14
2581371			2581275	-	C4.15
482514			482428	-	C4.2
55303			55218	-	C4.3
4638592			4638502	-	C4.4
2434729			2434815	+	C4.5
2969190			2969101	-	C4.6
4435850			4435936	+	C4.7
2069972			2069881	-	C4.8
714864			714772	-	C4.9
	1730416	1727504		-	cadA
3921550	3921441	3919117	3919117	-	cadC
	4660205	4658796		-	calB
2209581	2209691	2210818	2210835	+	carA
2210964	2210967	2214209	2214209	+	carB
	3838819	3838322		-	cbIA
	3834374	3833667		-	cbIB
	3838084	3835535		-	cbIC
3520090	3520058	3519171	3519158	-	cbpA
	4560655	4561824		+	cbpD
	4562006	4563175		+	cbpD2
601109	601131	602501	602616	+	cbsB
4034076	4034076	4035296	4035598	+	cca
3163689	3163703	3164332		+	ccmA

	3164329	3165024	3165024	+	ccmB
3165035	3165068	3165838		+	ccmC
	3166020	3166481		+	ccmE
	3166482	3168401	3168406	+	ccmF
3168410	3168410	3169027	3169031	+	ccmG
3169032	3169032	3169481		+	ccmH
2834246	2834216	2833452	2833438	-	cdh
	1492414	1491578	1491576	-	cdsA
	4308417	4307422	4307039	-	cdsA2
3125343	3125343	3124228	3124228	-	cfa
2852657	2852608	2849813	2849813	-	cgb
2267884	2267884	2265896	2265896	-	cheA
2274628	2274628	2272784	2272776	-	cheA2
	2254085	2253012	2253004	-	cheB
	2254678	2254082		-	cheD
2255529	2255529	2254675		-	cheR
2320465	2320465	2319521	2319508	-	cheV
2262176	2262156	2261665	2261535	-	cheW
2268280	2268280	2267930	2267911	-	cheY
2275646	2275628	2275236		-	cheY2
	2275236	2274631	2274629	-	cheZ
	653843	651744		-	chiA
	3273223	3272033		-	chiA2
	1670551	1671780		+	chrA
	4615380	4613983		-	cioA
	4613981	4612968		-	cioB
	4166682	4168727		+	cirA
	1271997	1271182		-	citG
3974064	3974070	3975401	3975409	+	citM
3352349	3352349	3353020		+	clcD
2337065	2337077	2339362	2339362	+	clpA
3715456	3715356	3712771	3712739	-	clpB
980149	980238	980828	980930	+	clpP
2335655	2335686	2335964	2336006	+	clpS
980942	980955	982244	982244	+	clpX
13229	13229	14689	14696	+	cls
	4638097	4636679		-	cls2
2031249	2031250	2031927	2032125	+	cmk
1921249	1921249	1921758	1921803	+	coaD
3747844	3747844	3748455	3748455	+	coaE
	318657	319388	319393	+	coaX
4091150	4091152	4091604	4091639	+	codA
3732586	3732586	3733455	3733455	+	comL
	4439165	4440670		+	comM
	1663835	1662093		-	copA
	3631154	3632965		+	copA2
	1661842	1661087		-	copB
	3632962	3633957		+	copB2
1657525	1657522	1657136	1657132	-	copC
	2621768	2622145		+	copC2
	1657131	1656205		-	copD
	2622156	2623040		+	copD2

	1659916	1657664	-	copF
	1661049	1660564	-	copG
3630698	3630698	3631078	3631078 +	copL2
1590526	1590526	1589504	1589504 -	corA
1592690	1592670	1591789	-	corC
	2809718	2810542	+	cpo
	1420049	1420774	+	creB
	1420778	1422238	+	creC
	1422320	1423639	+	creD
4370346	4370478	4371143	4371162 +	crp
1557690	1557645	1556863	1556844 -	crt2
2007347	2007608	2007817	2007817 +	cspA
3111781	3111640	3111431	3111431 -	cspA2
3460470	3460432	3460226	3460226 -	cspD
215602	215602	215123	215123 -	cspR
1852303	1852338	1852541	1852619 +	csrA
3482196	3482199	3484280	+	cstA
	420649	421551	+	ctaC
	421611	423218	+	ctaD
410719	410746	412230	412255 +	ctpA
	2165866	2166321	+	cueR
	185727	188864	+	cusA
2379331	2379294	2376169	-	cusA2
	2369648	2372809	+	cusA3
	1026996	1023955	-	cusA4
	1023951	1020883	-	cusA5
	2368272	2369651	+	cusB
2380518	2380507	2379332	2379332 -	cusB2
	2623086	2623784	+	cusR
4282820	4282820	4283158	+	cutA
	2159135	2159866	2159866 +	cutC
	3169475	3170464	3170509 +	cycH
3175747	3175792	3177381	3177381 +	cydA
3177382	3177397	3178548	3178596 +	cydB
	3173821	3172142	3172142 -	cydC
3175563	3175563	3173818	-	cydD
1349778	1349875	1350915	1350915 +	cyoA
	4455973	4455068	-	cyoA2
1350965	1350975	1352915	+	cyoB
	4455062	4453086	-	cyoB2
	1352912	1353550	+	cyoC
	4453089	4452454	-	cyoC2
	1353550	1353891	1353891 +	cyoD
	4452452	4452120	-	cyoD2
427760	427760	428653	428707 +	cyoE
3785375	3785359	3784376	3784376 -	cysB
	2705560	2707089	+	cysJ
	3785568	3786527	+	cysK
	3592317	3591514	3591514 -	cysQ
3198198	3198204	3199580	3199619 +	cysS
	1243233	1244240	+	cytR
1732037	1732069	1732617	1732617 +	czcD

	3666096	3667091		+	D
4074613	4074613	4073393	4073393	-	dacC
550818	550854	552158		+	dadA
1884416	1884461	1885354	1885355	+	dapA
2208663	2208684	2209355	2209355	+	dapB
	1507911	1508990	1508990	+	dapD
1510263	1510268	1511386	1511386	+	dapE
	4105489	4104638		-	dapF
1395505	1395505	1394105	1394077	-	dat
2012971	2012971	2011595	2011281	-	dbpA
3354313	3354301	3353729	3353729	-	dcd
236194	236205	238361	238361	+	dcp
3964064	3963960	3962617	3962539	-	dctA
226812	226800	225706	225663	-	ddIA
	744216	745178		+	ddIB
1442387	1442487	1444442	1444442	+	deaD
4245733	4245658	4245146	4245106	-	def
374047	374047	375336		+	dfp
	2735780	2736166		+	dgk
795770	795826	796221	796236	+	dgkA
221203	221207	222097	222097	+	dhaA
4540966	4540952	4538850	4538850	-	dinG
	561389	562483		+	dinP
4151824	4151410	4150082	4150067	-	DLAT
	2838191	2836491	2836431	-	dld
	725445	724060	724012	-	dld2
	1	1332	1598	+	dnaA
3100755	3100589	3099159	3099130	-	dnaB
1481776	1481715	1478125	1478086	-	dnaE
	2860279	2863389		+	dnaE2
432967	432925	431186	431159	-	dnaG
1978127	1978221	1979345	1979360	+	dnaJ
1976144	1976144	1978066	1978126	+	dnaK
1603	1608	2708	2708	+	dnaN
1051169	1051173	1051904	1051924	+	dnaQ
4641370	4641359	4640850	4640822	-	dnaQ2
1084617	1084617	1086683	1086689	+	dnaX
4652444	4652354	4651632		-	DPM1
4020684	4020703	4021359	4021359	+	dsbA
4021458	4021467	4022300	4022305	+	dsbA2
915050	915050	915556	915589	+	dsbB
650833	650837	651622	651622	+	dsbC
2881406	2881403	2880561	2880561	-	dsbG
4233322	4233316	4232876	4232844	-	dtd
312593	312593	313624	313740	+	dusA
780104	780104	779040	779031	-	dusB
	375333	375806	375881	+	dut
1491575	1491575	1490385	1490330	-	dxr
3246527	3246527	3248437	3249131	+	dxs
328504	328545	328682	328682	+	ecnA
31768	31727	31089	31089	-	eda
1901911	1901909	1899993	1899989	-	edd

3210263	3210187	3209621	3209574 -	efp
2200554	2200519	2199953	2199920 -	efp2
	4403617	4403231	-	ehpR
1524612	1524623	1525804	1525838 +	emrA
1525911	1525911	1527398	1527398 +	emrB
2049955	2049955	2051352	2051352 +	engA
4019645	4019645	4019043	4018991 -	engB
3981757	3981757	3980591	3980555 -	engC
1828258	1828269	1829561	1829565 +	eno
	2744613	2743855	-	entA
	2749380	2748748	-	entB
	2752222	2751029	-	entC
	2751032	2749380	-	entE
	2748494	2744604	-	entF
	3468716	3467820	3467819 -	era
4164209	4164209	4163550	4163547 -	estB
	621138	620200	620186 -	etfA
621944	621884	621138	-	etfB
3229012	3229024	3230355	3230370 +	ex7L
11376	11390	12151	12156 +	exbB
	2659932	2658148	-	exbB2
12157	12213	12638	12674 +	exbD
	2658137	2657724	-	exbD2
12675	12675	13055	13069 +	exbD3
	4031220	4030846	-	exbD4
4031743	4031732	4031325	4031325 -	exbD5
	835334	834399	-	exo
	1816237	1815578	1815578 -	exoD
4445471	4445518	4446180	4446180 +	exoD2
561219	561197	560682	-	fabA
	560682	559474	559167 -	fabB
1098063	1098204	1099097	1099152 +	fabD
1100316	1100459	1101721	1101721 +	fabF
	4597602	4596364	4596364 -	fabF2
1099180	1099180	1099923	1100002 +	fabG
	3585652	3584894	-	fabG2
3975426	3975426	3976166	3976176 +	fabG3
4509251	4509251	4510030	4510030 +	fabG4
4598315	4598315	4597602	-	fabG5
220034	220050	221066	221104 +	fabH
1096070	1096155	1097132	1097132 +	fabH2
	1485131	1484673	1484673 -	fabZ
2238222	2238174	2236498	2236498 -	fadD
	3577845	3580322	+	fadE
	935675	933645	-	fadH
413125	413232	414659	414659 +	fadL
21211	21211	20036	19957 -	fbp
3855015	3855015	3855998	3856002 +	fdhE
	3850143	3853211	3853211 +	fdnG
	3853222	3854139	+	fdnH
	3854136	3854783	+	fdnI
	2607436	2608284	+	fdsC

1922428	1922443	1922724	+	fdx
	2689037	2688057	-	fecR
	2868361	2869287	+	fecR2
2203635	2203646	2203900	+	feoA
	2203897	2205762	+	feoB
1363765	1363771	1365147	1365161 +	ffh
1057276			1057162 -	ffs
4025442	4025442	4027580	4027580 +	fhuE
	3660439	3661608	+	FI
	3661632	3662141	+	FII
683320	683440	683979	683988 +	fimA
	1627151	1626657	-	fimT
1619585	1619623	1620096	+	fimU
3325901	3325901	3323889	3323863 -	fimV
4307019	4307098	4307295	4307308 +	fis
1812269	1812264	1811830	-	fkbp
	2277316	2276429	-	fleN
2320719	2320725	2321381	2321442 +	flgA
2319376	2319369	2318974	2318973 -	flgB
2318970	2318970	2318563	2318540 -	flgC
2318539	2318539	2317856	2317856 -	flgD
2317855	2317823	2316600	2316568 -	flgE
2316567	2316567	2315818	2315818 -	flgF
2315749	2315714	2314929	2314929 -	flgG
2314925	2314906	2314214	2314214 -	flgH
2314204	2314169	2313075	2313075 -	flgI
	2309988	2308786	2308786 -	flgJ
2313074	2313073	2311874	2311874 -	flgK
2311873	2311865	2309985	-	flgL
2321445	2321457	2321762	2321770 +	flgM
2321771	2321771	2322097	2322119 +	flgN
	2281173	2279065	-	flhA
	2282300	2281170	-	flhB
2278944	2278919	2277303	-	flhF
	2276432	2275686	2275668 -	fliA
2307168	2307096	2305912	2305889 -	fliC
2305880	2305825	2304647	2304627 -	fliC2
2308461	2308386	2307169	2307169 -	fliC3
2304242	2304205	2302790	2302701 -	fliD
2295988	2295986	2295621	2295608 -	fliE
2295607	2295607	2293961	2293961 -	fliF
2293960	2293944	2292967	-	fliG
	2292970	2292329	-	fliH
	2292332	2290947	2290944 -	fliI
2290943	2290943	2290476	-	fliJ
	2290476	2289307	2289180 -	fliK
2289123	2289114	2288599	2288599 -	fliL
2288598	2288589	2287585	-	fliM
	2287588	2287253	-	fliN
	2287256	2286837	2286837 -	fliO
2286835	2286835	2286056	2285990 -	fliP
	2285989	2285720	-	fliQ

	2285688	2284915	-	fliR
2302666	2302661	2302245	-	fliS
4245031	4245025	4244102	4244102 -	fmt
2145550	2145537	2144785	2144774 -	fnr
2710071	2709949	2709290	2709272 -	fnr2
	802713	803213	803213 +	folA
437051	437054	437407	437473 +	folB
948164	948167	949438	949479 +	folC
2055190	2055192	2056070	2056070 +	folD
4726172	4726161	4725550	4725550 -	folE
1889954	1889957	1890442	1890470 +	folK
1840862	1840865	1841761	+	folP
47080	47080	47892	47892 +	fpg
3120438	3120443	3121222	3121237 +	fpr
1493738	1493738	1493184	1493175 -	frr
2476356	2476376	2478082	2478082 +	fruA
	2475333	2476289	2476312 +	fruK
3604269	3604232	3597501	-	frzE
	745921	747156	747156 +	ftsA
1829566	1829566	1829919	+	ftsB
4321697	4321664	4320978	4320978 -	ftsE
1838134	1838186	1840111	1840111 +	ftsH
	734515	736359	736362 +	ftsI
1837469	1837475	1838107	1838107 +	ftsJ
2345207	2345224	2347584	2347605 +	ftsK
	734255	734518	+	ftsL
	745175	745924	+	ftsQ
740332	740332	741657	+	ftsW
4320977	4320974	4320027	4320027 -	ftsX
1917100	1917100	1916069	1916061 -	ftsY
747208	747327	748562	748562 +	ftsZ
3083887	3083802	3082420	3082409 -	fumC
1969582	1969628	1970044	1970044 +	fur
896638	896779	898920	898972 +	fusA
	2360079	2362115	+	fusA2
2038662	2038733	2039536	2039536 +	galU
3799340	3799305	3798301	3798270 -	gap
	3022625	3020097	-	gcd
213090	213091	214254	214272 +	GCDH
434989	435014	435997	436035 +	gcp
3588464	3588450	3588055	3588055 -	gcvH
3498660	3498722	3501589	3501598 +	gcvP
3589668	3589656	3588544	3588466 -	gcvT
	1922721	1924451	1924451 +	ggt
4514161	4514162	4516051	4516075 +	gidA
4656788	4656788	4656150	4656088 -	gidB
	1234611	1235429	+	gip
	2704585	2703167	-	glgA
	2703170	2700936	-	glgB
	2694684	2692564	-	glgX
	1903697	1902690	-	glk
	3306955	3305594	3305594 -	glmM

4126026	4126019	4124181	4124181 -	glmS
4135943	4135933	4134566	4134535 -	glmU
132049	132066	133475	133624 +	glnA
	133791	134135	+	glnB
	2376172	2375849	2375788 -	glnB2
4429506	4429506	4429168	4429168 -	glnB3
1505284	1505284	1507911	+	glnD
463418	463448	465961	466075 +	glnE
	144237	145685	145724 +	glnG
143183	143183	144244	+	glnL
821146	821146	819398	819391 -	glnS
1050047	1050047	1049283	-	gloB
	4153554	4155059	+	glpD
4155159	4155165	4156664	4156752 +	glpK
4762257	4762257	4761151	4761140 -	glpQ
3842168	3841966	3840689	3840689 -	gltA
	85199	80811	80811 -	gltB
	80770	79280	-	gltD
1425954	1425963	1427366	1427366 +	gltX
702181	702209	703462	703521 +	glyA
3498557			3498659 +	Glycine.1
4269017			4269104 +	Glycine.2
4268905			4268994 +	Glycine.3
3498489			3498554 +	Glycine.4
4687601	4687587	4686676	4686676 -	glyQ
4686590	4686588	4684513	4684512 -	glyS
3849980	3849852	3849187	3849115 -	gmk
3374093	3374090	3372732	3372668 -	gor
3669662	3669335	3668964	3668855 -	Gp17
	3662201	3662527	+	GpE
566258	566266	566934	566993 +	gph
	3792324	3791671	3791657 -	gph2
1410471	1410485	1411234	1411237 +	gpmA
3121786	3121777	3121298	3121298 -	gpo
155261	155281	156306	156306 +	gpsA
	3662825	3665689	+	GpT
	3665701	3666099	+	GpU
2214210	2214224	2214682	2214686 +	greA
3335695	3335698	3336204	3336204 +	greB
4280311	4280280	4278631	4278613 -	groEL
4280745	4280649	4280362	4280316 -	groES
1975430	1975446	1975961	1976140 +	grpE
970559	970561	970851	+	grxC
3607959	3607964	3608911	+	gshB
	2662691	2662215	-	gspC
	2683645	2681273	-	gspD
	2681276	2679843	-	gspE
	2679835	2678636	-	gspF
	2686687	2686250	-	gspG
	2662795	2663241	+	gspH
	2663265	2663600	+	gspI
	2663582	2664211	+	gspJ

	2686195	2685335	-	gspK
	2685338	2684175	-	gspL
	2684178	2683651	-	gspM
932816	932804	932193	932146 -	gst
2007966	2008006	2008695	2008695 +	gst2
3106677	3106677	3105820	3105820 -	gst3
3114695	3114682	3114047	3114047 -	gst4
4194457	4194457	4195098	4196183 +	gst5
4552201	4552192	4551503	4551497 -	gst6
	1601345	1600728	-	gstA
3570071	3570035	3569016	-	gtrB
	2058448	2060013	2060013 +	guaA
2056394	2056401	2057864	2057881 +	guaB
3025498	3025483	3022757	3022757 -	gyrA
4856	4907	7366	7416 +	gyrB
	1950237	1949365	-	hchA
65840	65840	66763	+	hel
856689	856668	855385	-	hemA
4544665	4544646	4543657	4543650 -	hemB
4161188	4161188	4160277	4160277 -	hemC
	153186	152377	-	hemD
3543646	3543649	3544722	3544794 +	hemE
4623590	4623590	4624486	4624486 +	hemF
4693838	4693838	4694809	4694809 +	hemH
828180	828180	829037	829061 +	hemK
3876519	3876522	3877811	3877811 +	hemL
1804727	1804727	1806163	1806163 +	hemN
	3906521	3905934	-	hemO
4657481	4657427	4656828	4656828 -	hetI
	3516333	3515470	3515448 -	hfIC
3517506	3517463	3516330	-	hfIK
1843101	1843101	1844411	1844421 +	hfIX
1842792	1842811	1843086	1843100 +	hfq
3261961	3261934	3261635	-	himA
	2152858	2153592	+	hisA
	2151189	2152262	+	hisB
	2150098	2151192	+	hisC
	2148806	2150101	+	hisD
	2153586	2154362	+	hisF
	2147898	2148809	+	hisG
	2152259	2152861	+	hisH
	2154352	2154972	+	hisI
2145639	2145665	2147062	2147062 +	hisS
4392489	4392438	4391140	4391140 -	hmgA
	2202337	2201441	2201441 -	hmgcL
	3182872	3184758	+	hmsF
	3180843	3182870	+	hmsH
	3184760	3186016	+	hmsR
	3186013	3186483	+	hmsS
636040	635997	635614	635597 -	hns
4197243	4197242	4196868	4196855 -	hnsB
3404902	3404902	3403865	3403865 -	holA

	1105091	1106047	+	hoIB
645230	645174	644749	644730 -	hoIC
	3461904	3461350	3461316 -	hpt
1974318	1974318	1975382	1975429 +	hrcA
3627515	3627481	3623399	3623361 -	hrpA
4570000	4570000	4572504	4572506 +	hrpB
4674249	4674254	4675942	4675942 +	hscC
2062981	2062981	2064663	+	hsdM
2060123	2060200	2062965	2062980 +	hsdR
	2064660	2066282	2066357 +	hsdS
3570913	3570918	3571811	3571888 +	hsIO
1372746	1372746	1373153	1373159 +	hsIR
4102366	4102313	4100940	4100939 -	hsIU
4102975	4102968	4102417	4102403 -	hsIV
1357958	1357968	1359827	1359867 +	hsp90xo
1919925	1919923	1918031	1917945 -	htpG
3217758	3217750	3216884	3216884 -	htpX
3951401	3951401	3952318	3952412 +	htrB
4233378	4233378	4234298	4234298 +	htrB2
984990	985055	985327	985338 +	hupB
	2992480	2994021	+	hutH
2991260	2991260	2992483	+	hutI
	784805	786961	+	huvA
3740952	3740961	3742334	3742337 +	hydG
	3656359	3656916	3656916 +	I
4336801	4336683	4334461	4334461 -	icd
2033812	2033899	2034204	2034204 +	ihfB
	1321942	1324773	+	ileS
4536887	4536906	4538744	4538750 +	ilvD
844474	844474	845568	845568 +	ilvE
	3930272	3932008	+	ilvG
	2228529	2230169	+	ilvK
	3931992	3932243	+	ilvN
2340267	2340237	2340019	2339973 -	infA
3280379	3280379	3277734	3277684 -	infB
3266965	3266934	3266455	3266276 -	infC
	859070	859939	859950 +	ipk
2353377	2353377	2354405	2354445 +	iroE
	3637314	3636376	3636376 -	iroE2
	3383721	3384599	3384620 +	ispA
1212227	1212218	1211220	1211220 -	ispB
	1829916	1830614	1830614 +	ispD
1830615	1830649	1831146	+	ispF
1896230	1896327	1897478	+	ispG
1325298	1325325	1326275	1326275 +	ispH
3843539	3843532	3842594	3842516 -	iunH
257561	257492	256329	256319 -	ivd
	3655476	3656366	+	J
351469	351338	350235	-	katA
1375559	1375546	1373903	1373894 -	katA2
	3504517	3506607	+	katE
942580	942580	941324	941261 -	kbl

	386472	384763	-	kdpA
	384752	382695	-	kdpB
	382698	382048	-	kdpC
	381996	379336	-	kdpD
379335	379328	378642	378576 -	kdpE
1826580	1826669	1827499	1827504 +	kdsA
1640175	1640190	1640963	+	kdsB
1156797	1156770	1156222	-	kdsC
1157839	1157839	1156838	1156803 -	kdsD
3951340	3951340	3950042	3950042 -	kdtA
4415355	4415281	4412861	4412820 -	kefA
	4590141	4591919	4591926 +	kefB
	2053182	2055014	+	kefB2
1899889	1899876	1899217	1899217 -	kgdA
	806176	805373	805373 -	ksgA
	25913	26833	+	ku
3688818	3688769	3686850	3686756 -	kup
	3651982	3652449	+	L
2839329	2839327	2838188	-	lctD
	2841808	2840150	-	lctP
	2840096	2839332	-	lctR
	1338324	1339325	+	ldhA
	798937	799557	+	lemA
3472497	3472477	3470669	3470645 -	lepA
3470633	3470613	3469819	3469819 -	lepB
	239635	240261	+	lepB2
	3933428	3935014	+	leuA
	3937845	3938912	3938929 +	leuB
	3935865	3937283	+	leuC
	3937283	3937861	+	leuD
3408321	3408321	3405628	3405618 -	leuS
1846953	1846953	1847588	1847625 +	lexA
801036	801038	801925	+	lgt
98571	98571	96082	-	lhr
3031716	3031716	3029251	3029205 -	ligA
	3453686	3455293	+	ligC
4070647	4070645	4069635	4069635 -	lipA
	4071374	4070664	4070664 -	lipB
2349667	2349679	2350317	2350507 +	lolA
982353	982388	984835	984968 +	lon
4150060	4149974	4148172	4148172 -	lpdA
	3426005	3428569	+	lpiA
628571	628571	629305	629306 +	lpsI
629307	629307	629939	629987 +	lpsJ
	1154982	1154263	1154223 -	lptB
1484672	1484656	1483865	-	lpxA
	1483868	1482609	-	lpxB
748563	748768	749679	749679 +	lpxC
1486150	1486150	1485128	-	lpxD
957546	957546	956800	956643 -	lpxH
	1639095	1640114	1640136 +	lpxK
4425494	4425474	4424566	4424543 -	lpxO

550704	550704	550225	549950 -	lrp
	1324773	1325297	1325297 +	lspA
	2374547	2374077	-	lspA2
	3653320	3653925	+	lys
1202082	1202111	1204705	1204774 +	lysA
2230314	2230357	2231868	2231979 +	lysS
	2223378	2224250	+	lytT
	3651170	3651877	+	M
	1538634	1537393	-	macA
	2959844	2960920	+	macA
	1537396	1535438	-	macB
	2960917	2962881	+	macB2
3962406	3962386	3960095	3960042 -	maeB
3394686	3394686	3394072	-	maf
	2699158	2697380	-	malQ
627072	627072	625669	622170 -	manA
1504439	1504439	1505281	1505283 +	map
1391343	1391336	1390554	1390553 -	map2
2181663	2181660	2180965	2180917 -	masA
	2890724	2888898	-	mcpA
925878	925887	926873	926873 +	mdh
	4410322	4412361	+	mdoB
47989	47998	49602	49602 +	mdoD
	2778733	2778410	2778320 -	mdtI
	1720807	1719119	-	merA
	1721105	1720818	-	merP
1721539	1721540	1721947	1721949 +	merR
	1721468	1721118	-	merT
	3562318	3561287	-	met2
	3561290	3560055	-	metB
602617	602625	603797	603859 +	metC
	2523193	2524227	+	metE
	757011	756184	-	metF
3422218	3422225	3424306	3424308 +	metG
	3067320	3070004	3070004 +	metH
3066171	3066171	3067262	3067262 +	metH2
774081	774034	772823	772823 -	metK
	2521359	2520445	-	metR
3170572	3170572	3171684	+	metX
1418365	1418365	1414901	1414881 -	mfd
2589928	2589928	2592687	2592687 +	mgtA
	2592718	2593455	+	mgtC
1147151	1147114	1145753	1145700 -	mgtE
	4589794	4588424	-	mgtE2
	1841761	1842714	1842760 +	miaA
1296725	1296723	1295941	1295941 -	minC
1295940	1295903	1295094	1295092 -	minD
1295091	1295091	1294831	1294814 -	minE
	244094	245716	+	mls
138987	139000	139836	139836 +	mltA
4077414	4077100	4075979	-	mltB
	1049286	1048144	1048110 -	mltD

3333949	3333944	3332334	3332322 -	mltD
	286699	287589	287591 +	mmsB
2334577	2334577	2333450	-	mnmA
2715078	2715030	2714050	2714050 -	moaA
3134575	3134630	3134980	+	moaB3
	2714029	2713043	-	moaBC
	2711793	2711533	-	moaD
	2711529	2711029	-	moaE
	2711063	2710497	-	mobA
2709271	2709271	2708528	2708528 -	modA
2708527	2708524	2707841	-	modB
	2713046	2711793	-	moeA
548717	548717	547863	547863 -	motA
2272693	2272693	2271953	2271952 -	motA2
547862	547859	546909	546887 -	motB
2271951	2271951	2270935	2270935 -	motB2
3897758	3897732	3896368	-	mpl
	1280642	1278954	-	mqq
733290	733290	734258	+	mraW
	739245	740330	740331 +	mraY
732771	732874	733275	733289 +	mraZ
3824244	3824253	3826676	3826676 +	mrcA
3616726	3616723	3614285	-	mrcB
4082514	4082511	4080436	-	mrDA
	4080439	4079327	4079327 -	mrDB
4085359	4085310	4084264	4084210 -	mreB
4084149	4084142	4082997	-	mreC
	4083000	4082515	4082515 -	mreD
684865	684865	687450	+	mrkC
	1637347	1639095	+	msbA
3768838	3768843	3769247	3769247 +	mscL
	574120	573380	-	msrA
821637	821644	822330	822330 +	msrA2
	549276	548809	-	msrB
	576479	575904	-	msrB2
	2521602	2522120	+	msuE
3461301	3461267	3460521	3460472 -	mtaP
3570846	3570840	3570100	3570100 -	mtgA
3026845	3026845	3025781	3025537 -	mtnA
2182982	2182982	2182314	2182304 -	mtnB
2182243	2182221	2181664	2181664 -	mtnD
1396318	1396286	1395570	1395515 -	mtnX
1158139	1158146	1159417	+	murA
2117422	2117422	2116361	2116361 -	murB
742743	742783	744219	+	murC
	1206115	1207524	1207571 +	murD
736368	736368	737864	+	murE
	737861	739255	+	murF
	741654	742742	742742 +	murG
1318824	1319318	1320922	1320938 +	murJ
3224124	3224124	3222220	3222220 -	mutL
1378371	1378327	1375736	1375569 -	mutS

754532	754532	755455	755493 +	mutT
2906162	2906155	2905667	2905667 -	mutX
1916001	1915986	1914862	1914862 -	mutY
65743	65738	65088	65011 -	mviM
	3650151	3651167	+	N
	1610030	1609179	1609158 -	nadC
3403863	3403861	3403196	3403196 -	nadD
3736637	3736634	3735000	3734986 -	nadE
2387509	2387509	2389176	2389176 +	nadE2
	415359	416432	416432 +	nadR
	4043939	4042791	4042783 -	nagA
	4498586	4499701	+	nagA2
3462932	3462911	3461904	-	nagZ
	4051685	4054042	+	nahB
3043693	3043693	3044223	3044223 +	nbaC
4266169	4266182	4267462	4267543 +	ndh
2044647	2044722	2045147	2045157 +	ndk
1410391	1410391	1409717	1409713 -	nfi
	692133	694280	+	nfrB
	4292078	4292917	+	nhoA
1835080	1835103	1835861	1835924 +	nlpD
	2771418	2769055	-	nrdE
	2768953	2767913	-	nrdF
704603	704637	705158	705178 +	nrdR
	179346	180518	+	nreB
	1556505	1555813	1555793 -	nth
4358306	4358306	4357401	4357377 -	nudC
3592922	3592877	3592314	-	nudE
	834402	833848	-	nudF
4366625	4366622	4366002	4365909 -	nudH
3298353	3298239	3297883	-	nuoA
	3297886	3297338	3297305 -	nuoB
3297304	3297304	3296555	-	nuoC
	3296558	3295251	3295154 -	nuoD
3295153	3295153	3294626	3294622 -	nuoE
3294621	3294621	3293281	-	nuoF
	3293284	3291050	-	nuoG
	3291053	3289959	3289955 -	nuoH
3289954	3289954	3289466	3289457 -	nuoI
3289456	3289456	3288800	-	nuoJ
	3288803	3288498	3288498 -	nuoK
3288497	3288490	3286316	3286293 -	nuoL
3286292	3286292	3284784	3284772 -	nuoM
3284771	3284771	3283308	3283181 -	nuoN
3281987	3281983	3280472	3280380 -	nusA
	711780	712259	712270 +	nusB
883391	883391	883951	884145 +	nusG
	3649209	3650117	+	O
1317519	1317712	1318764	1318764 +	obg
3092849	3092902	3094338	3094338 +	odhL
	1436633	1436142	-	ogt
288245	288234	287809	287809 -	ohr

3964178	3964293	3965462	3965487 +	oprP
	3924747	3926324	+	opuD2
2914361	2914332	2913760	2913726 -	orn
1199556	1199556	1199987	1200006 +	osmC
811015	810947	808500	-	ostA
	3728321	3729685	+	otsA
	3725743	3726501	+	otsB
825391	825391	824429	824429 -	oxyR
	3649105	3647348	-	P
4375299	4375297	4374710	4374699 -	pabA
3042302	3042309	3042947	3042962 +	pai2
1890471	1890477	1891292	+	panB
	1891289	1892128	1892140 +	panC
1892285	1892290	1892670	+	panD
4256229	4256229	4255453	4255453 -	panE
4656056	4656037	4655240	-	parA
	4655240	4654317	4654307 -	parB
1521592	1521563	1519320	1519286 -	parC
1824109	1824109	1822220	1822183 -	parE
	3523906	3521525	-	pbpC
	1833769	1834446	1834464 +	pcm
3946436	3946451	3947098	3947108 +	pcm2
1888568	1888568	1889953	1889953 +	pcnB
4399199	4399225	4400307	+	pdhA
	4400300	4401367	4401368 +	pdhB
807153	807153	806173	-	pdxA
3540505	3540424	3539825	3539825 -	pdxH
15008	15009	15752	15786 +	pdxJ
1982090	1982090	1982998	+	pdxK
	673322	674185	+	pefK
	674182	675327	+	pefL
646800	646735	645257	645231 -	pepA
3867532	3867541	3868872	3868872 +	pepQ
1603492	1603546	1604166	+	petA
	1604166	1605425	1605432 +	petB
1605433	1605433	1606167	1606252 +	petC
3898757	3898765	3900021	3900021 +	pfk
	1892667	1894181	1894198 +	pgi
3793529	3793496	3792321	-	pgk
	1902693	1901968	1901951 -	pgl
1644699	1644717	1645343	1645482 +	pgsA
4382693	4382702	4385530	+	phaAB
	4385530	4385922	+	phaC
	4385919	4387454	+	phaD
	4387451	4387957	+	phaE
	4387954	4388238	+	phaF
	4388235	4388624	4388627 +	phaG
1474695	1474689	1473382	1473382 -	phaZ
3218768	3218782	3219522	3219523 +	phbB
2901270	2901264	2900209	2900209 -	phbC
2983608	2983608	2982409	2982383 -	pheA
3265619	3265426	3264431	3264413 -	pheS

3264366	3264343	3261962	3261962 -	pheT
34738	34731	33838	33823 -	phhA
3433299	3433282	3432947	3432826 -	phnA
	518315	518737	+	phnB
3379355	3379363	3381069	+	phoA
968671	968655	967966	967965 -	phoB
	1015503	1014814	-	phoB2
	1863474	1865069	+	phoD
	3096730	3095150	-	phoD
314970	314995	316419	316460 +	phoQ
967886	967859	966528	966528 -	phoR
	1548585	1547878	-	phoU
	1553944	1552928	-	phoX
1201042	1201032	1200154	1200110 -	phzF
1202035	1202035	1201163	1201163 -	phzF2
3745480	3745345	3744926	3744837 -	pilA
3744210	3744177	3742447	3742413 -	pilB
3745718	3745738	3746961	3746961 +	pilC
1626052	1626073	1626480	1626511 +	pilE
2046375	2046392	2047135	2047171 +	pilF
3607755	3607675	3607322	3607322 -	pilG
3518698	3518701	3519072	3519080 +	pilH
3607321	3607303	3606941	-	pilH2
	3606941	3606411	3606396 -	pilI
3606384	3606369	3604333	3604331 -	pilJ
3824063	3823916	3822975	-	pilM
	3822975	3822094	-	pilN
	3822097	3821441	-	pilO
	3821444	3820908	3820908 -	pilP
3820843	3820838	3818916	3818916 -	pilQ
	3739287	3740900	+	pilS
1133583	1133598	1134635	1134635 +	pilT
1134702	1134735	1135877	1135892 +	pilU
	1620093	1620590	+	pilV
	1620587	1621756	1621761 +	pilW
1621762	1621762	1622283	1622296 +	pilX
1622297	1622297	1626049	1626051 +	pilY1
	1106044	1106397	1106404 +	pilZ
	959305	958160	-	pimB
829064	829086	830027	830037 +	pip
2582473	2582473	2583420	2583441 +	pip2
1818445	1818458	1819579	1819579 +	pitA
1184241	1184241	1183564	1183553 -	piuC
	1867286	1865178	-	plcC
69804	69804	72431	72467 +	plsB
124867	124893	125642	125642 +	plsC
274568	274558	273932	273932 -	pncA
681410	681417	682598	682646 +	pncB
3275767	3275612	3273504	3273504 -	pnp
838566	838618	839697	839697 +	pntAa
	841283	841603	+	pntAb
	841600	843060	+	pntB

	197934	197353	-	pnuC
414773	414773	415372	+	pnuC2
4629771	4629771	4626997	4626894 -	polA
1583681	1583686	1584795	1584826 +	potF
1584971	1584985	1586121	+	potG
	1586118	1587050	+	potH
	1587047	1587889	1587889 +	potI
	3028719	3027763	3027722 -	poxA
	3721370	3719652	-	poxB
3912931	3912954	3913490	3913490 +	ppa
769318	769324	772059	772059 +	ppc
925258	925277	925768	925768 +	ppiB
986188	986204	988159	988159 +	ppiD
966515	966493	964436	964380 -	ppk
2907797	2907843	2910221	2910290 +	pps
964246	964230	962734	962673 -	ppx
	855407	854325	854325 -	prfA
2224310	2224520	2225446	2225520 +	prfB
3563609	3563614	3565218	3565246 +	prfC
4262252	4262252	4264429	4264475 +	priA
4120264	4120250	4118220	4118220 -	prlC
4305165	4305174	4306094	4306099 +	prmA
	3187851	3186580	3186519 -	proA
3189005	3189005	3187848	-	proB
1132814	1132814	1131993	1131944 -	proC
2639552	2639556	2641046	2641180 +	proP
637933	637921	636218	636218 -	proS
3537418	3537418	3536480	3536445 -	prpB
3536444	3536444	3535287	3535259 -	prpC
	3530551	3529091	-	prpD
928371	928371	930251	930258 +	prpE
	3537527	3539110	+	prpR
860025	860165	861127	861150 +	prs
	3330996	3331838	3331838 +	psd
	1925838	1925545	-	psiF
638930	638930	639706	+	pssA
2902989	2902989	2902375	2902375 -	pssA2
	1550375	1549512	-	pstA
	1549504	1548662	-	pstB
1551361	1551343	1550375	-	pstC
1552539	1552511	1551423	1551423 -	pstS
	2678336	2677161	-	pstS2
861854	861902	862480	862482 +	pth
584854	584854	584492	584492 -	ptpS
4108439	4108431	4106320	4106320 -	ptrB
	1149383	1149114	1149112 -	ptsH
1149111	1149111	1147342	1147342 -	ptsI
3514482	3514338	3513046	3513046 -	purA
3084120	3084140	3085507	3085533 +	purB
4380791	4380810	4381736	4381736 +	purC
4315076	4315076	4316359	4316359 +	purD
1610349	1610355	1610858	+	purE

951374	951404	952870	952870 +	purF
4313419	4313431	4315014	4315075 +	purH
	1610855	1612003	1612003 +	purK
654631	654631	658551	658551 +	purL
1164808	1164799	1163741	1163741 -	purM
	1162111	1161452	1161452 -	purN
1304082	1304091	1305278	1305278 +	purT
272942	272942	273799	273799 +	purU
419840	419835	416617	416617 -	putA
3791472	3791460	3789994	3789994 -	pykA
1142837	1142838	1143788	1143845 +	pyrB
3203637	3203638	3204984	+	pyrC
2118492	2118486	2117431	2117423 -	pyrD
388148	388138	387479	387461 -	pyrE
	66760	67485	67485 +	pyrF
1824853	1824915	1826579	1826579 +	pyrG
1494566	1494563	1493835	1493792 -	pyrH
	3647348	3646341	3644652 -	Q
3045735	3045735	3047102	+	qbsG
	1117901	1117125	-	qnrR
	1400726	1399347	-	qseC
1994120	1994120	1995187	1995198 +	queA
	3654446	3654931	+	R
1356446	1356456	1357832	1357934 +	radA
	373186	372446	-	radC
	1685540	1685046	-	radC2
	337772	338668	338668 +	rarD
3277629	3277601	3277218	3277218 -	rbfA
781754	781729	780764	780764 -	rbsK
73784	73784	74689	74700 +	rdgC
1847687	1847793	1848830	1848865 +	recA
	4738215	4734538	-	recB
4741553	4741553	4738212	-	recC
	4734541	4732661	4732634 -	recD
3688	3700	4794	4853 +	recF
3845964	3845964	3843853	3843853 -	recG
2217097	2217100	2218857	2218857 +	recJ
1974210	1974202	1972541	1972541 -	recN
3467801	3467801	3467082	3467082 -	recO
3628702	3628766	3630493	3630569 +	recQ
1087045	1087093	1087692	1087692 +	recR
1848894	1848941	1849432	1849491 +	recX
3622670	3622545	3620512	3620505 -	relA
52313	52313	54289	54322 +	rep
622122	622165	623220	623234 +	rfbB
	624673	625566	626309 +	rfbD
4323656	4323551	4321770	4321770 -	rhIB
592567	592346	590913	590831 -	rhIE
4324493	4324981	4326315	4326315 +	rho
3257962	3257957	3257316	3257252 -	rhtB
4234406	4234410	4235522	4235522 +	ribA
	710055	711155	711208 +	ribB

705246	705246	706364	706367	+	ribD
709200	709432	710058		+	ribE
1320982	1320998	1321945		+	ribF
711310	711316	711783		+	ribH
	640203	640700	640726	+	rimI
	3756268	3755309		-	rimK
1367569	1367598	1368110	1368117	+	rimM
3282774	3282578	3281988	3281988	-	rimP
3266274	3266188	3265991	3265991	-	RL35
1533174	1533181	1533924	1533924	+	rlmB
3402660	3402660	3402190	3402183	-	rlmH
4758771	4758771	4757602	4757574	-	rlmI
1561946	1561958	1564096	1564106	+	rlmL
2045158	2045158	2046363	2046363	+	rlmN
	4075982	4074714	4074614	-	rlpA
927062	927069	927683	927692	+	rluA
	2005933	2006802		+	rluA2
	3157259	3158896	3158896	+	rluB
939915	940019	940741	940756	+	rluB2
3137385	3137331	3136402	3136353	-	rluC
3732488	3732454	3731465		-	rluD
4573717	4573712	4573173	4573139	-	rluE
1448893	1448893	1449615	1449615	+	rluF
3440681	3440690	3441388	3441388	+	rluF2
623235	623235	624122		+	rmlA
	624119	624676		+	rmlC
4748622	4748622	4747054	4747008	-	rmuC
	3469393	3468713		-	rnc
3233949	3233958	3235037	3235037	+	rnd
3137422	3137793	3141050	3141050	+	rnE
3424988	3425001	3425414	3425765	+	rnfB
	3394079	3392592	3392566	-	rnG
1050704	1050716	1051168	1051168	+	rnhA
	1482612	1481953	1481953	-	rnhB
824351	824305	823901	823901	-	rnk
4768699	4768626	4768261		-	rnpA
730438			730789	+	rnpB
1529993	1529993	1532452	1532492	+	rnr
1544984	1544934	1544350	1544324	-	rnt
	4079212	4078109		-	rodA
4380287	4380278	4379601	4379591	-	rpe
	2233216	2235393	2235393	+	rpfC
2236351	2236336	2235464	2234543	-	rpfF
2232145	2232158	2233219		+	rpfG
2478093	2478096	2479349	2479427	+	rpfN
3861559	3861624	3862349		+	rph
3873460	3873460	3874107	3874107	+	rpiA
884639	884643	885341	885341	+	rplA
902384	902394	903221	903227	+	rplB
900819	900819	901469	901469	+	rplC
901470	901482	902087		+	rplD
906199	906210	906752	906770	+	rplE

907752	907752	908276	908309 +	rplF
3038245	3038181	3037732	3037653 -	rplI
885407	885728	886324	886325 +	rplJ
884147	884210	884638	884638 +	rplK
886327	886327	886695	886695 +	rplL
4368167	4368096	4367668	4367666 -	rplM
905496	905496	905864	905880 +	rplN
909605	909611	910054	910097 +	rplO
904599	904604	905017	+	rplP
914234	914424	914807	914813 +	rplQ
908314	908363	908716	908720 +	rplR
1368928	1369032	1369433	1369470 +	rplS
3265990	3265979	3265620	3265620 -	rplT
1316878	1316928	1317236	1317254 +	rplU
903510	903510	903845	903863 +	rplV
	902084	902383	902383 +	rplW
905881	905881	906198	906198 +	rplX
861151	861236	861853	861853 +	rplY
1317255	1317255	1317518	1317518 +	rpmA
4639492	4639308	4639105	4639092 -	rpmB
	905017	905202	905202 +	rpmC
909435	909437	909604	909604 +	rpmD
3842513	3842505	3842263	3842236 -	rpmE
1095775	1095869	1096063	1096069 +	rpmF
4639091	4639091	4638927	4638927 -	rpmG
4768924	4768901	4768761	4768708 -	rpmH
2031285	2031052	2030927	2030927 -	rpmJ2
913212	913235	914233	914233 +	rpoA
886696	887025	891179	891268 +	rpoB
891269	891269	895492	895611 +	rpoC
4232795	4232785	4230932	4230932 -	rpoD
3475757	3475742	3475122	-	rpoE
	3911717	3911217	-	rpoE2
4318310	4318188	4317313	4317313 -	rpoH
1154222	1154222	1152801	1152801 -	rpoN
2300349	2300333	2298924	2298924 -	rpoN2
3849088	3849076	3848777	3848710 -	rpoZ
2032126	2032126	2033811	2033811 +	rpsA
1498491	1498288	1497482	1497472 -	rpsB
903864	903864	904598	904598 +	rpsC
912549	912550	913179	913189 +	rpsD
908727	908878	909420	909423 +	rpsE
3039048	3038966	3038529	3038518 -	rpsF
896159	896164	896637	896637 +	rpsG
907077	907335	907733	907751 +	rpsH
4367665	4367665	4367273	4367270 -	rpsI
900192	900496	900807	900818 +	rpsJ
912138	912145	912534	912534 +	rpsK
895614	895777	896151	896158 +	rpsL
911729	911777	912133	912137 +	rpsM
906771	906771	907076	907076 +	rpsN
3276123	3276076	3275768	3275768 -	rpsO

1367265	1367293	1367553	1367563 +	rpsP
905203	905214	905483	905495 +	rpsQ
3038517	3038517	3038287	3038257 -	rpsR
903228	903228	903497	903509 +	rpsS
1319431	1319200	1318931	1318907 -	rpsT
434943	434805	434590	434590 -	rpsU
264758	264934	267336	267337 +	RRM1
267347	267481	268500	268581 +	RRM2
	3475125	3474250	3474239 -	rseA
4244101	4244098	4242767	4242743 -	rsmB
556936	556936	558000	+	rsmC
	3594337	3595074	3595074 +	rsmE
580874	580838	580149	-	rstA
	557997	558698	+	rsuA
4578047	4578051	4579271	4579321 +	rtcB
3875824	3875811	3875620	3875610 -	rubA
3465712	3465706	3464372	3464345 -	rumA
3689425	3689412	3688819	3688819 -	ruvA
3686713	3686713	3685673	-	ruvB
3690052	3689947	3689426	3689426 -	ruvC
	3654928	3655389	+	S
766464	766353	764908	764869 -	sahH
	3047102	3048541	+	sbcB
3155467	3155469	3156377	3156390 +	scpA
3156391	3156391	3157266	+	scpB
2175940	2175940	2176935	+	scrK
3556284	3556299	3557681	3557738 +	sdaA
1908618	1908618	1910408	1910434 +	sdhA
1910435	1910475	1911260	1911260 +	sdhB
1907579	1907871	1908203	+	sdhC
	1908200	1908586	1908617 +	sdhD
751582	751667	754399	754399 +	secA
154739	154742	155260	155260 +	secB
1996895	1996956	1998812	1998812 +	secD
1998813	1998829	1999809	1999809 +	secF
3298934	3298924	3298487	3298436 -	secG
910098	910098	911429	911470 +	secY
	3856003	3857427	+	selA
	3857424	3859355	+	selB
3859496	3859502	3860581	3860797 +	selD
2188594	2188582	2187341	2187315 -	serA
2984745	2984745	2983660	2983609 -	serC
2979442	2979432	2978152	2978134 -	serS
3874728	3874728	3875579	3875590 +	sirB1
121131	121135	121611	121611 +	sixA
3376177	3376101	3375619	3375553 -	slyD
3037540	3037472	3033969	3033969 -	smc
	4521972	4520776	-	smeA
	4520763	4517614	-	smeB
	4517617	4516202	-	smeC
4098925	4098920	4097736	4097727 -	smeD
4097723	4097723	4094601	4094543 -	smeE

4094515	4094493	4093108	4093108 -	smeF
	3058900	3060168	3060170 +	smeG
4341557	4341585	4342829	4342829 +	smeI
4342904	4342904	4346137	4346168 +	smeJ
	4346169	4349291	+	smeK
3780947	3780930	3779824	-	smeM
	3779827	3776702	3776551 -	smeN
	3945514	3944384	-	smeO
3944379	3944379	3941218	3941112 -	smeP
	4523489	4524178	+	smeR
	1937335	1936304	-	smeRv
	4522101	4523492	+	smeS
4099136	4099145	4099804	4099850 +	smeT
	1937707	1938477	+	smeU1
1943155	1943155	1943892	+	smeU2
	1938569	1939792	+	smeV
	1675776	1674808	-	smeV2
1939920	1939920	1943090	+	smeW
	1943886	1945307	+	smeX
	1020550	1019462	-	smeX2
2194287	2194334	2195455	2195455 +	smeY
2195480	2195492	2198641	+	smeZ
	4247045	4248172	+	smf
4248173	4248216	4248689	4248728 +	smg
	2630465	2627388	-	smmA
	2631634	2630462	-	smmB
	2632878	2631631	-	smmC
	2366911	2368158	+	smmD
	1649595	1648522	-	smmD2
	2018674	2019819	+	smmG
	2019816	2023337	+	smmH
	2023334	2026420	+	smmI
	183238	184488	+	smmJ
2382091	2382063	2380519	2380519 -	smmJ2
	184485	185717	+	smmK
	4643528	4644781	+	smmO
	4644778	4645983	4645983 +	smmP
	174666	175841	+	smmP2
4645984	4645994	4649203	4649250 +	smmQ
	175841	179086	+	smmQ2
1968771	1968672	1967851	-	smpB
1118059	1118064	1118711	1118765 +	smqnr
	156907	156431	-	smrA
	4447622	4446312	-	sndH
3130992	3130951	3130340	3130297 -	sodA
	2757538	2758167	+	sodA2
1613144	1613111	1612533	1612533 -	sodB
145774	145779	146348	146371 +	sodC
146372	146381	147007	147007 +	sodC2
	1129850	1130284	+	soxR
2114325	2114325	2115329	2115329 +	spcN
4423400	4423395	4421506	4421492 -	speA

4370319	4370304	4369510	4369401 -	speD
4423482	4423587	4424441	4424453 +	speE
628445	628430	627084	627073 -	spgM
	3448238	3445593	-	sphB
3848670	3848670	3846508	3846505 -	spoT
4258589	4258562	4256652	4256652 -	sppA
1231939	1232033	1232608	1232608 +	ssb
1606256	1606320	1606937	1606985 +	sspA
1607022	1607022	1607474	1607487 +	sspB
3872099			3872284 +	ssrS
	2093808	2094389	+	ssuE
130068	130068	129535	129490 -	ssuE2
846083	846083	847783	+	StmPr1
3088692	3088764	3091595	3091620 +	sucA
3091628	3091636	3092838	3092846 +	sucB
3738950	3738881	3737712	3737692 -	sucC
3737691	3737691	3736816	3736815 -	sucD
3040130	3040127	3039789	3039788 -	sufA
1195018	1195015	1193540	1193540 -	sufB
1193468	1193466	1192702	1192702 -	sufC
1192701	1192681	1191440	-	sufD
3199635	3199635	3200087	+	sufE
	1057571	1057888	1057888 +	sugE
4369352	4369342	4369022	4368961 -	sugE2
3215321	3215385	3216212	3216212 +	suhB
	808503	807157	807154 -	surA
1832905	1832966	1833772	+	surE
	1139893	1139348	1139317 -	tag
823853	823850	822894	822866 -	talB
	3935025	3935804	+	tam
4692484	4692469	4692017	-	tatB
	4692020	4691271	4691271 -	tatC
4569962	4569962	4569135	4569135 -	tatD
4692720	4692712	4692485	4692485 -	tatE
	1117113	1115980	-	tcrA
3972613	3972613	3971924	-	tctD
	3932340	3933431	+	tdcB
944661	944652	943615	943569 -	tdh
50765	50765	50145	50132 -	tdk
	791235	792548	+	tesA
1310969	1310969	1310049	1310045 -	tesB
2897851	2897836	2895449	2895419 -	tex
1995281	1995286	1996416	1996427 +	tgt
	3924310	3922466	-	thiC
1880374	1880374	1879565	1879542 -	thiD
3875843	3875879	3876505	3876509 +	thiE
3763446	3763495	3764289	+	thiG
712305	712322	713347	713473 +	thiL
3763131	3763131	3763376	3763376 +	thiS
	2139951	2142455	+	thrA
	2142452	2143366	+	thrB
	2143396	2144682	+	thrC

3269126	3268947	3267046	3267046 -	thrS
	801922	802716	+	thyA
978640	978832	980127	980144 +	tig
3382106	3382106	3383434	3383470 +	tilS
3810209	3810179	3808182	3808182 -	tktA
3388663	3388645	3387200	3386590 -	tldD
	1104429	1105094	+	tmk
1966603			1966250 -	tmRNA
	2390491	2393475	+	tnpA
204322	204322	202286	202257 -	tolA
	3684019	3682964	3682885 -	tolA
3682735	3682678	3681359	3681319 -	tolB
3947111	3947115	3948473	3948473 +	tolC
3685251	3685241	3684462	3684462 -	tolQ
3684461	3684437	3684009	-	tolR
4250643	4250666	4253158	4253158 +	topA
	1735371	1733341	-	topB
3299718	3299711	3298956	3298955 -	tpiA
	1037681	1038733	+	trbB
	1038730	1039113	+	trbC
	1039110	1039394	+	trbD
	1039407	1041869	+	trbE
	1044286	1044987	+	trbF
	1045239	1046126	+	trbG
	1046126	1047418	+	trbI
	1041866	1042594	+	trbJ
	1042894	1044267	+	trbL
	2582358	2581693	-	trbP
	3764289	3765023	3765050 +	trmB
1368119	1368119	1368877	1368925 +	trmD
4763757	4763754	4762405	4762354 -	trmE
3215321	3215321	3214494	3214478 -	trmJ
397036			397111 +	tRNA-Ala
402696			402771 +	tRNA-Ala
2884050			2884122 +	tRNA-Ala
2884439			2884511 +	tRNA-Ala
2884685			2884757 +	tRNA-Ala
3237731			3237803 +	tRNA-Ala
4701930			4701855 -	tRNA-Ala
4707593			4707518 -	tRNA-Ala
977076			977149 +	tRNA-Arg
1878407			1878334 -	tRNA-Arg
1878516			1878443 -	tRNA-Arg
1878651			1878578 -	tRNA-Arg
2122330			2122403 +	tRNA-Arg
4476040			4476113 +	tRNA-Arg
1626528			1626601 +	tRNA-Asn
985440			985513 +	tRNA-Asp
985599			985672 +	tRNA-Asp
985763			985836 +	tRNA-Asp
985946			986019 +	tRNA-Asp
1753247			1753317 +	tRNA-Cys

3283021	-	tRNA-fMet
3283180	-	tRNA-fMet
859951	+	tRNA-Gln
4366876	+	tRNA-Gln
1888521	-	tRNA-Glu
2884180	+	tRNA-Glu
2884564	+	tRNA-Glu
2884808	+	tRNA-Glu
881309	+	tRNA-Gly
1645593	+	tRNA-Gly
1747217	+	tRNA-Gly
1752887	+	tRNA-Gly
1753105	+	tRNA-Gly
3760999	-	tRNA-Gly
977327	+	tRNA-His
397140	+	tRNA-Ile
402800	+	tRNA-Ile
4230313	-	tRNA-Ile
4701826	-	tRNA-Ile
4707488	-	tRNA-Ile
978558	+	tRNA-Leu
1527636	-	tRNA-Leu
1529572	-	tRNA-Leu
1529864	-	tRNA-Leu
1806271	-	tRNA-Leu
2887071	+	tRNA-Leu
3298435	-	tRNA-Leu
977483	+	tRNA-Lys
977755	+	tRNA-Lys
3677028	-	tRNA-Lys
4366744	+	tRNA-Met
3241871	+	tRNA-Phe
3242019	+	tRNA-Phe
976960	+	tRNA-Pro
3178779	+	tRNA-Pro
3178996	+	tRNA-Pro
3261229	-	tRNA-Pro
2434294	-	tRNA-Pseudo
3859380	+	tRNA-seC
1052886	+	tRNA-Ser
1084473	-	tRNA-Ser
1852620	+	tRNA-Ser
2974626	-	tRNA-Ser
320293	+	tRNA-Thr
881432	+	tRNA-Thr
1348366	+	tRNA-Thr
882842	+	tRNA-Trp
881199	+	tRNA-Tyr
985339	+	tRNA-Val
1106515	+	tRNA-Val
1629462	+	tRNA-Val
1629635	+	tRNA-Val
3282948	-	tRNA-fMet
3283107	-	tRNA-fMet
860024	+	tRNA-Gln
4366947	+	tRNA-Gln
1888450	-	tRNA-Glu
2884252	+	tRNA-Glu
2884636	+	tRNA-Glu
2884880	+	tRNA-Glu
881379	+	tRNA-Gly
1645665	+	tRNA-Gly
1747289	+	tRNA-Gly
1752959	+	tRNA-Gly
1753177	+	tRNA-Gly
3760929	-	tRNA-Gly
977400	+	tRNA-His
397216	+	tRNA-Ile
402876	+	tRNA-Ile
4230241	-	tRNA-Ile
4701750	-	tRNA-Ile
4707412	-	tRNA-Ile
978639	+	tRNA-Leu
1527555	-	tRNA-Leu
1529491	-	tRNA-Leu
1529783	-	tRNA-Leu
1806188	-	tRNA-Leu
2887153	+	tRNA-Leu
3298354	-	tRNA-Leu
977555	+	tRNA-Lys
977827	+	tRNA-Lys
3676956	-	tRNA-Lys
4366817	+	tRNA-Met
3241943	+	tRNA-Phe
3242091	+	tRNA-Phe
977033	+	tRNA-Pro
3178852	+	tRNA-Pro
3179069	+	tRNA-Pro
3261156	-	tRNA-Pro
2434185	-	tRNA-Pseudo
3859475	+	tRNA-seC
1052973	+	tRNA-Ser
1084384	-	tRNA-Ser
1852709	+	tRNA-Ser
2974540	-	tRNA-Ser
320365	+	tRNA-Thr
881504	+	tRNA-Thr
1348438	+	tRNA-Thr
882914	+	tRNA-Trp
881281	+	tRNA-Tyr
985410	+	tRNA-Val
1106586	+	tRNA-Val
1629533	+	tRNA-Val
1629706	+	tRNA-Val

3308901	3308901	3308092	3308092 -	trpA
3310802	3310797	3309580	-	trpB
4373596	4373587	4372793	4372755 -	trpC
4374698	4374693	4373662	4373632 -	trpD
4377721	4377622	4376147	4376142 -	trpE
	3322700	3322044	3322042 -	trpF
330081	330090	331385	331385 +	trpS
3323491	3323467	3322697	-	truA
3277120	3277110	3276202	3276171 -	truB
233580	233580	234323	234371 +	truC
	1831143	1832174	1832174 +	truD
2932157	2932081	2930960	2929984 -	trwI
4323930	4324060	4324389	4324418 +	trxA
2345038	2344990	2344019	2344004 -	trxB
1497469	1497356	1496481	1496481 -	tsf
881505	881549	882739	882841 +	tuf
898973	898973	900163	900190 +	tuf2
925027	925003	923156	923156 -	typA
	1982995	1984119	1984201 +	tyrA
393631	393667	394878	394885 +	tyrS
4475890	4475890	4474997	4474926 -	ubiA
	227901	229556	229588 +	ubiB
4091071	4091071	4090310	4090308 -	ubiE
814511	814519	815688	815688 +	ubiF
3208069	3208043	3207327	-	ubiG
813302	813302	814510	814510 +	ubiH
	4319180	4318467	4318465 -	ung
1927533	1927528	1926896	1926838 -	upp
1493174	1493121	1492411	-	uppS
2015569	2015569	2017452	2017529 +	uup
1316650	1316610	1313617	-	uvrA
1627325	1627331	1629355	1629402 +	uvrB
	1642854	1644698	1644698 +	uvrC
4635202	4635202	4633010	4633010 -	uvrD
	3659500	3660066	+	V
644533	644504	641676	641676 -	valS
3444364	3444448	3445545	3445545 +	vdh
2938322	2938313	2937270	2937270 -	virB11
2935462	2935423	2932982	2932982 -	virB4
	2940357	2939578	-	virB9
	1035238	1037223	+	virD4
2944069	2944034	2942355	2942345 -	virD4
	3660063	3660422	+	W
4238765	4238787	4239593	4239628 +	waaE
2036748	2036748	2038661	2038661 +	wbil
2035755	2035755	2036744	2036747 +	wbpL
1806838	1806972	1808258	1808258 +	wbpO
	688745	689920	+	wecB
849362	849362	848769	-	wrbA
607592	607595	610963	610963 +	wxocA
603860	603860	604654	+	wzm
	604644	606065	606100 +	wzt

	3652449	3652664		+	X
	2437217	2436324		-	xdhC
4103950	4103950	4103054	4103049	-	xerC
649759	649759	650736	650736	+	xerD
676794	676803	679010	679011	+	xpsD
668320	668320	670041	670044	+	xpsE
670045	670045	671286	671335	+	xpsF
671336	671336	671779	671785	+	xpsG
671786	671786	672280		+	xpsH
	672277	672696		+	xpsI
	672693	673325		+	xpsJ
	675302	676015		+	xpsM
	676005	676793		+	xpsN
3383471	3383471	3383731		+	xseB
	2563943	2563149		-	xthA2
4658603	4658603	4657836	4657816	-	xthA3
	2498042	2496708		-	xylA
	2496676	2495267		-	xylE
	1886594	1888018		+	xylE2
	2487280	2485586		-	xynB
235056	235056	235487	235489	+	yaeJ
	2439598	2437394		-	yagR
	2440548	2439598		-	yagS
	2441192	2440545		-	yagT
230394	230394	229609	229587	-	yaiO
1996516	1996550	1996894	1996894	+	yajC
3409278	3409278	3410156	3410156	+	ybbN
3403151	3403137	3402727	3402705	-	ybeB
1103357	1103371	1104432		+	yceG
4595706	4595701	4595441		-	ycgL
862692	862704	863795	863795	+	ychF
3155107	3155093	3154794		-	yciL
3433463	3433475	3434836	3434882	+	yegD
3330236	3330225	3329296		-	yfcB
	3774423	3773590	3773590	-	yfiF
1152800	1152742	1152425	1152425	-	yhbH
1141682	1141677	1139890		-	yhgE
	4768261	4766546	4766546	-	yidC
3203382	3203382	3203636	3203636	+	yidD
	328886	329107		+	yjbJ
	3226404	3225922	3225919	-	yjeF
	3108581	3109354	3109364	+	yjjV
3613146	3613146	3611098	3611098	-	yoaA
1141769	1141769	1142335	1142349	+	yqgE
4389662	4389658	4388699	4387783	-	yrbG
4758949			4759066	+	yybP-ykoY
3033937	3033922	3033185	3033179	-	zipA
	2883573	2883971		+	zntR
3135490	3135490	3136299	3137373	+	zupT
1427367	1427401	1427892	1427892	+	zur
1905130	1905130	1903694		-	zwf

Synonym	Product	MBS292
SMD_0005	hypothetical protein	91
SMD_0006	Zn-dependent protease with chaperone function	123
SMD_0007	TPR domain-containing protein	866
SMD_0008	Ferric siderophore transport system, periplasmic binding protein	701
SMD_0013	hypothetical protein	40
SMD_0015	radical SAM protein	145
SMD_0016	hypothetical protein	74
SMD_0019	tonB-dependent receptor yncD precursor	15
SMD_0020	hypothetical protein	9
SMD_0021	hypothetical protein	8
SMD_0023	ATP-dependent DNA ligase	7
SMD_0024	hypothetical protein	143
SMD_0025	alcohol dehydrogenase	4682
SMD_0027	cysteine dioxygenase type I	37
SMD_0028	LacI family transcriptional regulator	111
SMD_0030	AsnC family transcriptional regulator	116
SMD_0031	Serine protease	64
SMD_0032	hypothetical protein	34
SMD_0033	TonB-dependent receptor	99
SMD_0034	Nonspecific acid phosphatase precursor	84
SMD_0035	hypothetical protein	2
SMD_0036	hypothetical protein	3
SMD_0037	ABC transporter ATP-binding protein	25
SMD_0038	Fatty acid desaturase	30
SMD_0039	hypothetical protein	18
SMD_0040	hypothetical protein	73
SMD_0044	hypothetical protein	25
SMD_0045	Sel1-like repeat	46
SMD_0047	hypothetical protein	10
SMD_0049	wall associated protein	21
SMD_0050	wall associated protein	30
SMD_0051	acetyltransferase	31
SMD_0055	trypsin	11
SMD_0056	hypothetical protein	7
SMD_0058	tRNA(Cytosine32)-2-thiocytidine synthetase	105
SMD_0060	zinc metalloprotease	77
SMD_0061	methylglyoxal synthase	49
SMD_0062	hypothetical protein	4
SMD_0065	hypothetical protein	124
SMD_0066	DNA topoisomerase IB (poxvirus type)	2
SMD_0067	hypothetical protein	9
SMD_0068	short-chain dehydrogenase	2
SMD_0069	hypothetical protein	39
SMD_0071	transcriptional repressor, Blal/MecI family	18
SMD_0073	hypothetical protein	15
SMD_0074	hypothetical protein	23
SMD_0076	hypothetical protein	46
SMD_0077	hypothetical protein	69
SMD_0078	hypothetical protein	20
SMD_0079	hypothetical protein	16
SMD_0080	hypothetical protein	19

SMD_0081	hypothetical protein	38
SMD_0082	moxR family ATPase	31
SMD_0083	hypothetical protein	42
SMD_0084	TldE/PmbA family protein, Actinobacterial subgroup	74
SMD_0085	TldD family protein, Actinobacterial subgroup	81
SMD_0086	TldD family protein, Actinobacterial subgroup	47
SMD_0087	SAM-dependent methyltransferase	30
SMD_0088	indolepyruvate ferredoxin oxidoreductase subunits alpha and beta	106
SMD_0089	hypothetical protein	47
SMD_0090	AAA ATPase	37
SMD_0091	partition protein	76
SMD_0093	hypothetical protein	41
SMD_0094	cardiolipin synthase	59
SMD_0095	ComA operon protein 2	90
SMD_0097	hypothetical protein	57
SMD_0099	phospholipid-binding protein	159
SMD_0101	hypothetical protein	308
SMD_0102	undecaprenyl-diphosphatase	55
SMD_0109	ISStmaD3 transposase B	1
SMD_0110	ISStmaD3 transposase A	2
SMD_0117	hypothetical protein	128
SMD_0118	3-ketoacyl-CoA thiolase	87
SMD_0119	Homolog of E. coli HemY protein	54
SMD_0120	hypothetical protein	59
SMD_0122	Histone acetyltransferase HPA2 and related acetyltransferases	137
SMD_0123	hypothetical protein	212
SMD_0124	Rhodanese-related sulfurtransferase	435
SMD_0128	hypothetical protein	46
SMD_0129	hypothetical protein	16
SMD_0131	arsenical-resistance protein ACR3	9
SMD_0135	hypothetical protein	49
SMD_0136	hypothetical protein	103
SMD_0137	hypothetical protein	891
SMD_0138	membrane-bound lytic murein transglycosylase	16
SMD_0139	ISStmaD1 Transposase B	21
SMD_0140	ISStmaD1 Transposase A	29
SMD_0145	hypothetical protein	17
SMD_0146	hypothetical protein	12
SMD_0150	hypothetical protein	7
SMD_0152	hypothetical protein	70
SMD_0153	hypothetical protein	1324
SMD_0154	AraC family transcriptional regulator	47
SMD_0155	glyoxalase	15
SMD_0156	Aspartate aminotransferase	104
SMD_0157	hypothetical protein	19
SMD_0159	ferrichrome-iron receptor	12
SMD_0160	homoserine kinase type II, PnuC-associated, THI-regulated branch	32
SMD_0161	hypothetical protein	127
SMD_0163	hypothetical protein	35
SMD_0164	ISStmaD2 Transposase B	86
SMD_0165	ISStmaD2 Transposase A	40
SMD_0166	LuxR family two component transcriptional regulator	58

SMD_0167	hypothetical protein	15
SMD_0168	cytochrome C	40
SMD_0169	electron transfer flavoprotein-ubiquinone oxidoreductase	77
SMD_0172	hypothetical protein	23
SMD_0173	zinc protease	64
SMD_0174	hypothetical protein	183
SMD_0177	Ferredoxin	43
SMD_0178	acyl-CoA synthetase (AMP-forming)/AMP-acid ligase/Peptide synt	87
SMD_0179	3-beta hydroxysteroid dehydrogenase/isomerase family protein ir	58
SMD_0181	protein YigP	152
SMD_0184	glucose-1-phosphate thymidylyltransferase	4
SMD_0185	glycosyltransferase	3
SMD_0186	hypothetical protein	5
SMD_0187	O-methyltransferase	43
SMD_0189	hypothetical protein	59
SMD_0191	acyltransferase	106
SMD_0193	3-dehydroquinate dehydratase	3
SMD_0194	hypothetical protein	7
SMD_0196	major facilitator superfamily permease	11
SMD_0197	LysR family transcriptional regulator YnfL	27
SMD_0198	LysR family transcriptional regulator	12
SMD_0201	cAMP-binding proteins-catabolite gene activator and regulatory si	36
SMD_0202	adenylate cyclase	42
SMD_0203	hypothetical protein	118
SMD_0204	NADH oxidase	54
SMD_0205	methylcrotonyl-CoA carboxylase biotin-containing subunit	232
SMD_0206	methylcrotonyl-CoA carboxylase carboxyl transferase subunit	227
SMD_0208	transcriptional regulator LiuX of leucine degradation pathway, Acr	31
SMD_0209	cytochrome C5	48
SMD_0210	nuclease	40
SMD_0211	integral membrane protein	30
SMD_0212	alpha/beta hydrolase	235
SMD_0213	ATPase	123
SMD_0214	hypothetical protein	70
SMD_0217	Threonine efflux protein	53
SMD_0218	acyl-CoA hydrolase	54
SMD_0219	NAD-dependent protein deacetylase	47
SMD_0220	FMN oxidoreductase	61
SMD_0221	LysR family transcriptional regulator	39
SMD_0224	hypothetical protein	67
SMD_0225	nicotinamide phosphoribosyltransferase	25
SMD_0226	nicotinamide-nucleotide adenylyltransferase,NadM family	121
SMD_0227	RpoH suppressor	48
SMD_0228	transcriptional regulator	23
SMD_0229	methylmalonate-semialdehyde dehydrogenase	706
SMD_0230	branched-chain acyl-CoA dehydrogenase	602
SMD_0231	enoyl-CoA hydratase	247
SMD_0232	3-hydroxyisobutyryl-CoA hydrolase	205
SMD_0235	Cobalt-zinc-cadmium resistance protein	41
SMD_0236	hypothetical protein	427
SMD_0237	hypothetical protein	390
SMD_0238	phage protein	403

SMD_0239	hypothetical protein	817
SMD_0240	hypothetical protein	695
SMD_0241	phage protein	284
SMD_0242	minor tail protein	238
SMD_0243	hypothetical protein	163
SMD_0244	deduced tail fiber protein	143
SMD_0245	deduced tail fiber protein	95
SMD_0246	hypothetical protein	92
SMD_0247	mu-like phage tail fiber protein	124
SMD_0248	carbohydrate-binding, CenC-like	97
SMD_0249	phage minor tail protein	92
SMD_0250	phage tail assembly protein	86
SMD_0251	phage tail assembly protein I	108
SMD_0252	phage tail fiber protein	97
SMD_0253	hypothetical protein	114
SMD_0254	hypothetical protein	99
SMD_0255	sulfate permease	50
SMD_0256	hypothetical protein	78
SMD_0257	hypothetical protein	240
SMD_0258	carboxypeptidase	158
SMD_0260	hypothetical protein	368
SMD_0261	DNA-binding response regulator	446
SMD_0263	inner membrane protein	87
SMD_0264	hypothetical protein	155
SMD_0267	hypothetical protein	37
SMD_0269	ISStmaD1 Transposase B	16
SMD_0270	ISStmaD1 Transposase A	33
SMD_0271	hypothetical protein	36
SMD_0272	transcriptional regulator	24
SMD_0273	hypothetical protein	9
SMD_0275	hypothetical protein	11
SMD_0279	hypothetical protein	8
SMD_0281	transmembrane protein	83
SMD_0282	beta-lactamase related protein	83
SMD_0283	peptidase	127
SMD_0284	hypothetical protein	46
SMD_0285	dicarboxylate transport protein	31
SMD_0286	drug/metabolite transporter permease	49
SMD_0288	TonB-dependent receptor	618
SMD_0289	ABC-type antimicrobial peptide transport system,permease comp	12
SMD_0290	ABC-type antimicrobial peptide transport system,permease comp	8
SMD_0291	methionine ABC transporter ATP-binding protein	5
SMD_0292	acriflavin resistance protein	8
SMD_0293	two-component sensor histidine kinase	15
SMD_0294	two-component system regulatory protein	17
SMD_0295	cytochrome B561	23
SMD_0297	peptidase B	242
SMD_0298	hydrolase	217
SMD_0299	hypothetical protein	61
SMD_0300	transporter	32
SMD_0301	hypothetical protein	84
SMD_0302	hypothetical protein	145

SMD_0303	hypothetical protein	213
SMD_0304	Trypsin-like serine proteases, typically periplasmic, contain C-ter	113
SMD_0305	histone protein	494
SMD_0306	hypothetical protein	20
SMD_0307	hypothetical protein	7
SMD_0308	hypothetical protein	7
SMD_0309	hypothetical protein	6849
SMD_0310	LuxR family two component transcriptional regulator	210
SMD_0311	hypothetical protein	212
SMD_0312	hypothetical protein	26
SMD_0313	MFS permease protein	21
SMD_0314	LysR family transcriptional regulator	47
SMD_0315	hypothetical protein	133
SMD_0316	Oxidoreductase	83
SMD_0317	cell division protein	155
SMD_0320	LuxR family two component transcriptional regulator	3
SMD_0329	hypothetical protein	337
SMD_0333	hypothetical protein	52
SMD_0334	anhydro-N-acetylmuramic acid kinase	44
SMD_0335	membrane proteins related to metalloendopeptidases	142
SMD_0348	peptidase	119
SMD_0349	hypothetical protein	95
SMD_0350	membrane-bound metallopeptidase	87
SMD_0352	hypothetical protein	28
SMD_0357	hypothetical protein	181
SMD_0360	hypothetical protein	5
SMD_0361	cytochrome oxidase biogenesis protein Cox11-CtaG, copper deliv	10
SMD_0362	cytochrome c oxidase polypeptide III	7
SMD_0363	hypothetical protein	17
SMD_0364	cytochrome oxidase biogenesis protein Surf1, facilitates heme A ir	2
SMD_0365	hypothetical protein	96
SMD_0366	heme A synthase, cytochrome oxidase biogenesis protein Cox15-	119
SMD_0368	hypothetical protein	42
SMD_0369	Sodium/bile acid symporter family	33
SMD_0370	hypothetical protein	16
SMD_0372	ribonuclease BN	37
SMD_0373	transamidase GatB domain-containing protein	226
SMD_0376	TIORF34 protein	61
SMD_0378	Small-conductance mechanosensitive channel	81
SMD_0380	hypothetical protein	31
SMD_0381	PQQ-dependent oxidoreductase, gdhB family	31
SMD_0382	membrane protein	79
SMD_0383	hypothetical protein	31
SMD_0384	amino acid permease	14
SMD_0385	hypothetical protein	32
SMD_0386	transcriptional regulator	36
SMD_0387	chloromuconate cycloisomerase	25
SMD_0388	hypothetical protein	29
SMD_0389	hypothetical protein	7
SMD_0390	Oar protein	6
SMD_0391	beta-lactamase	8
SMD_0392	D-alanyl-D-alanine dipeptidase	12

SMD_0393	hypothetical protein	35
SMD_0394	hypothetical protein	27
SMD_0395	Hydrolase, haloacid dehalogenase-like family	235
SMD_0396	hypothetical protein	107
SMD_0397	hypothetical protein	45
SMD_0398	CoA transferase	147
SMD_0400	preQ0 transporter	43
SMD_0401	hypothetical protein	25
SMD_0402	hypothetical protein	32
SMD_0403	outer membrane protein	32
SMD_0404	hypothetical protein	45
SMD_0405	hypothetical protein	28
SMD_0406	nitroreductase	36
SMD_0407	hypothetical protein	107
SMD_0408	hypothetical protein	34
SMD_0409	hypothetical protein	51
SMD_0410	iron-chelator utilization protein	31
SMD_0411	PadR family transcriptional regulator	18
SMD_0413	hypothetical protein	16
SMD_0415	hypothetical protein	3
SMD_0416	hypothetical protein	39
SMD_0417	lytic enzyme	39
SMD_0418	hemolysin related protein	26
SMD_0419	hypothetical protein	26
SMD_0420	hypothetical protein	34
SMD_0421	hypothetical protein	12
SMD_0422	hypothetical protein	25
SMD_0423	hypothetical protein	34
SMD_0424	hypothetical protein	100
SMD_0425	hypothetical protein	3
SMD_0426	Non-heme chloroperoxidase	3
SMD_0427	hypothetical protein	29
SMD_0428	hypothetical protein	24
SMD_0429	hypothetical protein	11
SMD_0430	polysaccharide deacetylase	24
SMD_0431	hypothetical protein	37
SMD_0432	ISStmaD4 Transposase	10
SMD_0433	hypothetical protein	3
SMD_0434	hypothetical protein	9
SMD_0435	Cobalt-zinc-cadmium resistance protein CzcD	10
SMD_0436	hypothetical protein	10
SMD_0437	metal chaperone, involved in Zn homeostasis, GTPase of COG052	4
SMD_0438	ISStmaD4 Transposase	14
SMD_0439	ABC transporter ATP-binding protein	13
SMD_0440	LysR family transcriptional regulator	10
SMD_0441	beta-lactamase class C and other penicillin binding proteins	2
SMD_0442	major facilitator family transporter	1
SMD_0443	hypothetical protein	2
SMD_0444	D-serine/D-alanine/glycine transporter	21
SMD_0445	Lytic transglycosylase	32
SMD_0446	hypothetical protein	46
SMD_0447	NHL repeat protein	30

SMD_0448	phnB protein	32
SMD_0449	phnB protein	1
SMD_0451	glyoxalase	7
SMD_0452	hypothetical protein	10
SMD_0453	ECF subfamily RNA polymerase sigma-70 factor	19
SMD_0454	hypothetical protein	134
SMD_0455	hypothetical protein	173
SMD_0456	hypothetical protein	511
SMD_0457	hypothetical protein	248
SMD_0458	aminopeptidases	69
SMD_0459	autolysin sensor kinase	14
SMD_0460	transcriptional regulator	13
SMD_0461	hypothetical protein	7
SMD_0462	hypothetical protein	9
SMD_0463	hypothetical protein	30
SMD_0464	TetR family transcriptional regulator	23
SMD_0465	transporter	3
SMD_0466	hypothetical protein	3
SMD_0467	metallopeptidase	129
SMD_0468	Sensory box/GGDEF family protein	24
SMD_0469	LysR family transcriptional regulator	15
SMD_0470	hypothetical protein	4
SMD_0471	hypothetical protein	3
SMD_0472	Na /H antiporter	55
SMD_0473	hypothetical protein	204
SMD_0474	hypothetical protein	137
SMD_0475	hypothetical protein	110
SMD_0476	hypothetical protein	518
SMD_0480	hypothetical protein	41
SMD_0481	hypothetical protein	23
SMD_0484	alanine racemase	230
SMD_0485	hypothetical protein	143
SMD_0486	Sensor histidine kinase	64
SMD_0487	hypothetical protein	23
SMD_0488	hypothetical protein	12
SMD_0491	hydrolase	149
SMD_0495	metallo-beta-lactamase superfamily protein PA0057	10
SMD_0496	Rrf2-linked NADH-flavin reductase	10
SMD_0497	LysR-family transcriptional regulator clustered with PA0057	43
SMD_0498	methyltransferase	111
SMD_0500	Outer membrane vitamin B12 receptor BtuB	94
SMD_0501	alpha-ribazole-5'-phosphate phosphatase	123
SMD_0502	TfoX C-terminal domain superfamily	126
SMD_0503	GAF domain-containing proteins	199
SMD_0504	Valine--pyruvate aminotransferase	29
SMD_0506	dipZ protein	1
SMD_0508	two-component response regulator	19
SMD_0509	Osmosensitive K channel histidine kinase KdpD	26
SMD_0510	hypothetical protein	57
SMD_0512	asparagine synthetase	224
SMD_0513	hypothetical protein	47
SMD_0515	TonB-dependent receptor	6

SMD_0516	Secreted protein containing N-terminal Zinc-dependent carboxypeptidase	6
SMD_0518	inosine-uridine preferring nucleoside hydrolase	8
SMD_0519	fumarylacetoacetate hydrolase family protein	164
SMD_0520	maleylacetoacetate isomerase	116
SMD_0521	Domain often clustered or fused with uracil-DNA glycosylase / Uracil-DNA glycosylase	22
SMD_0522	biotin synthase related domain containing protein	53
SMD_0523	type II secretion system protein-like protein	24
SMD_0524	outer membrane protein	172
SMD_0525	outer membrane protein	154
SMD_0526	hypothetical protein	139
SMD_0531	glycosyltransferase	440
SMD_0533	UDP-glucose 4-epimerase	402
SMD_0534	hypothetical protein	177
SMD_0535	glycosyltransferase	412
SMD_0537	ISStmaD3 transposase B	5
SMD_0538	ISStmaD3 transposase A	4
SMD_0540	ISStmaD1 Transposase A	25
SMD_0541	acyltransferase 3	165
SMD_0552	alkylated DNA repair protein AlkB	74
SMD_0553	membrane lipoprotein lipid attachment site containing protein US	53
SMD_0554	ABC-type transport system involved in resistance to organic solvents	47
SMD_0555	ABC transporter ATP-binding protein USSDB6B	52
SMD_0556	ABC-type transport system involved in resistance to organic solvents	79
SMD_0557	integral membrane protein	46
SMD_0560	hypothetical protein	167
SMD_0561	hypothetical protein	146
SMD_0563	hypothetical protein	70
SMD_0565	integral membrane protein	21
SMD_0567	hypothetical protein	101
SMD_0570	permease	89
SMD_0571	permease	93
SMD_0572	hypothetical protein	40
SMD_0577	outer membrane protein	2
SMD_0578	outer membrane protein	2
SMD_0579	protease	5
SMD_0591	glycosyltransferase	16
SMD_0592	glycosyl transferase	84
SMD_0594	hypothetical protein	124
SMD_0596	pili assembly chaperone: Bacterial pili assembly chaperone	569
SMD_0598	fimbrial adhesin	304
SMD_0600	hypothetical protein	6
SMD_0602	FOG: TPR repeat	5
SMD_0603	hypothetical protein	14
SMD_0604	xanthine/uracil/thiamine/ascorbate permease family protein	61
SMD_0605	ABC transporter ATP-binding protein	341
SMD_0606	hypothetical protein	143
SMD_0608	hypothetical protein	107
SMD_0609	hypothetical protein	40
SMD_0612	hypothetical protein	74
SMD_0613	hypothetical protein	111
SMD_0614	hypothetical protein	139
SMD_0620	integral membrane protein	14

SMD_0621	hypothetical protein	4
SMD_0623	autotransporter	12
SMD_0624	ATP-binding component of a transport system and adhesin protei	3
SMD_0625	O-antigen acetylase	5
SMD_0627	membrane-bound metal-dependent hydrolases	33
SMD_0628	endonuclease distantly related to archaeal Holliday junction resol	56
SMD_0629	LppC putative lipoprotein	116
SMD_0630	rRNA small subunit methyltransferase I	65
SMD_0631	ISStmaD4 Transposase	24
SMD_0633	phenylalanyl-tRNA synthetase subunit beta	50
SMD_0634	hypothetical protein	25
SMD_0650	peptidase	127
SMD_0653	hypothetical protein	31
SMD_0655	alpha/beta hydrolase	5
SMD_0656	autolysin sensor kinase	16
SMD_0657	two-component response regulator	10
SMD_0658	hypothetical protein	77
SMD_0659	TonB family protein	52
SMD_0660	hypothetical protein	31
SMD_0661	YbaK family protein	53
SMD_0662	carboxypeptidase	24
SMD_0663	hypothetical protein	40
SMD_0665	dipeptidyl aminopeptidases/acylaminoacyl-peptidases	82
SMD_0667	cytosolic long-chain acyl-CoA thioester hydrolase family protein	87
SMD_0669	hemolysin	1
SMD_0670	Ser/Thr protein phosphatase family protein,UDP-2,3-diacylglycos	2
SMD_0671	YhfP protein	28
SMD_0672	methyltransferase	65
SMD_0674	hypothetical protein	41
SMD_0676	nucleoside permease NupC	123
SMD_0677	Voltage-gated potassium channel beta subunit	56
SMD_0678	hemin uptake protein	35
SMD_0680	hemin transport protein	10
SMD_0681	hypothetical protein	21
SMD_0682	ABC transporter permease	10
SMD_0684	Response regulators consisting of a CheY-like receiver domain an	182
SMD_0685	two-component system sensor protein	35
SMD_0686	hypothetical protein	58
SMD_0688	integral membrane protein TerC	162
SMD_0689	drug efflux protein	5
SMD_0691	hypothetical protein	19
SMD_0692	hypothetical protein	20
SMD_0696	hypothetical protein	54
SMD_0698	ApaG protein	177
SMD_0703	acetoin utilization family protein	53
SMD_0704	Cob(I)alamin adenosyltransferase PduO	71
SMD_0705	Optional hypothetical component of the B12 transporter BtuM	169
SMD_0708	hypothetical protein	67
SMD_0709	Putative RNA 2'-O-ribose methyltransferase mtfA	80
SMD_0710	cytidine and deoxycytidylate deaminase family protein	94
SMD_0711	hypothetical protein	28
SMD_0712	hypothetical protein	73

SMD_0714	hypothetical protein	120
SMD_0725	Regulatory protein, LysR:LysR,substrate-binding	12
SMD_0726	MFS transporter	11
SMD_0727	hypothetical protein	71
SMD_0730	nitroreductase	118
SMD_0731	thymidine phosphorylase	113
SMD_0733	hypothetical protein	33
SMD_0734	hypothetical protein	14
SMD_0735	ECF sigma factor	12
SMD_0738	hypothetical protein	40
SMD_0739	hypothetical protein	244
SMD_0742	L-asparaginase	211
SMD_0743	hypothetical protein	37
SMD_0745	ribonuclease BN	49
SMD_0746	Thioredoxin	91
SMD_0747	transcriptional regulator	38
SMD_0748	glycosyl transferases group 1:TPR repeat	46
SMD_0751	hypothetical protein	110
SMD_0752	Outer membrane lipoprotein LolB precursor	150
SMD_0759	hypothetical protein	5
SMD_0760	LuxR family two component transcriptional regulator	6
SMD_0761	Signal transduction histidine kinase	9
SMD_0762	Sensory box/GGDEF family protein	3
SMD_0763	Signal transduction histidine kinase	1
SMD_0764	TonB-dependent receptor	17
SMD_0765	cyanophycinase	29
SMD_0766	Isoaspartyl aminopeptidase	26
SMD_0772	preprotein translocase subunit SecE (TC 3.A.5.1.1)	1303
SMD_0812	Colicin I receptor	36
SMD_0814	membrane protein	7
SMD_0815	amidotransferase-related protein	33
SMD_0816	hypothetical protein	205
SMD_0822	proline-rich protein	19
SMD_0823	hypothetical protein	64
SMD_0825	hypothetical protein	64
SMD_0827	hypothetical protein	8
SMD_0828	bifunctional protein: zinc-containing alcohol dehydrogenase quinc	35
SMD_0829	outer membrane protein	8796
SMD_0830	hypothetical protein	214
SMD_0832	hypothetical protein	214
SMD_0834	hypothetical protein	179
SMD_0836	hypothetical protein	183
SMD_0837	phosphoglycerate mutase	103
SMD_0839	DedD protein	134
SMD_0840	colicin V production protein	110
SMD_0842	hypothetical protein	68
SMD_0843	hypothetical protein	16
SMD_0844	peptidyl-Asp metalloendopeptidase	37
SMD_0846	hypothetical protein	5
SMD_0848	TonB-dependent receptor	57
SMD_0853	protease	51
SMD_0855	hypothetical protein	85

SMD_0856	Isocitrate dehydrogenase [NAD]	621
SMD_0857	isochorismatase	3
SMD_0858	hypothetical protein	26
SMD_0859	hypothetical protein	20
SMD_0860	nitrilotriacetate monooxygenase component B	15
SMD_0861	hypothetical protein	203
SMD_0867	hypothetical protein	12
SMD_0880	integrase	21
SMD_0881	hypothetical protein	138
SMD_0882	DNA-binding protein	97
SMD_0883	hypothetical protein	113
SMD_0884	hypothetical protein	96
SMD_0885	hypothetical protein	149
SMD_0886	hypothetical protein	60
SMD_0887	hypothetical protein	72
SMD_0888	hypothetical protein	10
SMD_0889	hypothetical protein	0
SMD_0890	plasmid stabilization protein	1
SMD_0891	hypothetical protein	3
SMD_0892	y4eB gene in pNGR234a	27
SMD_0893	transcriptional regulator, PbsX family	149
SMD_0894	lipoprotein	6
SMD_0895	hypothetical protein	1
SMD_0896	hypothetical protein	2
SMD_0897	Plasmid replication initiator protein	6
SMD_0898	chromosome (plasmid) partitioning protein ParA	0
SMD_0899	hypothetical protein	0
SMD_0900	glycosidases	1
SMD_0901	type IV secretory pathway, protease TraF	0
SMD_0902	type IV secretory pathway, VirD2 components (relaxase)	2
SMD_0903	sensor signal transduction histidine kinase	13
SMD_0905	PE-PGRS FAMILY PROTEIN	3
SMD_0906	hypothetical protein	2
SMD_0907	hypothetical protein	2
SMD_0908	hypothetical protein	2
SMD_0912	RND efflux membrane fusion protein	1
SMD_0913	two component transcriptional regulator, winged helix family	38
SMD_0914	sensory histidine kinase in two-component regulatory system with	26
SMD_0915	hypothetical protein	11
SMD_0916	outer membrane protein CC_0351 precursor	5
SMD_0918	LysR family transcriptional regulator	1
SMD_0919	lipoprotein	3
SMD_0921	CopG domain-containing protein	0
SMD_0927	lipoprotein	1
SMD_0932	hypothetical protein	1
SMD_0935	SAM-dependent methyltransferase	161
SMD_0938	protein phosphatase	65
SMD_0940	hypothetical protein	235
SMD_0941	ADP-heptose--lipooligosaccharide heptosyltransferase II	112
SMD_0942	3-deoxy-D-manno-octulosonic acid kinase	152
SMD_0943	hypothetical protein	115
SMD_0944	hypothetical protein	38

SMD_0947	autotransporter protein	3
SMD_0948	hypothetical protein	5
SMD_0949	hypothetical protein	1
SMD_0950	type II/IV secretion system protein TadC, associated with Flp pilus	6
SMD_0951	type II secretion system protein	8
SMD_0952	type II/IV secretion system ATP hydrolase TadA/VirB11/CpaF, Ta	3
SMD_0953	type II/IV secretion system secretin RcpA/CpaC, associated with F	3
SMD_0954	SAF domain	4
SMD_0955	hypothetical protein	0
SMD_0956	hypothetical protein	1
SMD_0957	hypothetical protein	0
SMD_0958	hypothetical protein	3
SMD_0959	hypothetical protein	0
SMD_0960	hypothetical protein	7
SMD_0961	OmpA domain-containing protein	92
SMD_0962	hypothetical protein	26
SMD_0965	hypothetical protein	339
SMD_0967	bis(5'-nucleosyl)-tetrphosphatase	59
SMD_0968	Starvation lipoprotein Slp	175
SMD_0969	transglutaminase-like enzymes, putative cysteine proteases	18
SMD_0970	hypothetical protein	23
SMD_0971	moxR-like ATPase	53
SMD_0972	4-amino-4-deoxy-L-arabinose transferase and related glycosyltra	56
SMD_0973	Septum formation protein Maf	40
SMD_0974	COG1399 protein, clustered with ribosomal protein L32p	531
SMD_0977	Mn2-dependent serine/threonine protein kinase	182
SMD_0982	Para-aminobenzoate synthase, aminase component	44
SMD_0988	hypothetical protein	1
SMD_0990	hypothetical protein	26
SMD_0991	hypothetical protein	37
SMD_0992	hypothetical protein	50
SMD_0993	hypothetical protein	86
SMD_0994	Outer membrane vitamin B12 receptor BtuB	16
SMD_0995	Optional hypothetical component of the B12 transporter BtuN	23
SMD_0999	hypothetical protein	38
SMD_1000	GntR family transcriptional regulator domain / Aspartate aminotra	16
SMD_1001	drug/metabolite transporter permease	6
SMD_1002	LysR family transcriptional regulator	60
SMD_1003	major facilitator superfamily permease	2
SMD_1004	Gfa-like protein	23
SMD_1005	hypothetical protein	41
SMD_1006	hypothetical protein	38
SMD_1007	MFS transporter	14
SMD_1009	short chain dehydrogenase	5
SMD_1010	LysR family transcriptional regulator	25
SMD_1012	hypothetical protein	65
SMD_1015	aldo-keto reductase	30
SMD_1016	transcriptional regulator lysR family	24
SMD_1017	hypothetical protein	4
SMD_1018	transporter	59
SMD_1022	Holliday junction resolvase	77
SMD_1024	hypothetical protein	41

SMD_1025	hypothetical protein	17
SMD_1029	PTS system mannose-specific transporter subunit IIA	398
SMD_1030	ATP-binding protein	55
SMD_1031	HPr kinase/phosphorylase	45
SMD_1032	PTS system nitrogen-specific transporter subunit transporter subu	80
SMD_1036	LptA, protein essential for LPS transport across the periplasm	131
SMD_1037	hypothetical protein	74
SMD_1040	YrbA protein	227
SMD_1042	hypothetical protein	155
SMD_1043	hypothetical protein	78
SMD_1044	hypothetical protein	61
SMD_1046	hypothetical protein	41
SMD_1047	hypothetical protein	48
SMD_1048	major facilitator superfamily permease	138
SMD_1050	hypothetical protein	94
SMD_1051	permease often clustered with de novo purine synthesis	125
SMD_1052	DnaA-like protein	97
SMD_1053	nucleotidyl transferase	55
SMD_1054	phosphotransferase related to Ser/Thr protein kinases	57
SMD_1055	hypothetical protein	113
SMD_1056	succinyl-diaminopimelate desuccinylase	301
SMD_1057	DNA uptake protein	3443
SMD_1058	hypothetical protein	21
SMD_1059	hypothetical protein	38
SMD_1060	hypothetical protein	60
SMD_1061	oxidoreductase	40
SMD_1063	hypothetical protein	102
SMD_1064	hypothetical protein	81
SMD_1065	hypothetical protein	26
SMD_1067	hypothetical protein	7
SMD_1069	FOG: TPR repeat, SEL1 subfamily	36
SMD_1070	ferrichrome-iron receptor	157
SMD_1071	hypothetical protein	33
SMD_1072	benzene 1,2-dioxygenase, ferredoxin protein	90
SMD_1073	acetyltransferase	98
SMD_1074	hypothetical protein	8
SMD_1075	cysteine desulfurase	77
SMD_1079	Iron-sulfur cluster regulator IscR	41
SMD_1080	proteins containing SET domain	131
SMD_1081	ThiJ/Pfpl family protein	38
SMD_1082	hypothetical protein	52
SMD_1083	hypothetical protein	6
SMD_1084	hypothetical protein	36
SMD_1085	histone-like protein	1571
SMD_1090	hypothetical protein	176
SMD_1092	hypothetical protein	44
SMD_1093	protein involved in beta-1,3-glucan synthesis	78
SMD_1094	hypothetical protein	63
SMD_1095	dienelactone hydrolase family protein	19
SMD_1098	TonB-dependent receptor	5
SMD_1099	maltodextrin glucosidase	1
SMD_1100	Six-hairpin glycosidase-like protein	4

SMD_1101	maltose transporter MalT	5
SMD_1103	hypothetical protein	63
SMD_1104	hypothetical protein	26
SMD_1105	hypothetical protein	6
SMD_1106	ABC transporter ATP-binding protein	12
SMD_1107	transcriptional regulator of maltose utilization, LacI family	28
SMD_1110	glucose-methanol-choline (GMC) oxidoreductase:NAD binding site	4
SMD_1111	hypothetical protein	7
SMD_1112	multi-domain-containing protein	4
SMD_1113	hypothetical protein	8
SMD_1114	sugar phosphate isomerases/epimerases	9
SMD_1115	oxidoreductase domain-containing protein	7
SMD_1116	nucleoside permease NupG	4
SMD_1117	inosose isomerase	15
SMD_1120	hypothetical protein	35
SMD_1121	hypothetical protein	13
SMD_1122	hypothetical protein	5
SMD_1123	hypothetical protein	0
SMD_1124	general stress protein	9
SMD_1125	hypothetical protein	7
SMD_1126	ArsR family transcriptional regulator	11
SMD_1127	hypothetical protein	18
SMD_1128	hypothetical protein	27
SMD_1129	transcriptional regulator	18
SMD_1130	hypothetical protein	33
SMD_1131	phosphoesterase	48
SMD_1132	inner membrane protein	8
SMD_1133	hypothetical protein	2
SMD_1134	hypothetical protein	0
SMD_1135	hypothetical protein	2
SMD_1136	DoxX family protein	1
SMD_1137	signal peptide protein	1
SMD_1138	Thiol-disulfide isomerase and thioredoxins	4
SMD_1139	transcriptional regulatory protein ompR	15
SMD_1140	sensor histidine kinase	13
SMD_1141	hypothetical protein	26
SMD_1142	L-Proline/Glycine betaine transporter ProP	17
SMD_1143	inosine-uridine preferring nucleoside hydrolase	108
SMD_1144	hypothetical protein	34
SMD_1145	regulator PutR for proline utilization, GntR family	55
SMD_1146	dicarboxylate carrier protein	2
SMD_1147	malonyl CoA acyl carrier protein transacylase	3
SMD_1149	Phosphoribosyl-dephospho-CoA transferase	7
SMD_1150	malonate decarboxylase subunit gamma	11
SMD_1151	malonate decarboxylase subunit beta	18
SMD_1152	malonate decarboxylase delta subunit	10
SMD_1153	malonate decarboxylase subunit alpha	21
SMD_1154	OMR family iron-siderophore receptor precursor	6
SMD_1156	Histone acetyltransferase HPA2 and related acetyltransferases	32
SMD_1157	LysR family transcriptional regulator	7
SMD_1158	LysE family transporter	252
SMD_1159	prolyl oligopeptidase family protein	75

SMD_1160	di-/tripeptide transporter	63
SMD_1161	hypothetical protein	8
SMD_1162	Oligopeptide transporter	122
SMD_1163	alanyl dipeptidyl peptidase	177
SMD_1164	hypothetical protein	43
SMD_1165	hypothetical protein	223
SMD_1169	hypothetical protein	300
SMD_1170	two-component system sensor protein	25
SMD_1171	two-component system regulatory protein	62
SMD_1172	hypothetical protein	1132
SMD_1173	transmembrane protein	46
SMD_1174	D-alanyl-D-alanine carboxypeptidase	60
SMD_1175	hypothetical protein	15
SMD_1176	hypothetical protein	27
SMD_1177	hypothetical protein	36
SMD_1178	integral membrane protein	13
SMD_1180	succinyl-CoA synthetase subunit alpha	83
SMD_1182	hypothetical protein	19
SMD_1183	RNA polymerase sigma factor	14
SMD_1184	Pathogenicity-related protein	63
SMD_1186	enoyl-CoA hydratase	28
SMD_1187	Copper metallochaperone, bacterial analog of Cox17 protein	43
SMD_1188	enolase	148
SMD_1189	4-hydroxybenzoyl-CoA thioesterase	218
SMD_1200	PDZ domain family protein	36
SMD_1201	hypothetical protein	32
SMD_1202	hypothetical protein	46
SMD_1203	hypothetical protein	43
SMD_1204	TonB-dependent receptor	17
SMD_1205	transmembrane sensor	48
SMD_1206	ECF subfamily RNA polymerase sigma-70 factor	49
SMD_1207	autotransporter	9
SMD_1209	wall associated protein	9
SMD_1211	hypothetical protein	40
SMD_1212	hypothetical protein	27
SMD_1217	integral membrane sensor domain	16
SMD_1220	FOG: TPR repeat	135
SMD_1221	hypothetical protein	87
SMD_1222	CcsA-like protein	61
SMD_1224	2-nitropropane dioxygenase	20
SMD_1225	Aminodeoxychorismate lyase	16
SMD_1230	hypothetical protein	69
SMD_1231	hypothetical protein	32
SMD_1232	hypothetical protein	21
SMD_1233	Na-driven multidrug efflux pump	12
SMD_1234	hypothetical protein	84
SMD_1236	hypothetical protein	55
SMD_1239	hypothetical protein	40
SMD_1240	methyl-accepting chemotaxis protein I (serine chemoreceptor prc	7
SMD_1241	hypothetical protein	43
SMD_1242	multidrug ABC transporter permease	26
SMD_1243	multidrug ABC transporter permease	25

SMD_1244	HlyD family secretion protein	55
SMD_1245	outer membrane protein	50
SMD_1246	transcriptional regulator lysR family	21
SMD_1247	LysE family transporter	10
SMD_1249	hypothetical protein	96
SMD_1250	glyoxalase	17
SMD_1251	hypothetical protein	150
SMD_1252	hypothetical protein	260
SMD_1255	DegT/DnrJ/EryC1/StrS aminotransferase	61
SMD_1256	drug/metabolite transporter (DMT) superfamily permease	128
SMD_1257	drug/metabolite transporter (DMT) superfamily permease	214
SMD_1258	hypothetical protein	238
SMD_1260	DNA-binding response regulator	47
SMD_1261	protein-tyrosine-phosphatase	28
SMD_1262	HxIR family transcriptional regulator	12
SMD_1263	MFS permease	6
SMD_1264	heme-regulated two-component response regulator	38
SMD_1265	TonB-dependent receptor Outer membrane receptor for ferrienter	13
SMD_1266	Cobalt-zinc-cadmium resistance protein CzcD	65
SMD_1269	metallopeptidase	156
SMD_1270	Response regulator receiver: Metal-dependent phosphohydrolase,	60
SMD_1272	hypothetical protein	241
SMD_1273	external DNA catabolism protein	83
SMD_1277	hypothetical protein	9
SMD_1278	hypothetical protein	48
SMD_1281	multidrug resistance efflux pump	18
SMD_1282	MFS transporter	14
SMD_1283	TetR family transcriptional regulator	22
SMD_1284	Zinc-regulated outer membrane receptor	5
SMD_1285	hypothetical protein	28
SMD_1286	hypothetical protein	581
SMD_1287	alkaline phosphodiesterase I	99
SMD_1289	DNA methylation and regulatory protein Ada	8
SMD_1290	hypothetical protein	89
SMD_1291	hypothetical protein	47
SMD_1292	inner membrane protein	28
SMD_1293	2-octaprenyl-3-methyl-6-methoxy-1,4-benzoquinol hydroxylase	502
SMD_1294	hypothetical protein	263
SMD_1295	hypothetical protein	184
SMD_1297	Mlr3171 protein	11
SMD_1298	hypothetical protein	17
SMD_1300	hypothetical protein	51
SMD_1301	RecF protein	128
SMD_1302	drug/metabolite transporter permease	80
SMD_1303	hypothetical protein	3
SMD_1304	glyoxalase	8
SMD_1305	beta-lactamase	41
SMD_1306	ABC transporter ATP-binding protein	43
SMD_1308	alginate lyase precursor	4
SMD_1309	lipoprotein	178
SMD_1310	Gfa-like protein	99
SMD_1311	hypothetical protein	66

SMD_1312	hypothetical protein	62
SMD_1313	glycine cleavage system transcriptional activator	14
SMD_1314	drug/metabolite transporter permease	14
SMD_1315	peptidyl-prolyl cis-trans isomerase	17
SMD_1316	PadR family transcriptional regulator	14
SMD_1317	sensor protein	26
SMD_1319	hypothetical protein	41
SMD_1320	hypothetical protein	35
SMD_1322	hypothetical protein	149
SMD_1329	Outer membrane protein assembly factor YaeT precursor	328
SMD_1330	membrane-associated zinc metalloprotease	98
SMD_1336	hypothetical protein	142
SMD_1339	Sigma-fimbriae chaperone protein	9
SMD_1340	hypothetical protein	4
SMD_1341	Sigma-fimbriae tip adhesin	1
SMD_1342	Sigma-fimbriae usher protein	1
SMD_1343	Sigma-fimbriae chaperone protein	4
SMD_1344	Sigma-fimbriae tip adhesin	7
SMD_1348	hypothetical protein	78
SMD_1349	glutathione-dependent thiol reductase	119
SMD_1351	hypothetical protein	19
SMD_1353	Na()/H() antiporter	18
SMD_1354	penicillin acylase II	21
SMD_1357	AraC family transcriptional regulator	22
SMD_1358	marR family transcriptional regulator	26
SMD_1359	tripartite multidrug resistance system outer membrane protein	29
SMD_1363	transcriptional regulator	6
SMD_1364	hypothetical protein	6
SMD_1368	Gfa-like protein	41
SMD_1370	RND efflux system, outer membrane lipoprotein CmeC	11
SMD_1373	winged helix family two component transcriptional regulator	66
SMD_1374	diguanylate cyclase	24
SMD_1376	DoxX family protein	0
SMD_1377	hypothetical protein	3
SMD_1378	hypothetical protein	4
SMD_1379	hypothetical protein	17
SMD_1386	hypothetical protein	6
SMD_1388	hypothetical protein	26
SMD_1390	macrophage infectivity potentiator	823
SMD_1391	nudix hydrolase YeaB	88
SMD_1392	Thiosulfate sulfurtransferase, rhodanese	61
SMD_1394	hypothetical protein	73
SMD_1396	iron uptake protein	24
SMD_1397	iron-regulated membrane protein	8
SMD_1398	iron uptake protein	4
SMD_1399	hypothetical protein	27
SMD_1400	Plasmid replication/partition related protein	80
SMD_1403	major facilitator superfamily (MFS_1) transporter	108
SMD_1404	hemerythrin-like protein PA1673	681
SMD_1405	transcriptional regulator	42
SMD_1406	sensor kinase	41
SMD_1407	sensor kinase	42

SMD_1408	Oxidoreductase	19
SMD_1409	glutamine amidotransferase	32
SMD_1410	glutamine synthetase	30
SMD_1415	succinate-semialdehyde dehydrogenase [NAD]	41
SMD_1417	hypothetical protein	168
SMD_1419	hypothetical protein	25
SMD_1420	hypothetical protein	49
SMD_1421	metal-dependent hydrolase	108
SMD_1422	phosphate starvation-inducible ATPase PhoH with RNA binding mo	117
SMD_1423	membrane-fusion protein	16
SMD_1424	multidrug ABC transporter ATPase	12
SMD_1425	multidrug ABC transporter permease	25
SMD_1426	tRNA-i(6)A37 methylthiotransferase	83
SMD_1428	DeoR family transcriptional regulator	12
SMD_1429	soluble lytic murein transglycosylase	16
SMD_1435	hypothetical protein	30
SMD_1436	hypothetical protein	12
SMD_1438	hypothetical protein	229
SMD_1441	carboxymuconolactone decarboxylase family protein	62
SMD_1443	glutaredoxin-related protein	147
SMD_1444	short-chain dehydrogenase	75
SMD_1445	Oar protein	590
SMD_1446	decarboxylase	156
SMD_1458	hypothetical protein	16
SMD_1459	hypothetical protein	41
SMD_1460	MltA-interacting protein	31
SMD_1461	two-component response regulator	30
SMD_1462	hypothetical protein	28
SMD_1463	hydrolase of the metallo-beta-lactamase superfamily, clustered w	7
SMD_1464	Ferric siderophore transport system, biopolymer transport proteir	182
SMD_1465	biopolymer transport protein ExbD/ToIR	98
SMD_1469	Low molecular weight protein tyrosine phosphatase	69
SMD_1470	hypothetical protein	96
SMD_1474	ISStmaD3 transposase A	11
SMD_1475	ISStmaD3 transposase B	9
SMD_1477	ISStmaD2 Transposase A	75
SMD_1478	ISStmaD2 Transposase B	148
SMD_1479	ISStmaD1 Transposase B	20
SMD_1480	ISStmaD1 Transposase A	25
SMD_1481	ISStmaD5 transposase A	5
SMD_1482	ISStmaD5 transposase B	3
SMD_1483	LysR family transcriptional regulator YnfL	145
SMD_1484	hypothetical protein	27
SMD_1488	Asi7591 protein	10
SMD_1493	heavy metal sensor histidine kinase	32
SMD_1495	Lactoylglutathione lyase	19
SMD_1497	arsenical-resistance protein ACR3	14
SMD_1499	PadR family transcriptional regulator	22
SMD_1501	acetyltransferase	11
SMD_1502	plasmid stabilization protein	2
SMD_1505	pyruvate/2-oxoglutarate dehydrogenase complex,dihydrolipoamic	2
SMD_1506	integrase	47

SMD_1507	hypothetical protein	73
SMD_1508	hypothetical protein	30
SMD_1509	hypothetical protein	5
SMD_1510	hypothetical protein	0
SMD_1511	hypothetical protein	1
SMD_1512	hypothetical protein	1
SMD_1513	hypothetical protein	0
SMD_1515	protein-disulfide isomerase	10
SMD_1516	type IV secretory pathway, VirB4 components	4
SMD_1517	lipoprotein	2
SMD_1518	hypothetical protein	0
SMD_1519	hypothetical protein	0
SMD_1520	hypothetical protein	0
SMD_1521	hypothetical protein	0
SMD_1522	hypothetical protein	0
SMD_1523	hypothetical protein	0
SMD_1524	hypothetical protein	2
SMD_1525	candidate type III effector Hop protein	1
SMD_1526	excisionase domain-containing protein	260
SMD_1527	hypothetical protein	139
SMD_1528	AAA ATPase	147
SMD_1529	hypothetical protein	136
SMD_1530	hypothetical protein	131
SMD_1531	hypothetical protein	103
SMD_1532	hypothetical protein	89
SMD_1533	DNA repair ATPase	42
SMD_1534	hypothetical protein	12
SMD_1535	type IV secretory pathway, VirD4 components	0
SMD_1536	hypothetical protein	1
SMD_1537	Soluble lytic murein transglycosylase and related regulatory prote	0
SMD_1538	hypothetical protein	0
SMD_1539	methyl-accepting chemotaxis protein	0
SMD_1540	PilL protein	0
SMD_1541	superfamily II DNA/RNA helicases, SNF2 family	2
SMD_1542	hypothetical protein	5
SMD_1543	hypothetical protein	5
SMD_1544	Plasmid related protein	1
SMD_1545	hypothetical protein	1
SMD_1546	hypothetical protein	1
SMD_1547	hypothetical protein	0
SMD_1548	Plasmid-related protein	0
SMD_1549	hypothetical protein	0
SMD_1550	hypothetical protein	0
SMD_1551	periplasmic protein TonB, links inner and outer membranes	1
SMD_1552	hypothetical protein	0
SMD_1553	hypothetical protein	0
SMD_1559	hypothetical protein	14
SMD_1560	hypothetical protein	12
SMD_1561	hypothetical protein	8
SMD_1562	hypothetical protein	0
SMD_1563	hypothetical protein	0
SMD_1564	hypothetical protein	0

SMD_1568	Single-stranded DNA-binding protein in PFGI-1-like cluster	6
SMD_1569	integrase regulator R	1
SMD_1570	hypothetical protein	0
SMD_1571	hypothetical protein	0
SMD_1572	hypothetical protein	1
SMD_1573	protein with ParB-like nuclease domain in PFGI-1-like cluster	6
SMD_1574	hypothetical protein	0
SMD_1575	chromosome partitioning ATPase in PFGI-1-like cluster, ParA-like	0
SMD_1576	transcriptional regulator	10
SMD_1577	hypothetical protein	11
SMD_1578	FAD-binding monooxygenase	16
SMD_1579	ISStmaD2 Transposase B	83
SMD_1580	ISStmaD2 Transposase A	38
SMD_1582	RND efflux system, outer membrane lipoprotein, NodT family	121
SMD_1583	cysteine desulfurase	86
SMD_1584	ABC transporter ATP-binding protein	78
SMD_1585	HlyD family secretion protein	91
SMD_1586	hypothetical protein	48
SMD_1587	hypothetical protein	18
SMD_1591	hypothetical protein	42
SMD_1592	hypothetical protein	17
SMD_1593	hypothetical protein	7
SMD_1594	hypothetical protein	10
SMD_1595	Site-specific DNA methylase-like	5
SMD_1596	hypothetical protein	3
SMD_1597	hypothetical protein	3
SMD_1598	hypothetical protein	7
SMD_1599	hypothetical protein	3
SMD_1600	hypothetical protein	5
SMD_1601	hypothetical protein	13
SMD_1602	hypothetical protein	6
SMD_1603	hypothetical protein	2
SMD_1604	phage terminase, large subunit	5
SMD_1605	hypothetical protein	16
SMD_1607	peptidase S14, ClpP	6
SMD_1608	RecA/RadA recombinase	4
SMD_1609	phage capsid and scaffold	6
SMD_1610	hypothetical protein	5
SMD_1611	hypothetical protein	1
SMD_1612	hypothetical protein	3
SMD_1613	hypothetical protein	1
SMD_1614	hypothetical protein	0
SMD_1615	hypothetical protein	2
SMD_1616	hypothetical protein	5
SMD_1617	hypothetical protein	11
SMD_1618	ADP-ribosylglycohydrolase family protein	88
SMD_1619	hypothetical protein	73
SMD_1620	hypothetical protein	10
SMD_1621	hypothetical protein	4
SMD_1622	AraC family transcriptional regulator	23
SMD_1623	protein crcB	19
SMD_1624	XRE family transcriptional regulator	19

SMD_1625	hypothetical protein	27
SMD_1626	hypothetical protein	114
SMD_1627	type cbb3 cytochrome oxidase biogenesis protein CcoG, involved	124
SMD_1628	hypothetical protein	500
SMD_1629	sec-independent protein translocase protein TatC	394
SMD_1632	BLUF domain containing protein	489
SMD_1634	glutamate synthase [NADPH] large subunit	74
SMD_1635	N-acetyltransferase GCN5	46
SMD_1636	NAD(FAD)-utilizing dehydrogenases	36
SMD_1638	hypothetical protein	94
SMD_1639	Rhodanese domaincontaining protein	114
SMD_1640	Luciferase-like	67
SMD_1641	general stress protein	40
SMD_1643	hemolysin-like protein	297
SMD_1644	hypothetical protein	220
SMD_1646	carboxypeptidase C (cathepsin A)	24
SMD_1647	N-acetyltransferase GCN5	50
SMD_1649	hypothetical protein	188
SMD_1650	hypothetical protein	67
SMD_1653	hypothetical protein	93
SMD_1654	hypothetical protein	32
SMD_1660	hypothetical protein	38
SMD_1663	lipoprotein B	194
SMD_1665	hypothetical protein	89
SMD_1666	hypothetical protein	127
SMD_1667	RNA binding protein	253
SMD_1670	hypothetical protein	49
SMD_1675	C-terminal domain of CinA type S Protein Implicated in DNA repa	132
SMD_1676	Ubiquinone biosynthesis monooxygenase UbiB	28
SMD_1683	TonB-dependent receptor	6
SMD_1684	hypothetical protein	10
SMD_1686	ECF sigma factor	2
SMD_1687	FecR protein	0
SMD_1688	TonB-dependent receptor	2
SMD_1691	TonB-dependent receptor	31
SMD_1692	cytochrome c family protein	291
SMD_1694	hypothetical protein	3
SMD_1695	hypothetical protein	6
SMD_1696	signal peptide protein	12
SMD_1697	Pirin	9
SMD_1698	transcriptional regulator	20
SMD_1702	hypothetical protein	34
SMD_1704	transmembrane protein	39
SMD_1705	hypothetical protein	109
SMD_1706	ATPase related to phosphate starvation-inducible protein PhoH	109
SMD_1707	Thiol peroxidase, Bcp-type	143
SMD_1708	glycine cleavage system transcriptional antiactivator GcvR	203
SMD_1710	hypothetical protein	451
SMD_1711	4Fe-4S ferredoxin	87
SMD_1720	Dna binding response regulator PrrA (RegA)	160
SMD_1721	Sensor histidine kinase PrrB (RegB)	100
SMD_1723	membrane-associated phospholipid phosphatase	104

SMD_1724	BarA-associated response regulator UvrY (= GacA = SirA)	113
SMD_1730	multiple sugar ABC transporter ATP-binding protein	61
SMD_1731	folate-dependent protein for Fe/S cluster synthesis/repair in oxid	91
SMD_1736	YgfY COG2938	135
SMD_1737	hypothetical protein	29
SMD_1738	lipoprotein releasing system transmembrane protein LolC	147
SMD_1739	lipoprotein releasing system ATP-binding protein LolD	129
SMD_1740	hypothetical protein	30
SMD_1741	Fe(2)-trafficking protein YggX	51
SMD_1744	hypothetical protein	124
SMD_1746	ribosomal RNA small subunit methyltransferase D	46
SMD_1748	hypothetical protein	716
SMD_1751	Zn-dependent hydrolases, including glyoxylases	123
SMD_1753	ArsR family transcriptional regulator	22
SMD_1754	glutathione S-transferase	93
SMD_1756	TonB-dependent receptor	3
SMD_1757	phytase	5
SMD_1758	hypothetical protein	0
SMD_1759	inorganic pyrophosphatase	3
SMD_1760	Deoxyribodipyrimidine photolyase	16
SMD_1761	outer membrane protein	227
SMD_1768	hypothetical protein	209
SMD_1769	hypothetical protein	24
SMD_1770	hypothetical protein	32
SMD_1771	cytochrome P450	3
SMD_1772	LuxR family transcriptional regulator	5
SMD_1774	cytochrome P450	8
SMD_1775	hypothetical protein	16
SMD_1776	protein-S-isoprenylcysteine methyltransferase	31
SMD_1777	hypothetical protein	53
SMD_1778	hypothetical protein	8
SMD_1779	ISStmaD1 Transposase A	55
SMD_1780	ISStmaD1 Transposase B	43
SMD_1781	integrase	25
SMD_1783	hypothetical protein	35
SMD_1784	GNAT family acetyltransferase	65
SMD_1786	hypothetical protein	173
SMD_1787	Outer membrane lipoprotein SmpA, a component of the essential	323
SMD_1789	Lysophospholipase L1 and related esterases	11
SMD_1790	LysR family transcriptional regulator	30
SMD_1796	AraC family transcriptional regulator	18
SMD_1797	fosmidomycin resistance protein	6
SMD_1800	hypothetical protein	53
SMD_1801	ABC transporter ATP-binding protein	38
SMD_1802	protein co-occurring with transport systems (COG1739)	55
SMD_1803	hypothetical protein	43
SMD_1804	RNA polymerase sigma-70 factor	39
SMD_1805	hypothetical protein	33
SMD_1806	lysine decarboxylase family protein	73
SMD_1807	acetylornithine aminotransferase	103
SMD_1813	short-chain alcohol dehydrogenase	313
SMD_1814	FOG: PAS/PAC domain	71

SMD_1815	hypothetical protein	75
SMD_1816	YaeQ protein	94
SMD_1818	hypothetical protein	15
SMD_1821	hypothetical protein	30
SMD_1824	membrane protein YeiH	4
SMD_1825	LysR family transcriptional regulator YeiE	14
SMD_1827	cytochrome C552	59
SMD_1828	cytochrome	44
SMD_1832	pheromone shutdown protein	92
SMD_1833	phosphinothricin N-acetyltransferase	107
SMD_1834	N-carbamoylputrescine amidase	241
SMD_1835	Agmatine deiminase	80
SMD_1836	hypothetical protein	81
SMD_1841	hypothetical protein	110
SMD_1842	heat shock protein YciM	153
SMD_1846	3-ketoacyl-CoA thiolase	104
SMD_1847	enoyl-CoA hydratase	105
SMD_1848	transcriptional regulator for fatty acid degradation FadQ, TetR far	52
SMD_1852	DNA-binding protein	126
SMD_1853	hypothetical protein	334
SMD_1854	Outer membrane protein YfgL, lipoprotein component of the prote	372
SMD_1856	sulfur carrier protein adenylyltransferase ThiF	43
SMD_1860	hypothetical protein	57
SMD_1865	ABC transporter	97
SMD_1866	hypothetical protein	83
SMD_1868	LysR family transcriptional regulator	5
SMD_1869	ThiJ/Pfpl family protein	2
SMD_1870	hypothetical protein	10
SMD_1871	hypothetical protein	22
SMD_1872	hypothetical protein	16
SMD_1873	D-beta-hydroxybutyrate dehydrogenase	35
SMD_1874	hypothetical protein	12
SMD_1875	carboxylesterase	5
SMD_1876	carboxylesterase	8
SMD_1877	hypothetical protein	11
SMD_1878	hypothetical protein	22
SMD_1879	ArsR family transcriptional regulator	25
SMD_1880	Aha1 domain-containing protein	30
SMD_1881	marR family transcriptional regulator	11
SMD_1882	monooxygenase	5
SMD_1883	Sortase and related acyltransferases	66
SMD_1884	67 kDa myosin-crossreactive streptococcal antigen	47
SMD_1885	dehydrogenase	9
SMD_1886	AraC family transcriptional regulator	11
SMD_1887	TetR family transcriptional regulator	49
SMD_1888	hypothetical protein	12
SMD_1889	hypothetical protein	22
SMD_1890	BLUF domain containing protein	11
SMD_1891	transcriptional regulator	2
SMD_1892	TonB-dependent receptor	0
SMD_1894	hypothetical protein	0
SMD_1895	luciferase family protein YtmO, in cluster with L-cystine ABC trans	2

SMD_1896	nitrilotriacetate monooxygenase component A	3
SMD_1897	peptidase M20D, amidohydrolase	2
SMD_1898	N-acetyltransferase GCN5	0
SMD_1899	polar amino acid ABC transporter ATPase	1
SMD_1900	periplasmic binding protein	4
SMD_1901	hypothetical protein	3
SMD_1902	Outer membrane protein romA	2
SMD_1903	TetR family transcriptional regulator	45
SMD_1904	hypothetical protein	9
SMD_1905	short-chain dehydrogenase/reductase SDR	17
SMD_1906	acetyltransferase	12
SMD_1907	ArsR family transcriptional regulator	15
SMD_1908	major facilitator superfamily permease	3
SMD_1909	Aminoglycoside 3'-phosphotransferase	9
SMD_1910	TetR family transcriptional regulator	7
SMD_1911	hypothetical protein	6
SMD_1913	integral membrane protein	41
SMD_1916	methyltransferase	52
SMD_1917	hypothetical protein	121
SMD_1918	3-oxoacyl-ACP reductase	59
SMD_1919	aldehyde dehydrogenase B	282
SMD_1921	Aminoglycoside N6'-acetyltransferase	11
SMD_1922	ribosomal-protein-S5p-alanine acetyltransferase	3
SMD_1923	AraC family transcriptional regulator	27
SMD_1924	two-component system regulatory protein	51
SMD_1925	two-component system sensor protein	51
SMD_1926	two-component hybrid sensor and regulator	57
SMD_1927	chemotaxis protein	80
SMD_1928	protein-glutamate methylesterase	66
SMD_1929	two-component hybrid sensor and regulator	82
SMD_1930	BLUF domain containing protein	41
SMD_1931	ArsR family transcriptional regulator	29
SMD_1932	transmembrane protein	8
SMD_1933	hypothetical protein	7
SMD_1934	choloylglycine hydrolase	12
SMD_1935	hypothetical protein	42
SMD_1936	AraC family transcriptional regulator	30
SMD_1937	integral membrane protein	10
SMD_1938	hypothetical protein	14
SMD_1944	hypothetical protein	65
SMD_1945	His repressor	13
SMD_1954	hypothetical protein	74
SMD_1955	hypothetical protein	53
SMD_1956	N-acetylglucosamine kinase	57
SMD_1957	L-asparaginase	55
SMD_1959	TonB-dependent receptor	9
SMD_1962	Copper chaperone	34
SMD_1963	TonB-dependent receptor	167
SMD_1964	alpha-1,2-mannosidase	131
SMD_1965	transcriptional regulator	96
SMD_1966	mannose transporter, GGP family	119
SMD_1968	D-mannose isomerase	155

SMD_1973	Amino acid transporters	54
SMD_1974	Amino acid transporters	75
SMD_1975	adenosylhomocysteinase	46
SMD_1977	D-2-hydroxyacid dehydrogenase	52
SMD_1978	hypothetical protein	170
SMD_1979	hypothetical protein	65
SMD_1980	Signal transduction histidine kinase	37
SMD_1981	two-component response regulator	56
SMD_1984	hypothetical protein	82
SMD_1985	hypothetical protein	242
SMD_1987	3-hydroxyacyl-CoA dehydrogenase	123
SMD_1989	Lactoylglutathione lyase and related lyases	36
SMD_1990	methylglutaconyl-CoA hydratase	40
SMD_1993	hypothetical protein	96
SMD_1994	hypothetical protein	69
SMD_1995	NAD(P)H dehydrogenase, quinone family	5
SMD_1996	merR family transcriptional regulator	7
SMD_1997	3-oxoacyl-ACP reductase	13
SMD_2002	Regulatory protein, RpfE type	140
SMD_2003	hypothetical protein	31
SMD_2005	hypothetical protein	11
SMD_2006	inner membrane protein	3
SMD_2009	DNA-binding protein	55
SMD_2010	hypothetical protein	6
SMD_2011	succinate-semialdehyde dehydrogenase [NAD]	21
SMD_2021	High-affinity choline uptake protein BetT	10
SMD_2023	hypothetical protein	35
SMD_2024	hypothetical protein	36
SMD_2026	hemolysin related protein	13
SMD_2030	chemotaxis protein	39
SMD_2031	chemotaxis protein	98
SMD_2032	hypothetical protein	297
SMD_2034	hypothetical protein	47
SMD_2035	chemotaxis protein	30
SMD_2038	hypothetical protein	204
SMD_2039	chemotaxis protein	38
SMD_2040	chromosome partitioning protein	39
SMD_2051	diguanylate cyclase	1
SMD_2066	hypothetical protein	2
SMD_2067	flagellar regulatory protein FleQ	54
SMD_2068	response regulator	83
SMD_2070	LuxR family DNA-binding response regulator	75
SMD_2071	hypothetical protein	94
SMD_2072	hypothetical protein	108
SMD_2093	Histidine kinase	66
SMD_2094	C-di-GMP phosphodiesterase A	45
SMD_2095	HrpX related protein	25
SMD_2096	Sensory box/GGDEF family protein	36
SMD_2097	hypothetical protein	16
SMD_2098	hypothetical protein	39
SMD_2099	methyl-accepting chemotaxis protein	158
SMD_2100	hypothetical protein	117

SMD_2102	nudix-like NDP and NTP phosphohydrolase YmfB	219
SMD_2103	hypothetical protein	275
SMD_2105	Streptomycin 3''-kinase	20
SMD_2107	hypothetical protein	7
SMD_2110	hypothetical protein	53
SMD_2111	hypothetical protein	27
SMD_2114	transglutaminase-like enzymes, putative cysteine proteases	132
SMD_2116	AAA ATPase	96
SMD_2117	integral membrane protein	43
SMD_2118	hypothetical protein	50
SMD_2120	hypothetical protein	10
SMD_2121	heme ABC transporter, cell surface heme and hemoprotein receptor	5
SMD_2122	heme ABC transporter, permease protein HmuU	7
SMD_2123	heme ABC transporter, ATPase component HmuV	6
SMD_2124	hypothetical protein	8
SMD_2126	hypothetical protein	40
SMD_2127	peptide transport system permease protein sapC (TC 3.A.1.5.5)	134
SMD_2129	cointegrate resolution protein T	42
SMD_2130	hypothetical protein	10
SMD_2134	hypothetical protein	21
SMD_2135	hypothetical protein	53
SMD_2137	sodium/calcium exchanger family protein	75
SMD_2142	Lead, cadmium, zinc and mercury transporting ATPase	106
SMD_2143	High-affinity iron permease	73
SMD_2144	heavy metal resistance transcriptional regulator Hmrr, MerR family	110
SMD_2146	phage integrase family site-specific recombinase	45
SMD_2149	LuxR family two component transcriptional regulator	7
SMD_2150	superfamily I DNA/RNA helicase protein	40
SMD_2151	Outer membrane lipoprotein	0
SMD_2152	cyclopropane-fatty-acyl-phospholipid synthase-like protein, cluster	2
SMD_2153	hypothetical protein	1
SMD_2154	hypothetical protein	1
SMD_2155	S-adenosyl-L-methionine dependent methyltransferase	1
SMD_2156	hypothetical protein	0
SMD_2157	Amine oxidase, flavin-containing	2
SMD_2158	Fatty acid desaturase	1
SMD_2159	hypothetical protein	0
SMD_2160	RNA polymerase sigma-70 factor	4
SMD_2161	hypothetical protein	6
SMD_2162	Oxidoreductase	8
SMD_2163	Sensory box histidine kinase/response regulator	28
SMD_2164	two-component system response regulator	40
SMD_2165	phytochrome, two-component sensor histidine kinase	33
SMD_2166	hypothetical protein	3
SMD_2167	peripheral-type benzodiazepine receptor	7
SMD_2168	hypothetical protein	3
SMD_2169	Histone acetyltransferase HPA2 and related acetyltransferases	18
SMD_2170	histidine kinase	26
SMD_2171	hypothetical protein	0
SMD_2172	phage replication protein NMA0782	1
SMD_2173	hypothetical protein	9
SMD_2174	hypothetical protein	2

SMD_2175	Zona occludens toxin	3
SMD_2176	hypothetical protein	6
SMD_2177	DNA mismatch repair	89
SMD_2180	hypothetical protein	3
SMD_2181	CTP:molybdopterin cytidyltransferase	2
SMD_2186	hypothetical protein	18
SMD_2187	hypothetical protein	32
SMD_2188	TetR family transcriptional regulator	13
SMD_2189	Non-heme chloroperoxidase	3
SMD_2190	sensor histidine kinase	40
SMD_2191	AraC family transcriptional regulator	11
SMD_2192	short-chain dehydrogenase	9
SMD_2193	excinuclease ABC subunit A	18
SMD_2194	hypothetical protein	5
SMD_2195	hypothetical protein	6
SMD_2196	oxidoreductase	2
SMD_2197	hypothetical protein	19
SMD_2198	BLUF domain containing protein	13
SMD_2199	ATP-dependent DNA ligase	0
SMD_2200	hypothetical protein	0
SMD_2201	protein yciF	4
SMD_2202	endonuclease	1
SMD_2203	cytoplasmic protein (Fragment)	2
SMD_2204	BLUF domain containing protein	0
SMD_2205	General stress protein	2
SMD_2206	manganese catalase	1
SMD_2207	protein yciE	1
SMD_2208	hypothetical protein	15
SMD_2209	cheY-like receiver	3
SMD_2210	BLUF domain containing protein	1
SMD_2211	BLUF domain containing protein	3
SMD_2212	glycosyl transferase, group 2 family protein	1
SMD_2213	type 12 methyltransferase	2
SMD_2214	LmbE-like protein	1
SMD_2215	acyl-CoA dehydrogenase/oxidase domain-containing protein	0
SMD_2216	hypothetical protein	1
SMD_2217	zinc-type alcohol dehydrogenase-like protein ybdR	2
SMD_2218	hypothetical protein	2
SMD_2219	hypothetical protein	3
SMD_2220	isochorismatase	8
SMD_2221	hypothetical protein	19
SMD_2222	Tiorf68 protein	21
SMD_2223	hypothetical protein	66
SMD_2224	transcriptional regulator lacI family	172
SMD_2225	PTS system phosphoenolpyruvate-protein phosphotransferase	50
SMD_2229	hypothetical protein	14
SMD_2230	Xylosidase/arabinoxidase	12
SMD_2231	transporter	4
SMD_2232	glucan 1,4-beta-glucosidase	4
SMD_2234	Sialic acid-specific 9-O-acetyltransferase	2
SMD_2236	sal operon transcriptional repressor	22
SMD_2237	periplasmic beta-glucosidase	4

SMD_2240	Xylulose kinase	1
SMD_2241	Tryptophan halogenase	6
SMD_2242	Pass1-like protein	4
SMD_2243	peptide transport system permease protein sapC (TC 3.A.1.5.5)	12
SMD_2244	TonB-dependent receptor	2
SMD_2245	hypothetical protein	4
SMD_2246	6-aminohexanoate-dimer hydrolase	4
SMD_2247	Na /H antiporter NhaD and related arsenite permeases	15
SMD_2248	phosphate-specific outer membrane porin OprP Pyrophosphate-sp	2
SMD_2249	ABC transporter permease	8
SMD_2250	ABC transporter ATP-binding protein	4
SMD_2251	ABC transporter substrate-binding protein	8
SMD_2252	hypothetical protein	4
SMD_2253	LysR family transcriptional regulator YbhD	38
SMD_2254	hypothetical protein	33
SMD_2255	hypothetical protein	7
SMD_2256	beta-lactamase class C and other penicillin binding proteins	7
SMD_2257	5,10-methylenetetrahydrofolate reductase	9
SMD_2260	hypothetical protein	6
SMD_2262	hypothetical protein	11
SMD_2263	hypothetical protein	0
SMD_2264	hypothetical protein	0
SMD_2265	hypothetical protein	0
SMD_2266	hypothetical protein	1
SMD_2267	ABC transporter ATP-binding protein	1
SMD_2268	cytoplasmic protein	7
SMD_2269	endonuclease	3
SMD_2270	hypothetical protein	5
SMD_2271	phosphatase YieH	55
SMD_2272	hypothetical protein	37
SMD_2273	Lactoylglutathione lyase and related lyases	12
SMD_2274	AraC family transcriptional regulator	12
SMD_2275	glycine cleavage system transcriptional activator	20
SMD_2276	hypothetical protein	0
SMD_2277	hypothetical protein	0
SMD_2278	hypothetical protein	4
SMD_2279	hypothetical protein	0
SMD_2280	nitrogen regulation protein NR(I)	1
SMD_2281	hypothetical protein	2
SMD_2282	hypothetical protein	0
SMD_2283	Large exoproteins involved in heme utilization or adhesion	2
SMD_2284	bacteriocin resistance protein	0
SMD_2285	hypothetical protein	0
SMD_2286	hypothetical protein	1
SMD_2287	RebB protein	2
SMD_2288	RebB protein	5
SMD_2289	RebB protein	6
SMD_2290	RebB protein	3
SMD_2291	hypothetical protein	6
SMD_2292	hypothetical protein	6
SMD_2293	hypothetical protein	15
SMD_2294	hypothetical protein	2

SMD_2295	hypothetical protein	2
SMD_2296	hypothetical protein	0
SMD_2297	hypothetical protein	13
SMD_2298	hypothetical protein	141
SMD_2299	primosomal protein N' (replication factor Y)-superfamily II helicase	80
SMD_2300	hypothetical protein	53
SMD_2301	hypothetical protein	5
SMD_2302	cation transport protein	2
SMD_2303	DNA-3-methyladenine glycosylase II	4
SMD_2304	hypothetical protein	4
SMD_2305	hypothetical protein	3
SMD_2307	Trehalose synthase	1
SMD_2308	F420-dependent glucose-6-phosphate dehydrogenase	2
SMD_2309	chain A, Crystal Structure Of Thermotoga Maritima 1070	0
SMD_2310	Oxidoreductase	1
SMD_2311	Small-conductance mechanosensitive channel	2
SMD_2312	macrolide export ATP-binding/permease MacB	10
SMD_2313	macrolide-specific efflux protein MacA	12
SMD_2314	hypothetical protein	34
SMD_2315	two-component response regulator	54
SMD_2316	Signal transduction histidine kinase	40
SMD_2317	hypothetical protein	24
SMD_2318	hypothetical protein	55
SMD_2319	TetR family transcriptional regulator	27
SMD_2320	ferrichrome-iron receptor	3
SMD_2321	hypothetical protein	11
SMD_2325	hypothetical protein	10
SMD_2326	CFA/I fimbrial subunit C precursor	3
SMD_2327	hypothetical protein	2
SMD_2328	hypothetical protein	1
SMD_2329	hypothetical protein	6
SMD_2330	hypothetical protein	8
SMD_2333	Sensor histidine kinase	21
SMD_2334	nitrogen regulation protein NR(I)	19
SMD_2335	hypothetical protein	12
SMD_2336	hypothetical protein	8
SMD_2337	transporter family protein	6
SMD_2338	hypothetical protein	62
SMD_2339	hypothetical protein	45
SMD_2340	hypothetical protein	30
SMD_2341	transmembrane protein	6
SMD_2342	hypothetical protein	3
SMD_2343	L1 beta-lactamase	11
SMD_2344	copper amine oxidase N-terminal protein	9
SMD_2345	hypothetical protein	30
SMD_2346	formate dehydrogenase oxidoreductase protein	15
SMD_2348	macrophage infectivity potentiator-related protein	5
SMD_2349	AraC family transcriptional regulator	7
SMD_2350	TetR family transcriptional regulator	96
SMD_2351	hypothetical protein	4
SMD_2352	hypothetical protein	10
SMD_2353	lipoprotein	3

SMD_2354	lipoprotein	3
SMD_2355	ABC-type antimicrobial peptide transport system,permease comp	1
SMD_2356	ABC transporter ATP-binding protein	4
SMD_2357	zinc-binding protein	1
SMD_2358	hypothetical protein	0
SMD_2359	LysR family transcriptional regulator	17
SMD_2360	methylglyoxal reductase, acetol producing	1
SMD_2361	luciferase-like monooxygenase	0
SMD_2362	polyketide cyclase	1
SMD_2363	hypothetical protein	1
SMD_2367	hypothetical protein	8
SMD_2368	LysR family transcriptional regulator	8
SMD_2369	short-chain type dehydrogenase/reductase	3
SMD_2373	hypothetical protein	14
SMD_2374	hypothetical protein	15
SMD_2375	alpha-1,2-mannosidase	57
SMD_2376	hypothetical protein	3
SMD_2377	thioredoxin-like protein	1
SMD_2378	AtsE	4
SMD_2379	hypothetical protein	43
SMD_2381	hypothetical protein	35
SMD_2382	hypothetical protein	68
SMD_2383	signal transduction histidine kinase	6
SMD_2384	response regulator receiver protein	9
SMD_2386	hypothetical protein	2
SMD_2387	Iron siderophore receptor protein	2
SMD_2388	Iron siderophore sensor protein	6
SMD_2389	Sigma factor, ECF subfamily	11
SMD_2390	LysR family transcriptional regulator	21
SMD_2391	Pirin	0
SMD_2392	nicotinamidase family protein YcaC	6
SMD_2393	OsmC-like protein	16
SMD_2394	hypothetical protein	5
SMD_2395	Outer membrane receptor for ferric coprogen and ferric-rhodotori	1
SMD_2396	Ferric siderophore transport system, periplasmic binding protein	0
SMD_2399	hemolysin activation/secretion protein	1
SMD_2400	hypothetical protein	7
SMD_2405	Filamentous hemagglutinin family outer membrane protein	2
SMD_2414	hypothetical protein	0
SMD_2415	hypothetical protein	2
SMD_2417	extracytoplasmic function	2
SMD_2418	outer membrane receptor proteins, mostly Fe transport	1
SMD_2419	AsnC family transcriptional regulator	13
SMD_2420	branched-chain amino acid transport protein AzIC	14
SMD_2421	hypothetical protein	6
SMD_2423	hypothetical protein	1
SMD_2424	malto-oligosyltrehalose synthase	1
SMD_2426	malto-oligosyltrehalose trehalohydrolase	1
SMD_2429	Aerotaxis sensor receptor protein	5
SMD_2431	molybdenum transport ATP-binding protein ModC (TC 3.A.1.8.1)	23
SMD_2435	hypothetical protein	40
SMD_2443	hypothetical protein	15

SMD_2444	hypothetical protein	5
SMD_2445	abhydrolase, alpha/beta hydrolase fold	3
SMD_2446	AraC family transcriptional regulator	7
SMD_2447	hypothetical protein	1
SMD_2448	hypothetical protein	0
SMD_2449	hypothetical protein	3
SMD_2450	outer membrane protein	1
SMD_2451	hypothetical protein	26
SMD_2452	hypothetical protein	9
SMD_2453	hypothetical protein	20
SMD_2454	two-component system regulatory protein	21
SMD_2455	two-component system sensor protein	12
SMD_2457	phosphoethanolamine transferase EptA specific for the 1 phospho	20
SMD_2458	hypothetical protein	32
SMD_2459	methyl-accepting chemotaxis protein	56
SMD_2460	flagellar motor protein	48
SMD_2461	hypothetical protein	63
SMD_2462	hypothetical protein	7
SMD_2465	phosphopantetheine-binding protein	26
SMD_2469	transporter	6
SMD_2470	inner membrane protein	11
SMD_2471	Coenzyme F420-dependent N5,N10-methylene tetrahydromethar	10
SMD_2472	GNAT family acetyltransferase	7
SMD_2473	disulfide-isomerase	17
SMD_2475	nitrilotriacetate monooxygenase component B	38
SMD_2476	FOG: TPR repeat	128
SMD_2477	linoleoyl-CoA desaturase (delta(6)-desaturase)	325
SMD_2478	flavodoxin reductases (ferredoxin-NADPH reductases) family 1	362
SMD_2479	Unsaturated fatty acid biosynthesis repressor FabR, TetR family	70
SMD_2480	TonB-dependent receptor Outer membrane receptor for ferrienter	53
SMD_2481	hypothetical protein	38
SMD_2482	Mn-dependent transcriptional regulator MntR	64
SMD_2483	manganese transport protein MntH	68
SMD_2484	Thioredoxin	48
SMD_2485	flavodoxin	13
SMD_2488	oxidoreductase SMc00968	31
SMD_2489	TonB-dependent receptor	5
SMD_2491	Lactoylglutathione lyase and related lyases	68
SMD_2493	Spermidine export protein mdtJ	42
SMD_2494	DNA binding protein HpkR	16
SMD_2495	hypothetical protein	156
SMD_2496	Iron(III) dicitrate transport protein FecA	35
SMD_2497	chloride channel protein	18
SMD_2498	hypothetical protein	21
SMD_2499	merR family transcriptional regulator	16
SMD_2500	methyltransferase	8
SMD_2501	hypothetical protein	3
SMD_2502	Outer membrane protein A precursor	1
SMD_2503	hypothetical protein	0
SMD_2504	AraC family transcriptional regulator	1
SMD_2505	flp/Fap pilin component	3
SMD_2506	prepilin peptidase transmembrane protein	0

SMD_2507	flp pilus assembly protein TadG	2
SMD_2508	flp pilus assembly protein RcpC/CpaB	1
SMD_2509	type II/IV secretion system secretin RcpA/CpaC, associated with F	4
SMD_2510	pilus assembly protein	3
SMD_2511	type II/IV secretion system ATP hydrolase TadA/VirB11/CpaF, Ta	4
SMD_2512	flp pilus assembly protein TadB	2
SMD_2513	type II secretion system protein	1
SMD_2514	flp pilus assembly protein TadD, contains TPR repeats	1
SMD_2515	hypothetical protein	0
SMD_2516	hypothetical protein	1
SMD_2517	lipoprotein	71
SMD_2518	hypothetical protein	16
SMD_2520	MFS transporter	2
SMD_2521	hypothetical protein	0
SMD_2522	exoenzymes regulatory protein AepA precursor	1
SMD_2523	membrane protein	2
SMD_2524	Amidases related to nicotinamidase	2
SMD_2525	AraC family transcriptional regulator	1
SMD_2526	hypothetical protein	1
SMD_2527	two-component system sensor protein	10
SMD_2528	two-component system regulatory protein	9
SMD_2529	major facilitator superfamily permease	5
SMD_2530	LysR family transcriptional regulator	17
SMD_2531	amidohydrolase	12
SMD_2532	ankyrin	4
SMD_2533	LysR family transcriptional regulator	12
SMD_2534	hypothetical protein	4
SMD_2536	hypothetical protein	63
SMD_2537	TonB-dependent receptor	5
SMD_2538	hypothetical protein	27
SMD_2540	hypothetical protein	64
SMD_2541	hypothetical protein	308
SMD_2542	hypothetical protein	87
SMD_2547	MgtC/SapB transporter	4
SMD_2548	3-oxoacyl-ACP reductase	11
SMD_2549	AraC family transcriptional regulator	6
SMD_2550	glutaryl-7-ACA acylase	15
SMD_2551	hypothetical protein	5
SMD_2552	major facilitator superfamily protein	5
SMD_2553	LysR family transcriptional regulator	8
SMD_2555	Lactoylglutathione lyase and related lyases	6
SMD_2556	AraC family transcriptional regulator	17
SMD_2557	Sterol desaturase	5
SMD_2558	LysR family transcriptional regulator	17
SMD_2559	DSBA oxidoreductase	3
SMD_2560	cyclase family protein	8
SMD_2561	recombinase A	22
SMD_2562	DNA polymerase-like protein PA0670	13
SMD_2564	hypothetical protein	29
SMD_2565	transcriptional regulator of pyridoxine metabolism	24
SMD_2566	hypothetical protein	22
SMD_2567	glutamine amidotransferase	30

SMD_2568	hypothetical protein	33
SMD_2569	hypothetical protein	35
SMD_2570	ECF subfamily RNA polymerase sigma-70 factor	5
SMD_2572	TonB-dependent receptor	3
SMD_2573	lipoprotein	2
SMD_2574	Ferric siderophore transport system, periplasmic binding protein	8
SMD_2575	translation initiation inhibitor	14
SMD_2576	Cobalt-zinc-cadmium resistance protein	74
SMD_2578	amino acid permease	304
SMD_2579	hypothetical protein	503
SMD_2581	redoxin domain-containing protein	11
SMD_2582	AraC family transcriptional regulator	2
SMD_2590	AttT protein	65
SMD_2591	hypothetical protein	27
SMD_2592	two-component system regulatory protein	118
SMD_2594	hypothetical protein	6
SMD_2596	hypothetical protein	18
SMD_2597	hypothetical protein	73
SMD_2598	hypothetical protein	40
SMD_2600	hypothetical protein	146
SMD_2601	hypothetical protein	5
SMD_2602	hypothetical protein	18
SMD_2603	stress-responsive transcriptional regulator	32
SMD_2604	hypothetical protein	13
SMD_2606	PHA synthase subunit	72
SMD_2608	hypothetical protein	6
SMD_2609	hypothetical protein	26
SMD_2611	hypothetical protein	73
SMD_2612	ATP/GTP-binding protein	53
SMD_2614	Small-conductance mechanosensitive channel	31
SMD_2615	NADH:flavin oxidoreductases, Old Yellow Enzyme family	7
SMD_2616	LasA protein	45
SMD_2618	tRNA-specific adenosine-34 deaminase	32
SMD_2619	HxIR family transcriptional regulator	8
SMD_2620	NAD(P)H oxidoreductase YRKL	8
SMD_2621	N-acetyltransferase GCN5	72
SMD_2622	acetyltransferase	43
SMD_2623	hypothetical protein	47
SMD_2624	hypothetical protein	65
SMD_2625	hypothetical protein	58
SMD_2626	hypothetical protein	26
SMD_2627	lytic enzyme	28
SMD_2628	hypothetical protein	64
SMD_2631	hypothetical protein	250
SMD_2633	inner membrane protein forms channel for type IV secretion of T-	505
SMD_2634	major pilus subunit of type IV secretion complex (VirB2)	821
SMD_2635	Bores hole in peptidoglycan layer allowing type IV secretion comp	140
SMD_2637	inner membrane protein forms channel for type IV secretion of T-	161
SMD_2639	inner membrane protein forms channel for type IV secretion of T-	90
SMD_2640	hypothetical protein	151
SMD_2642	hypothetical protein	34
SMD_2643	Guanosine-3',5'-bis(Diphosphate) 3'-pyrophosphohydrolase	10

SMD_2644	MFS transporter	39
SMD_2645	merR family transcriptional regulator	33
SMD_2646	2,4-dienoyl-CoA reductase	3
SMD_2647	hypothetical protein	78
SMD_2648	hypothetical protein	9
SMD_2649	hypothetical protein	15
SMD_2650	hypothetical protein	10
SMD_2651	Sensory box histidine kinase/response regulator	19
SMD_2652	2-polyprenyl-6-methoxyphenol hydroxylase and related FAD-dep	33
SMD_2653	TetR family transcriptional regulator	13
SMD_2654	iron receptor	11
SMD_2655	hypothetical protein	8
SMD_2656	two-component response regulator	3
SMD_2657	two-component system protein	3
SMD_2658	hypothetical protein	3
SMD_2661	hypothetical protein	5
SMD_2662	signal transduction protein with EFhand domain	5
SMD_2663	hemolysin related protein	70
SMD_2664	hypothetical protein	80
SMD_2665	hemolysin related protein	22
SMD_2666	hypothetical protein	40
SMD_2667	hypothetical protein	5
SMD_2669	HxIR family transcriptional regulator	28
SMD_2670	alcohol dehydrogenase	11
SMD_2671	DNA helicase IV	31
SMD_2673	hypothetical protein	24
SMD_2674	LysR family transcriptional regulator	80
SMD_2676	hypothetical protein	41
SMD_2678	Ferric siderophore transport system, periplasmic binding protein	30
SMD_2679	Ferric siderophore transport system, periplasmic binding protein	51
SMD_2683	hypothetical protein	187
SMD_2684	hypothetical protein	83
SMD_2685	Poly(Hydroxyalcanoate) granule associated protein	63
SMD_2686	hypothetical protein	32
SMD_2687	hypothetical protein	59
SMD_2688	Histidine utilization repressor	37
SMD_2689	formiminoglutamic iminohydrolase	31
SMD_2692	N-formylglutamate deformylase	25
SMD_2693	urocanate hydratase	38
SMD_2694	beta-lactamase	22
SMD_2695	TonB-dependent receptor	23
SMD_2696	hypothetical protein	120
SMD_2697	hypothetical protein	3
SMD_2698	hypothetical protein	22
SMD_2699	TetR family transcriptional regulator	30
SMD_2700	mesenchymal stem cell protein DSCD75	11
SMD_2701	hypothetical protein	19
SMD_2702	lipolytic protein G-D-S-L	56
SMD_2703	membrane-bound lytic murein transglycosylase	19
SMD_2704	hypothetical protein	34
SMD_2705	hypothetical protein	12
SMD_2706	dipeptidyl aminopeptidases/acylaminoacyl-peptidases	49

SMD_2707	hypothetical protein	8
SMD_2708	hypothetical protein	58
SMD_2709	hypothetical protein	57
SMD_2710	beta-lactamase	33
SMD_2711	hypothetical protein	13
SMD_2712	LysR family transcriptional regulator	17
SMD_2713	quinone oxidoreductase	40
SMD_2714	hypothetical protein	17
SMD_2715	hypothetical protein	21
SMD_2719	hypothetical protein	64
SMD_2721	Histone acetyltransferase HPA2 and related acetyltransferases	74
SMD_2723	periplasmic aromatic amino acid aminotransferase beta precursor	26
SMD_2729	hypothetical protein	84
SMD_2732	hypothetical protein	147
SMD_2733	hypothetical protein	114
SMD_2735	carbonic anhydrase	93
SMD_2737	Kynureninase	57
SMD_2740	hypothetical protein	66
SMD_2741	oxidoreductase	40
SMD_2742	hypothetical protein	40
SMD_2743	5'-nucleotidase	62
SMD_2744	NAD kinase	49
SMD_2745	NAD-specific glutamate dehydrogenase	615
SMD_2746	Plectin 1	4
SMD_2747	transcriptional regulator TetR	55
SMD_2750	hypothetical protein	30
SMD_2752	ArsR family transcriptional regulator / Methyltransferase	81
SMD_2755	3-phenylpropionic acid transporter	19
SMD_2756	O-antigen acetylase	70
SMD_2757	nucleoprotein/polynucleotide-associated enzyme	216
SMD_2758	hypothetical protein	191
SMD_2759	UDP-glucose dehydrogenase	577
SMD_2760	FKBP-type peptidyl-prolyl cis-trans isomerase FkpA	515
SMD_2762	hypothetical protein	48
SMD_2763	GntR family transcriptional regulator	35
SMD_2764	multidrug ABC transporter ATPase	47
SMD_2765	ABC transporter permease	41
SMD_2766	hypothetical protein	40
SMD_2767	hypothetical protein	62
SMD_2768	hypothetical protein	99
SMD_2771	marR family transcriptional regulator	4
SMD_2772	hypothetical protein	83
SMD_2773	hypothetical protein	63
SMD_2777	hypothetical protein	2
SMD_2778	hypothetical protein	1
SMD_2780	TonB-dependent receptor	3
SMD_2782	hypothetical protein	29
SMD_2783	oxidoreductase	34
SMD_2785	branched-chain alpha-keto acid dehydrogenase, E1 component su	5
SMD_2787	GNAT family acetyltransferase	58
SMD_2788	hypothetical protein	288
SMD_2789	hypothetical protein	106

SMD_2791	hesA/MoeB/ThiF family protein	146
SMD_2792	hypothetical protein	19
SMD_2793	peptidoglycan-associated outer membrane lipoprotein	216
SMD_2795	hypothetical protein	17
SMD_2796	phospholipase A1 precursor	57
SMD_2799	hypothetical protein	46
SMD_2800	Fumarate hydratase class I, aerobic	271
SMD_2801	RNA polymerase ECF-type sigma factor	13
SMD_2802	4-carboxymuconolactone decarboxylase	6
SMD_2803	ABC transporter ATP-binding protein	24
SMD_2806	dipeptidyl carboxypeptidase Dcp	303
SMD_2808	hypothetical protein	133
SMD_2809	hypothetical protein	67
SMD_2810	hypothetical protein	131
SMD_2811	hypothetical protein	121
SMD_2812	Oligopeptide transporter	161
SMD_2813	hypothetical protein	72
SMD_2815	ribonuclease	32
SMD_2816	hypothetical protein	53
SMD_2817	hypothetical protein	70
SMD_2818	hypothetical protein	272
SMD_2820	Ferric siderophore transport system, periplasmic binding protein	108
SMD_2824	hypothetical protein	17
SMD_2825	hypothetical protein	34
SMD_2826	sugar ABC transporter, sugar permease protein 2 USSDB1D	44
SMD_2827	sugar ABC transporter, sugar permease protein 1 USSDB1C	29
SMD_2828	sugar ABC transporter, periplasmic sugar-binding protein USSDB1B	33
SMD_2829	hypothetical protein	38
SMD_2830	OmpA-like protein	274
SMD_2831	LacI family transcriptional regulator	103
SMD_2832	Cell division protein BofA	126
SMD_2837	AraC family transcriptional regulator	12
SMD_2838	multidrug resistance protein D	19
SMD_2839	hypothetical protein	111
SMD_2840	hydrolase	128
SMD_2841	class I and II aminotransferase	106
SMD_2845	cytochrome c-type biogenesis protein CcmD,interacts with CcmCI	69
SMD_2852	hypothetical protein	47
SMD_2857	hypothetical protein	728
SMD_2860	MFS transporter	32
SMD_2867	hypothetical protein	76
SMD_2870	N-acetylglutamate synthase	36
SMD_2871	acetylglutamate kinase	44
SMD_2874	N-acetylornithine carbamoyltransferase	65
SMD_2875	hypothetical protein	41
SMD_2876	hypothetical protein	308
SMD_2879	Drug:proton antiporter	58
SMD_2880	C4-type zinc finger protein, DksA/TraR family	289
SMD_2883	peptidase	67
SMD_2884	pro-zeta-carotene desaturase, polycopene producing	74
SMD_2885	Similar to phosphoglycolate phosphatase,clustered with ubiquinol	76
SMD_2887	S-adenosylhomocysteine deaminase	137

SMD_2889	Lysine 2,3-aminomutase	79
SMD_2890	diguanylate cyclase	38
SMD_2891	phosphate-binding protein	50
SMD_2895	glutamyl-Q-tRNA synthetase	32
SMD_2897	phbF	92
SMD_2898	hypothetical protein	61
SMD_2899	hypothetical protein	49
SMD_2903	YjeF protein	85
SMD_2904	Iron-sulfur cluster-binding protein	29
SMD_2906	Zn-dependent protease with chaperone function	30
SMD_2907	serine/threonine kinase	44
SMD_2909	TonB-dependent receptor	142
SMD_2911	hypothetical protein	16
SMD_2912	hypothetical protein	16
SMD_2913	3-oxoacyl-ACP reductase	13
SMD_2914	ADA regulatory protein / Methylated-DNA--protein-cysteine meth	19
SMD_2915	quinone oxidoreductase	29
SMD_2919	hypothetical protein	33
SMD_2920	acyl-CoA dehydrogenase	60
SMD_2921	HNH endonuclease family protein	76
SMD_2923	hypothetical protein	86
SMD_2924	hypothetical protein	104
SMD_2925	LuxR family two component transcriptional regulator	11
SMD_2926	hypothetical protein	3
SMD_2927	ATP/GTP-binding protein	6
SMD_2928	Roadblock/LC7 family protein	3
SMD_2929	hypothetical protein	10
SMD_2930	hypothetical protein	1
SMD_2931	hypothetical protein	4
SMD_2932	subtilisin-like serine proteases	75
SMD_2933	hypothetical protein	69
SMD_2934	TetR family transcriptional regulator	70
SMD_2935	Ethidium bromide-methyl viologen resistance protein EmrE	69
SMD_2936	hypothetical protein	108
SMD_2938	Aspartate racemase	23
SMD_2939	hypothetical protein	40
SMD_2940	hypothetical protein	8
SMD_2942	hypothetical protein	22
SMD_2943	hypothetical protein	26
SMD_2945	merR family transcriptional regulator	235
SMD_2953	hypothetical protein	20
SMD_2954	hypothetical protein	14
SMD_2955	iron-regulated membrane protein	27
SMD_2956	biphenyl-2,3-diol 1,2-dioxygenase	25
SMD_2984	Oxidoreductase	310
SMD_2985	choline-sulfatase	52
SMD_2986	hypothetical protein	125
SMD_2987	polysaccharide deacetylase	76
SMD_2991	hypothetical protein	51
SMD_2993	glycine cleavage system transcriptional activator	12
SMD_2994	KlaB protein	53
SMD_2995	hypothetical protein	21

SMD_2996	hypothetical protein	37
SMD_2997	hypothetical protein	91
SMD_2998	hypothetical protein	33
SMD_3001	glyoxalase	108
SMD_3004	glyoxylate reductase	157
SMD_3007	cytochrome oxidase biogenesis protein Sco1/SenC/PrrC copper m	51
SMD_3009	hypothetical protein	190
SMD_3011	ATPase	81
SMD_3013	transmembrane protein	66
SMD_3014	ribosomal protein S12p Asp88 methylthiotransferase	135
SMD_3015	phage tail fiber protein	72
SMD_3016	hypothetical protein	87
SMD_3017	phage protein	140
SMD_3018	hypothetical protein	116
SMD_3019	hypothetical protein	184
SMD_3020	hypothetical protein	847
SMD_3021	hypothetical protein	692
SMD_3023	diadenosine tetraphosphate (Ap4A) hydrolase and other HIT fami	69
SMD_3024	hypothetical protein	117
SMD_3026	Scaffold protein for [4Fe-4S] cluster assembly ApbC, MRP-like	132
SMD_3027	TonB-dependent receptor	834
SMD_3028	TonB-dependent receptor	23
SMD_3029	prolyl oligopeptidase family protein	5
SMD_3030	metallopeptidase	166
SMD_3031	metallopeptidase	238
SMD_3032	3-demethylubiquinone-9 3-methyltransferase	15
SMD_3033	beta-carotene ketolase	21
SMD_3034	integral membrane rhomboid family serine protease MJ0610.1	99
SMD_3035	methylated-DNA-protein-cysteine S-methyltransferase related pr	25
SMD_3036	drug/metabolite transporter permease	42
SMD_3039	transport protein	48
SMD_3041	NLP/P60 family protein	31
SMD_3042	cell wall-associated hydrolase	220
SMD_3043	proton/glutamate symport protein Sodium/glutamate symport pr	38
SMD_3045	hypothetical protein	65
SMD_3049	hypothetical protein	244
SMD_3050	TldE/PmbA protein	60
SMD_3051	alpha helix protein	177
SMD_3053	hypothetical protein	41
SMD_3056	hypothetical protein	64
SMD_3057	Ferric siderophore transport system, periplasmic binding protein	16
SMD_3058	TonB-dependent receptor	45
SMD_3060	Xylanase	19
SMD_3065	LPS-assembly lipoprotein RlpB precursor (Rare lipoprotein B)	199
SMD_3067	hypothetical protein	44
SMD_3069	peptidoglycan binding protein	61
SMD_3070	two component sensor	32
SMD_3071	hypothetical protein	26
SMD_3072	hypothetical protein	32
SMD_3073	hypothetical protein	27
SMD_3074	transporter	98
SMD_3075	preQ0 transporter	37

SMD_3076	hypothetical protein	39
SMD_3077	beta-lactamase	26
SMD_3078	hypothetical protein	13
SMD_3079	hypothetical protein	84
SMD_3081	phosphoserine phosphatase	118
SMD_3083	translation initiation inhibitor, yjgF family	328
SMD_3086	hypothetical protein	33
SMD_3087	hypothetical protein	24
SMD_3088	hypothetical protein	57
SMD_3091	hypothetical protein	141
SMD_3092	hypothetical protein	124
SMD_3093	hypothetical protein	51
SMD_3094	hypothetical protein	20
SMD_3095	RNA polymerase ECF-type sigma factor	15
SMD_3096	hypothetical protein	4
SMD_3097	Small-conductance mechanosensitive channel	76
SMD_3098	hypothetical protein	41
SMD_3099	nucleoprotein/polynucleotide-associated enzyme	107
SMD_3100	metal-dependent hydrolase	26
SMD_3102	cardiolipin synthase	27
SMD_3103	response regulator	30
SMD_3106	3-ketoacyl-CoA thiolase	102
SMD_3107	outer membrane protein	5010
SMD_3108	hypothetical protein	37
SMD_3109	acyl-CoA dehydrogenase	18
SMD_3110	mRNA 3-end processing factor	7
SMD_3112	helicase domain-containing protein	4
SMD_3113	hypothetical protein	23
SMD_3114	hypothetical protein	47
SMD_3115	Oxidoreductase	71
SMD_3120	2-hydroxychromene-2-carboxylate isomerase/DsbA-like thioredoxin	110
SMD_3121	hypothetical protein	73
SMD_3123	response regulator	194
SMD_3127	hypothetical protein	177
SMD_3130	Serine protease MucD/AlgY associated with sigma factor RpoE	167
SMD_3133	enoyl-CoA hydratase	46
SMD_3134	Pirin-like protein	19
SMD_3136	hypothetical protein	60
SMD_3137	Pirin	28
SMD_3139	hypothetical protein	46
SMD_3140	hypothetical protein	46
SMD_3141	glyoxalase/bleomycin resistance protein/dioxygenase precursor	31
SMD_3142	two-component system sensor protein	64
SMD_3143	two-component system regulatory protein	115
SMD_3144	hypothetical protein	45
SMD_3145	hypothetical protein	22
SMD_3146	inner membrane protein	31
SMD_3147	dipeptidyl carboxypeptidase	118
SMD_3148	hypothetical protein	74
SMD_3149	Siderophore-interacting protein	11
SMD_3154	DNA binding 3-demethylubiquinone-9 3-methyltransferase domain	13
SMD_3155	amino acid transporter	53

SMD_3156	AraC family transcriptional regulator	73
SMD_3158	hypothetical protein	3
SMD_3159	hypothetical protein	17
SMD_3160	hypothetical protein	48
SMD_3161	methyl-accepting chemotaxis protein I (serine chemoreceptor prc	128
SMD_3162	ErfK/YbiS/YcfS/YnhG family protein	3
SMD_3163	M23/M37 family peptidase	6
SMD_3165	hypothetical protein	52
SMD_3166	inner membrane protein YjeT (clustered with HflC)	82
SMD_3169	alcohol dehydrogenase	26
SMD_3172	peroxiredoxin	38
SMD_3175	alpha-2-macroglobulin	50
SMD_3177	prpF protein	59
SMD_3178	plasmid stabilization system	50
SMD_3179	hypothetical protein	101
SMD_3184	transmembrane DoxX protein	45
SMD_3186	D-glycerate 3-kinase	46
SMD_3187	hypothetical protein	24
SMD_3190	hypothetical protein	38
SMD_3192	MFS transporter	19
SMD_3193	Histidine kinase/response regulator hybrid protein	46
SMD_3194	Histidine kinase/response regulator hybrid protein	14
SMD_3195	hypothetical protein	14
SMD_3196	cytochrome B561	16
SMD_3197	signal peptide protein	43
SMD_3198	hypothetical protein	20
SMD_3200	hydrolase	20
SMD_3201	Homoserine dehydrogenase	5
SMD_3204	membrane proteins related to metalloendopeptidases	12
SMD_3206	membrane protein hemolysin III	64
SMD_3208	FOG: CBS domain	98
SMD_3212	hypothetical protein	188
SMD_3213	TonB-dependent receptor	97
SMD_3214	TetR family transcriptional regulator	148
SMD_3215	hydrolase	8
SMD_3217	hypothetical protein	4
SMD_3218	hypothetical protein	13
SMD_3219	hypothetical protein	17
SMD_3220	beta-lactamase	217
SMD_3222	LysR family transcriptional regulator	19
SMD_3223	histone H1	380
SMD_3226	transmembrane protein	2
SMD_3227	hypothetical protein	68
SMD_3228	nucleoside triphosphate pyrophosphohydrolase MazG	125
SMD_3235	hypothetical protein	45
SMD_3236	chemotaxis response regulator containing a CheY-like receiver dc	51
SMD_3243	TonB protein	49
SMD_3244	hypothetical protein	87
SMD_3246	inosine-uridine preferring nucleoside hydrolase	4
SMD_3247	hypothetical protein	158
SMD_3249	glycosyltransferase	49
SMD_3250	hypothetical protein	40

SMD_3252	hypothetical protein	77
SMD_3254	Non-specific DNA-binding protein Dps / Iron-binding ferritin-like ε	301
SMD_3259	N-acetyltransferase GCN5	37
SMD_3260	hypothetical protein	67
SMD_3261	hypothetical protein	14
SMD_3262	response regulator	26
SMD_3264	esterase	232
SMD_3265	hypothetical protein	379
SMD_3266	prophage LambdaSo, lysozyme	522
SMD_3267	hypothetical protein	633
SMD_3268	hypothetical protein	462
SMD_3269	hypothetical protein	223
SMD_3277	hypothetical protein	3
SMD_3278	hypothetical protein	2
SMD_3280	signal peptide	2
SMD_3285	hypothetical protein	8
SMD_3286	hypothetical protein	6
SMD_3292	hypothetical protein	6
SMD_3297	hypothetical protein	0
SMD_3298	hypothetical protein	10
SMD_3299	hypothetical protein	9
SMD_3300	hypothetical protein	12
SMD_3301	hypothetical protein	7
SMD_3302	hypothetical protein	9
SMD_3303	phage-related integrase	19
SMD_3305	hypothetical protein	11
SMD_3306	queuosine biosynthesis protein QueC	97
SMD_3307	queuosine biosynthesis radical SAM protein QueE	69
SMD_3308	TPR repeat containing exported protein Putative periplasmic prote	444
SMD_3309	Outer membrane lipoprotein omp16	1852
SMD_3314	4-hydroxybenzoyl-CoA thioesterase	141
SMD_3319	hypothetical protein	416
SMD_3320	Cob(I)alamin adenosyltransferase	94
SMD_3321	GNAT family acetyltransferase	163
SMD_3322	hypothetical protein	357
SMD_3324	hypothetical protein	19
SMD_3325	hypothetical protein	71
SMD_3326	Na /H exchange protein	42
SMD_3327	L2 beta-lactamase	23
SMD_3329	ABC transporter ATP-binding protein	149
SMD_3330	TonB-dependent receptor	24
SMD_3331	Glutathione-regulated potassium-efflux system protein KefB	104
SMD_3332	transcriptional regulator RstA	30
SMD_3333	hypothetical protein	22
SMD_3334	MltA-interacting MipA	50
SMD_3335	hypothetical protein	233
SMD_3337	hypothetical protein	26
SMD_3338	glutathione S-transferase	4
SMD_3339	hypothetical protein	29
SMD_3341	hypothetical protein	39
SMD_3342	lipoprotein	29
SMD_3343	ferric enterobactin receptor	8

SMD_3345	glucoamylase	28
SMD_3347	hypothetical protein	42
SMD_3348	hypothetical protein	49
SMD_3349	hypothetical protein	92
SMD_3352	Secretory lipase precursor	13
SMD_3361	Leader peptidase (Prepilin peptidase)	126
SMD_3363	hypothetical protein	6
SMD_3365	ISStmaD1 Transposase A	65
SMD_3366	ISStmaD1 Transposase B	37
SMD_3367	two-component system sensor protein	80
SMD_3368	two-component system regulatory protein	125
SMD_3369	hypothetical protein	115
SMD_3370	hypothetical protein	18
SMD_3371	hypothetical protein	32
SMD_3373	hypothetical protein	55
SMD_3374	colicin V secretion ABC transporter ATP-binding protein	73
SMD_3376	phospholipase/lecithinase/hemolysin	184
SMD_3380	sulfur deprivation response regulator	77
SMD_3381	hypothetical protein	78
SMD_3382	hypothetical protein	315
SMD_3383	fumarylacetoacetate (FAA) hydrolase	53
SMD_3385	Aminopeptidase	74
SMD_3386	Sodium/alanine symporter	16
SMD_3387	hypothetical protein	18
SMD_3389	sodium/alanine symporter family protein	48
SMD_3390	acetyltransferase	29
SMD_3393	outer membrane receptor proteins, mostly Fe transport	26
SMD_3394	hypothetical protein	39
SMD_3395	hypothetical protein	13
SMD_3398	Macro domain, possibly ADP-ribose binding module	157
SMD_3399	hypothetical protein	295
SMD_3404	transmembrane protein	60
SMD_3405	hypothetical protein	46
SMD_3407	Outer membrane protein W precursor	4515
SMD_3408	endonuclease	137
SMD_3409	beta-lactamase	117
SMD_3410	hypothetical protein	27
SMD_3411	Ferric siderophore transport system, periplasmic binding protein	19
SMD_3413	flavodoxin	9
SMD_3414	acetyl-CoA hydrolase	46
SMD_3415	HigA protein (antitoxin to HigB)	62
SMD_3417	proton/glutamate symport protein Sodium/glutamate symport pr	124
SMD_3418	protein BatD	36
SMD_3419	hypothetical protein	30
SMD_3421	hypothetical protein	36
SMD_3422	hypothetical protein	55
SMD_3423	moxR-like ATPase in aerotolerance operon	89
SMD_3430	hypothetical protein	37
SMD_3431	hypothetical protein	7
SMD_3437	hypothetical protein	5
SMD_3442	endoribonuclease L-PSP	483
SMD_3454	protein YicC	87

SMD_3456	glyoxalase	82
SMD_3457	nucleoside 5-triphosphatase RdgB (dHATP, dITP,XTP-specific)	99
SMD_3458	radical SAM protein	53
SMD_3459	thymidine phosphorylase	67
SMD_3460	hypothetical protein	42
SMD_3462	Xaa-Pro aminopeptidase	130
SMD_3463	hypothetical protein	208
SMD_3464	hypothetical protein	210
SMD_3465	hypothetical protein	76
SMD_3467	5-formyltetrahydrofolate cyclo-ligase	39
SMD_3468	hypothetical protein	64
SMD_3470	hypothetical protein	83
SMD_3475	Azurin	89
SMD_3476	hypothetical protein	40
SMD_3478	Potassium voltage-gated channel subfamily KQT	50
SMD_3479	hypothetical protein	80
SMD_3480	hypothetical protein	123
SMD_3481	short-chain dehydrogenase	50
SMD_3482	hypothetical protein	53
SMD_3483	wall associated protein	31
SMD_3484	hypothetical protein	34
SMD_3485	hypothetical protein	99
SMD_3486	DedA protein	114
SMD_3487	hypothetical protein	112
SMD_3491	hypothetical protein	35
SMD_3492	hypothetical protein	54
SMD_3493	pyrophosphate-energized proton pump	10
SMD_3494	Ferric siderophore transport system, periplasmic binding protein	6
SMD_3495	biopolymer transport protein ExbD/ToIR	15
SMD_3496	motA/ToIQ/ExbB proton channel family protein	9
SMD_3497	hypothetical protein	14
SMD_3499	hypothetical protein	71
SMD_3500	Iron siderophore receptor protein	12
SMD_3501	Iron siderophore sensor protein	8
SMD_3503	hypothetical protein	2
SMD_3504	hypothetical protein	2
SMD_3506	response regulator	40
SMD_3507	transmembrane protein	13
SMD_3508	TonB-dependent receptor	1180
SMD_3509	transcriptional regulator	188
SMD_3511	hypothetical protein	17
SMD_3514	gamma-glutamyltranspeptidase	18
SMD_3515	hypothetical protein	3
SMD_3516	ketol-acid reductoisomerase	20
SMD_3525	dehydrogenase	11
SMD_3526	LysR family transcriptional regulator PA2877	10
SMD_3529	TetR family transcriptional regulator	171
SMD_3532	cationic amino acid transporter	4
SMD_3535	hypothetical protein	50
SMD_3536	glycosyltransferase	104
SMD_3537	hypothetical protein	414
SMD_3538	hypothetical protein	0

SMD_3539	alpha-1,2-mannosidase	42
SMD_3540	hypothetical protein	174
SMD_3544	Sensor histidine kinase	16
SMD_3545	LuxR family transcriptional regulator	52
SMD_3546	periplasmic iron-binding protein	23
SMD_3547	two-component system sensor protein	37
SMD_3549	phosphate-specific outer membrane porin OprP Pyrophosphate-sp	98
SMD_3552	TonB-dependent receptor	6
SMD_3553	hypothetical protein	30
SMD_3555	Aspartate aminotransferase	127
SMD_3556	Lysophospholipase L1 and related esterases	84
SMD_3557	hypothetical protein	52
SMD_3558	acetylxylan esterase	73
SMD_3559	glutaredoxin-like protein	340
SMD_3560	transmembrane protein	80
SMD_3562	hypothetical protein	33
SMD_3563	amidohydrolase	14
SMD_3564	hypothetical protein	14
SMD_3565	2-hydroxychromene-2-carboxylate isomerase	12
SMD_3566	hypothetical protein	30
SMD_3567	hypothetical protein	56
SMD_3568	tripartite multidrug resistance system outer membrane protein	4
SMD_3569	tripartite multidrug resistance system membrane fusion protein	1
SMD_3570	tripartite multidrug resistance system inner membrane protein	2
SMD_3571	transcriptional regulator	7
SMD_3572	Universal stress protein family	4
SMD_3573	hypothetical protein	3
SMD_3574	FOG: GGDEF domain	5
SMD_3575	S-formylglutathione hydrolase	51
SMD_3576	hypothetical protein	92
SMD_3578	hypothetical protein	30
SMD_3579	transcriptional regulator	21
SMD_3580	N-ethylmaleimide reductase	14
SMD_3581	hypothetical protein	79
SMD_3582	lyase	24
SMD_3583	hypothetical protein	12
SMD_3584	TetR family transcriptional regulator	47
SMD_3585	LysR family transcriptional regulator	23
SMD_3586	alcohol dehydrogenase	35
SMD_3587	glutamate--cysteine ligase	78
SMD_3588	nodulin 21-like protein	30
SMD_3589	AraC family transcriptional regulator	19
SMD_3590	methyl parathion hydrolase	18
SMD_3592	cytochrome c4	58
SMD_3595	endonuclease/exonuclease/phosphatase family protein	134
SMD_3596	hypothetical protein	12
SMD_3597	AsnC family transcriptional regulator	11
SMD_3598	M23/M37 family peptidase	5
SMD_3600	TonB-dependent receptor	4
SMD_3603	lytic murein transglycosylase	54
SMD_3605	hypothetical protein	175
SMD_3606	hypothetical protein	17

SMD_3607	nisin-resistance protein	24
SMD_3609	hypothetical protein	1
SMD_3610	hypothetical protein	4
SMD_3611	N-acetylglucosamine related transporter, NagX	30
SMD_3613	glucosamine-6-phosphate deaminase [isomerizing], alternative	47
SMD_3614	LacI family transcriptional regulator	39
SMD_3615	N-acetyl-D-glucosamine permease	45
SMD_3616	N-acetylglucosamine kinase	37
SMD_3617	N-acetylglucosamine-regulated TonB-dependent outer membrane	39
SMD_3619	hypothetical protein	27
SMD_3620	hypothetical protein	71
SMD_3621	folM Alternative dihydrofolate reductase 1	48
SMD_3622	2-amino-4-hydroxy-6-hydroxymethyldihydropteridine pyrophosphat	92
SMD_3623	hypothetical protein	12
SMD_3624	hypothetical protein	55
SMD_3625	Histidine kinase/response regulator hybrid protein	119
SMD_3626	two-component system response regulator	201
SMD_3627	two-component system sensor protein	85
SMD_3628	Osmotically inducible protein OsmY	16
SMD_3629	Oxidoreductase	25
SMD_3630	6-phosphogluconate dehydrogenase	81
SMD_3631	hypothetical protein	24
SMD_3632	hypothetical protein	71
SMD_3633	tail-specific protease	182
SMD_3636	lipoate regulatory protein YbeD	707
SMD_3637	outer membrane protein	34
SMD_3647	sugar kinase	122
SMD_3648	HAD-superfamily hydrolase	86
SMD_3649	hypothetical protein	88
SMD_3650	Aminopeptidase N	191
SMD_3653	hypothetical protein	9
SMD_3654	hypothetical protein	24
SMD_3655	hypothetical protein	53
SMD_3660	Oxidoreductase	47
SMD_3664	hypothetical protein	239
SMD_3666	hypothetical protein	187
SMD_3667	hypothetical protein	30
SMD_3669	aspartate/tyrosine/aromatic aminotransferase	93
SMD_3670	prolyl oligopeptidase	137
SMD_3671	hypothetical protein	45
SMD_3672	outer membrane lipoprotein	115
SMD_3673	methionine ABC transporter permease	56
SMD_3674	methionine ABC transporter ATP-binding protein	48
SMD_3675	hypothetical protein	65
SMD_3676	hypothetical protein	262
SMD_3677	hypothetical protein	100
SMD_3678	oxidoreductase	48
SMD_3680	hypothetical protein	34
SMD_3681	cysteine synthase B	81
SMD_3682	Lactoylglutathione lyase	130
SMD_3683	Lactoylglutathione lyase and related lyases	92
SMD_3684	inosine-5'-monophosphate dehydrogenase	135

SMD_3686	ABC transporter permease	1
SMD_3687	ABC transporter ATP-binding protein	3
SMD_3688	ABC transporter ATP-binding protein	3
SMD_3689	ABC transporter permease	6
SMD_3690	hypothetical protein	6
SMD_3691	histidine kinase/response regulator hybrid protein	39
SMD_3692	nitrogen regulation protein NtrY	38
SMD_3693	N-acetyltransferase GCN5	81
SMD_3695	hypothetical protein	46
SMD_3696	hypothetical protein	48
SMD_3705	hypothetical protein	365
SMD_3706	hypothetical protein	6
SMD_3707	hypothetical protein	26
SMD_3710	G:T/U mismatch-specific uracil/thymine DNA-glycosylase	11
SMD_3711	Outer membrane protein W precursor	1427
SMD_3714	methionine ABC transporter substrate-binding protein	138
SMD_3715	hypothetical protein	150
SMD_3716	hypothetical protein	37
SMD_3717	salt-induced outer membrane protein	231
SMD_3719	Autolysis response regulator LytR	46
SMD_3720	autolysin sensor kinase	38
SMD_3722	glucans biosynthesis glucosyltransferase H	25
SMD_3724	hypothetical protein	219
SMD_3725	methyl-accepting chemotaxis protein I (serine chemoreceptor prc	38
SMD_3726	UDP-glucose 4-epimerase	42
SMD_3727	peptidase S41	4
SMD_3728	marR family transcriptional regulator	19
SMD_3729	hypothetical protein	17
SMD_3730	General stress protein	4
SMD_3731	major facilitator superfamily permease	7
SMD_3732	TetR family transcriptional regulator	16
SMD_3733	Lactoylglutathione lyase and related lyases	23
SMD_3734	hypothetical protein	24
SMD_3735	hypothetical protein	43
SMD_3736	ABC transporter ATP-binding protein	4
SMD_3737	ABC transporter permease	3
SMD_3738	ABC transporter ATP-binding protein	3
SMD_3739	ABC transporter protein, ATP-binding component	3
SMD_3740	membrane translocator	3
SMD_3741	ISStmaD3 transposase (fusion ORF A and B)	3
SMD_3742	two-component response regulator	3
SMD_3743	hypothetical protein	11
SMD_3747	hypothetical protein	266
SMD_3748	hypothetical protein	45
SMD_3750	inner membrane protein YqjF	0
SMD_3751	hypothetical protein	5
SMD_3752	hypothetical protein	3
SMD_3753	Secreted and surface protein containing fasciclin-like repeats	4
SMD_3754	hypothetical protein	22
SMD_3755	hypothetical protein	45
SMD_3756	translation initiation inhibitor,yjgFfamily	34
SMD_3757	hypothetical protein	60

SMD_3758	hypothetical protein	16
SMD_3759	hypothetical protein	4
SMD_3760	ISStmaD1 Transposase B	15
SMD_3761	ISStmaD1 Transposase A	32
SMD_3762	integrase	82
SMD_3764	hypothetical protein	5
SMD_3769	hypothetical protein	31
SMD_3770	hypothetical protein	18
SMD_3771	Putative glycerophosphate (or ribitol phosphate) transferase relat	54
SMD_3773	lipid A core-O-antigen ligase and related enzymes	149
SMD_3774	Polymyxin resistance protein ArnT, undecaprenyl phosphate-alpha	46
SMD_3778	hypothetical protein	79
SMD_3781	fimbrial protein	120
SMD_3782	hypothetical protein	77
SMD_3784	sua5 YciO YrdC YwIC family protein	50
SMD_3785	hypothetical protein	34
SMD_3786	hypothetical protein	35
SMD_3788	hypothetical protein	10
SMD_3790	Na-driven multidrug efflux pump	82
SMD_3791	hypothetical protein	87
SMD_3792	hypothetical protein	131
SMD_3794	glutathione S-transferase-like protein	116
SMD_3795	hypothetical protein	47
SMD_3797	hypothetical protein	16
SMD_3799	endonuclease containing a URI domain	17
SMD_3802	hypothetical protein	67
SMD_3804	hypothetical protein	17
SMD_3805	hypothetical protein	18
SMD_3806	hypothetical protein	25
SMD_3807	marR family transcriptional regulator	27
SMD_3808	hypothetical protein	10
SMD_3809	DNA-binding response regulator	24
SMD_3810	hypothetical protein	4
SMD_3811	beta-lactamase	17
SMD_3812	hypothetical protein	67
SMD_3815	Extracellular ribonuclease precursor	5
SMD_3817	cytochrome c-type biogenesis protein DsbD,protein-disulfide redu	54
SMD_3818	cytochrome c-type biogenesis protein ResA	38
SMD_3819	iron-regulated membrane protein Iron-uptake factor PiuB	18
SMD_3820	chemotaxis protein	3
SMD_3822	glyoxalase	22
SMD_3823	hypothetical protein	10
SMD_3824	glycine cleavage system transcriptional activator	21
SMD_3825	hypothetical protein	29
SMD_3826	D-alanyl-D-alanine carboxypeptidase	25
SMD_3827	TetR family transcriptional regulator	75
SMD_3828	NAD(P)H dehydrogenase (quinone)	5
SMD_3829	hypothetical protein	17
SMD_3830	hypothetical protein	21
SMD_3831	hypothetical protein	0
SMD_3833	hypothetical protein	100
SMD_3836	hypothetical protein	140

SMD_3837	hypothetical protein	108
SMD_3839	transmembrane protein	47
SMD_3842	1-acyl-sn-glycerol-3-phosphate acyltransferase	10
SMD_3843	hypothetical protein	17
SMD_3844	Ser/Thr and Tyr protein phosphatase (dual specificity)	13
SMD_3845	lipase in cluster with Phosphatidate cytidyltransferase	25
SMD_3846	CDP-diacylglycerol--glycerol-3-phosphate 3-phosphatidyltransferase	31
SMD_3849	helix-turn-helix domain-containing protein	65
SMD_3852	Response regulator protein	140
SMD_3856	hypothetical protein	52
SMD_3858	hypothetical protein	205
SMD_3860	diguanylate cyclase	21
SMD_3861	hypothetical protein	68
SMD_3862	Isocitrate dehydrogenase kinase/phosphatase	10
SMD_3863	KilA-like protein	3
SMD_3864	hypothetical protein	1
SMD_3865	Roadblock/LC7	2
SMD_3866	ATP/GTP-binding protein	0
SMD_3867	hypothetical protein	1
SMD_3869	hypothetical protein	34
SMD_3870	hypothetical protein	30
SMD_3871	NADPH dependent preQ0 reductase	121
SMD_3872	N-acyl-L-amino acid amidohydrolase	42
SMD_3876	hypothetical protein	24
SMD_3877	dehydrogenase	27
SMD_3879	interferon-induced transmembrane protein	442
SMD_3880	interferon-induced transmembrane protein	696
SMD_3881	hypothetical protein	145
SMD_3882	transmembrane protein	94
SMD_3884	hesB_IscA_SufA family iron binding protein	236
SMD_3885	integral membrane protein CcmA	76
SMD_3886	hypothetical protein	69
SMD_3887	transmembrane protein	35
SMD_3888	two-component system regulatory protein	93
SMD_3889	two-component system sensor protein	48
SMD_3891	Bacterioferritin-associated ferredoxin	121
SMD_3897	2-octaprenyl-3-methyl-6-methoxy-1,4-benzoquinol hydroxylase	143
SMD_3901	sulfate transporter, CysZ-type	110
SMD_3902	phosphoserine phosphatase	88
SMD_3906	hypothetical protein	59
SMD_3908	diacylglycerol kinase catalytic domain	36
SMD_3909	N-acetyltransferase GCN5	50
SMD_3911	DnaJ related chaperone	32
SMD_3913	hypothetical protein	48
SMD_3921	Serine/threonine protein kinase	20
SMD_3922	hypothetical protein	14
SMD_3924	4-hydroxyphenylpyruvate dioxygenase	253
SMD_3925	marR family transcriptional regulator	64
SMD_3926	hypothetical protein	30
SMD_3927	hypothetical protein	176
SMD_3928	di-/tripeptide transporter	241
SMD_3929	Tryptophan 2,3-dioxygenase	61

SMD_3932	hypothetical protein	441
SMD_3933	dihydrolipoamide acyltransferase component of branched-chain a	298
SMD_3935	DeoR family transcriptional regulator	13
SMD_3936	Oxidoreductase	28
SMD_3937	hypothetical protein	28
SMD_3938	hypothetical protein	67
SMD_3939	Ubiquinone biosynthesis monooxygenase UbiB	5
SMD_3942	hypothetical protein	40
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SMD_3945	hypothetical protein	124
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SMD_3971	hypothetical protein	10
SMD_3972	hypothetical protein	7
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SMD_3983	GntR family transcriptional regulator domain / Aspartate aminotra	3
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SMD_4116	hypothetical protein	22
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SMD_4227	aldo-keto reductase	6
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SMD_4179	23S ribosomal RNA	68
SMD_4184	23S ribosomal RNA	66
SMD_0341	5S ribosomal RNA	5
SMD_0346	5S ribosomal RNA	7
SMD_0347	5S ribosomal RNA	5
SMD_4178	5S ribosomal RNA	5
SMD_4183	5S ribosomal RNA	7
SMD_3878	1-acyl-sn-glycerol-3-phosphate acyltransferase	48
SMD_2109	leucyl/phenylalanyl-tRNA--protein transferase	23
SMD_1321	acetyl-coenzyme A carboxyl transferase subunit alpha	347
SMD_3834	acetyl-CoA carboxylase biotin carboxyl carrier protein	568
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SMD_1685	pyruvate dehydrogenase E1 component	4
SMD_0412	pyruvate dehydrogenase E1 component	798
SMD_2022	aconitate hydratase	96
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SMD_4155	acetyl-CoA synthetase	138
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SMD_0720	alkyl hydroperoxide reductase protein C	728
SMD_0719	alkyl hydroperoxide reductase protein F	71
SMD_1680	alanyl-tRNA synthetase	240
SMD_1402	aldehyde dehydrogenase	2
SMD_3400	Fructose-bisphosphate aldolase class I	707
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SMD_2901	N-acetylmuramoyl-L-alanine amidase	165
SMD_3561	AMP nucleosidase	133
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SMD_1393	N-acetyl-anhydromuramyl-L-alanine amidase	112
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SMD_0331	Exodeoxyribonuclease III protein AmpN	84
SMD_3328	transcriptional activator AmpR	22
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SMD_1102	cyclomaltodextrin glucanotransferase	5
SMD_0697	bis(5'-nucleosyl)-tetrphosphatase	173
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SMD_1401	Adenosylmethionine-8-amino-7-oxononanoate aminotransferase	8
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SMD_2873	argininosuccinate synthase	127
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SMD_3832	3-dehydroquinate dehydratase	155
SMD_0132	Arsenate reductase	16
SMD_2797	Arsenate reductase	24
SMD_1496	Arsenate reductase	14
SMD_1498	Arsenate reductase	20
SMD_0134	Arsenic resistance protein ArsH	8
SMD_0133	ArsR family transcriptional regulator	20
SMD_1494	ArsR family transcriptional regulator	4
SMD_3003	Aspartate-semialdehyde dehydrogenase	175
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SMD_2784	asparagine synthetase	31
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SMD_0018	aromatic-amino-acid aminotransferase	230
SMD_3323	aspartyl-tRNA synthetase	229
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SMD_1181	Arginine-tRNA-protein transferase	30
SMD_3700	ATP synthase subunit alpha	1352
SMD_3704	ATP synthase subunit A	609
SMD_3697	ATP synthase subunit epsilon	840
SMD_3698	ATP synthase subunit beta	1327
SMD_3703	ATP synthase subunit C	2090
SMD_3702	ATP synthase subunit B	998
SMD_3699	ATP synthase subunit gamma	907
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SMD_2019	betaine aldehyde dehydrogenase	31
SMD_2020	HTH-type transcriptional regulator BetI	16
SMD_2490	High-affinity choline uptake protein BetT	26
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SMD_0379	beta-glucosidase	64
SMD_3231	Adenosylmethionine-8-amino-7-oxononanoate aminotransferase	72
SMD_4012	biotin synthase	16
SMD_4013	8-amino-7-oxononanoate synthase	58
SMD_4014	biotin synthesis protein bioH	36
SMD_0265	biotin--protein ligase	124
SMD_3412	transcriptional repressor, Blal/MecI family	20
SMD_2918	Outer membrane lipoprotein Blc	7
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SMD_1969	beta-mannosidase	26
SMD_4218	glutathione peroxidase	222
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SMD_0989	-	1
SMD_0274	-	9
SMD_0130	-	34
SMD_3608	-	5
SMD_3364	-	18
SMD_2322	-	19
SMD_0414	-	28
SMD_0048	-	7
SMD_4130	-	29
SMD_2179	-	0
SMD_2668	-	8
SMD_3962	-	10
SMD_1867	-	11
SMD_0622	-	10
SMD_1565	Lead, cadmium, zinc and mercury transporting ATPase	27
SMD_3510	transcriptional activator cadC	124
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SMD_1999	carbamoyl-phosphate synthase small subunit	224
SMD_2000	carbamoyl-phosphate synthase large subunit	225
SMD_3436	alpha-fimbriae major subunit	1
SMD_3433	alpha-fimbriae chaperone protein	14
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SMD_3171	DnaJ-class molecular chaperone CbpA	140
SMD_4061	chitin binding protein	5
SMD_4062	chitin binding protein	9
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SMD_3604	tRNA nucleotidyltransferase	60
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SMD_2846	cytochrome c-type biogenesis protein CcmE, heme chaperone	63
SMD_2847	cytochrome c heme lyase subunit CcmF	48
SMD_2848	cytochrome c-type biogenesis protein CcmG/DsbE,thiol: disulfide c	149
SMD_2849	cytochrome c heme lyase subunit CcmL	78
SMD_2539	CDP-diacylglycerol pyrophosphatase	47
SMD_1332	phosphatidate cytidyltransferase	175
SMD_3841	phosphatidate cytidyltransferase	32
SMD_2807	cyclopropane-fatty-acyl-phospholipid synthase	38
SMD_2554	beta-glucosidase	47
SMD_2036	signal transduction histidine kinase	149
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SMD_2027	chemotaxis response regulator protein-glutamate methylesterase	41
SMD_2028	chemotaxis protein CheD	40
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SMD_3336	clpB protein	258
SMD_0870	ATP-dependent Clp protease proteolytic subunit	405
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SMD_0871	ATP-dependent Clp protease ATP-binding subunit ClpX	560
SMD_0012	cardiolipin synthetase	26
SMD_4129	cardiolipin synthetase	13
SMD_1838	cytidylate kinase	836
SMD_1747	phosphopantetheine adenylyltransferase	240
SMD_3362	dephospho-CoA kinase	53
SMD_0266	Pantothenate kinase type III, CoaX-like	80
SMD_3652	cytosine deaminase	84
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SMD_3965	MG(2) Chelatase family protein / ComM-related protein	10
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SMD_3258	Copper resistance protein B	8
SMD_1486	Copper resistance protein C precursor	35
SMD_2364	Copper resistance protein C precursor	2
SMD_1485	Copper resistance protein D	26
SMD_2365	Copper resistance protein D	0

SMD_1487	Lead, cadmium, zinc and mercury transporting ATPase	9
SMD_1489	copper amine oxidase N-terminal protein	9
SMD_3256	hypothetical protein	29
SMD_1416	magnesium and cobalt transport protein CorA	53
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SMD_1274	two-component response regulator CreB	20
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SMD_1276	inner membrane protein CreD	11
SMD_3900	cyclic AMP receptor protein	408
SMD_1389	3-hydroxybutyryl-CoA dehydratase	74
SMD_1819	Cold shock protein CspA	2563
SMD_2794	major cold shock protein	354
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SMD_0351	carboxyl-terminal protease	141
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SMD_0149	Cobalt-zinc-cadmium resistance protein CzcA Cation efflux system	7
SMD_2139	Cobalt-zinc-cadmium resistance protein CzcA Cation efflux system	155
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SMD_0911	Cobalt-zinc-cadmium resistance protein CzcA Cation efflux system	5
SMD_0910	Cobalt-zinc-cadmium resistance protein CzcA Cation efflux system	7
SMD_2132	Cobalt/zinc/cadmium efflux RND transporter,membrane fusion protein	10
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SMD_3816	periplasmic divalent cation tolerance protein cutA	47
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SMD_2850	cytochrome c heme lyase subunit CcmH	62
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SMD_3979	cytochrome O ubiquinol oxidase subunit II	2
SMD_1214	cytochrome O ubiquinol oxidase subunit I	1015
SMD_3978	cytochrome O ubiquinol oxidase subunit I	5
SMD_1215	cytochrome O ubiquinol oxidase subunit III	911
SMD_3977	cytochrome O ubiquinol oxidase subunit III	5
SMD_1216	cytochrome O ubiquinol oxidase subunit IV	718
SMD_3976	cytochrome O ubiquinol oxidase subunit IV	4
SMD_0367	heme O synthase, protoheme IX farnesyltransferase	117
SMD_3396	Regulatory protein CysB	27
SMD_2430	sulfite reductase [NADPH] flavoprotein alpha-component	3
SMD_3397	cysteine synthase	32
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SMD_1118	transcriptional (co)regulator CytR	17
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SMD_3295	hypothetical protein	23
SMD_3638	D-alanyl-D-alanine carboxypeptidase	322
SMD_0483	D-amino acid dehydrogenase small subunit	250
SMD_1709	dihydrodipicolinate synthase	179
SMD_1998	dihydrodipicolinate reductase	74
SMD_1347	2,3,4,5-tetrahydropyridine-2,6-dicarboxylate N-succinyltransferase	215
SMD_1350	N-succinyl-L,L-diaminopimelate desuccinylase	69
SMD_3665	diaminopimelate epimerase	257
SMD_1253	Aminotransferase, class III	633
SMD_1823	ATP-dependent RNA helicase DbpA	91
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SMD_3542	C4-dicarboxylate transport protein	26
SMD_0180	D-alanine--D-alanine ligase	87
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SMD_1296	cold-shock DEAD-box protein A	341
SMD_3777	peptide deformylase	205
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SMD_2456	diacylglycerol kinase	6
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SMD_0176	Hydrolase, alpha/beta fold family protein, in hypothetical gene cl	77
SMD_4039	ATP-dependent helicase DinG/Rad3	80
SMD_0494	DNA polymerase IV	32
SMD_3709	dihydrolipoamide acetyltransferase component of pyruvate dehydrogenase	443
SMD_2543	D-Lactate dehydrogenase	36
SMD_0626	D-lactate dehydrogenase	48
SMD_0001	chromosomal replication initiator protein DnaA	165
SMD_2781	replicative DNA helicase	127
SMD_1323	DNA polymerase III subunit alpha	144
SMD_2563	DNA polymerase III subunit alpha	8
SMD_0371	DNA primase	85
SMD_1795	chaperone protein DnaJ	367
SMD_1794	chaperone protein DnaK	1033
SMD_0002	DNA polymerase III subunit beta	273
SMD_0937	DNA polymerase III subunit epsilon	189
SMD_4134	DNA polymerase III subunit epsilon	58
SMD_0964	DNA polymerase III subunits gamma and tau	163
SMD_4143	dolichol-phosphate mannosyltransferase	103
SMD_3593	periplasmic thiol:disulfide interchange protein DsbA	84
SMD_3594	periplasmic thiol:disulfide interchange protein DsbA	186
SMD_0811	periplasmic thiol:disulfide oxidoreductase DsbB,required for DsbA	119
SMD_0574	Thiol:disulfide interchange protein DsbC	115
SMD_2580	Thiol:disulfide interchange protein DsbG precursor	159
SMD_3766	D-tyrosyl-tRNA(Tyr) deacylase	35
SMD_0259	tRNA dihydrouridine synthase A	128
SMD_0673	tRNA dihydrouridine synthase B	59
SMD_0322	deoxyuridine 5'-triphosphate nucleotidohydrolase	128
SMD_1331	1-deoxy-D-xylulose 5-phosphate reductoisomerase	115
SMD_2922	1-deoxy-D-xylulose-5-phosphate synthase	188
SMD_0277	hypothetical protein	257
SMD_0026	4-hydroxy-2-ketovalerate aldolase	58
SMD_1726	phosphogluconate dehydratase	48

SMD_2888	translation elongation factor P	789
SMD_1986	translation elongation factor P-related protein	348
SMD_3934	hypothetical protein	13
SMD_1360	tripartite multidrug resistance system membrane fusion protein	47
SMD_1361	tripartite multidrug resistance system inner membrane protein	56
SMD_1855	GTP-binding protein EngA	191
SMD_3591	GTP-binding protein EngB	150
SMD_3554	GTPase related to EngC	124
SMD_1655	enolase	339
SMD_2463	2,3-dihydro-2,3-dihydroxybenzoate dehydrogenase	6
SMD_2466	isochorismatase	10
SMD_2468	Isochorismate synthase	8
SMD_2467	2,3-dihydroxybenzoate-AMP ligase	6
SMD_2464	hypothetical protein	9
SMD_3125	GTP-binding protein Era	296
SMD_3721	phospholipase/carboxylesterase family protein	97
SMD_0542	electron transfer flavoprotein subunit alpha	285
SMD_0543	electron transfer flavoprotein subunit beta	309
SMD_2905	Exodeoxyribonuclease VII large subunit	56
SMD_0009	motA/TolQ/ExbB proton channel family protein	2561
SMD_2398	motA/TolQ/ExbB proton channel family protein	1
SMD_0010	biopolymer transport protein ExbD/TolR	2119
SMD_2397	biopolymer transport protein ExbD/TolR	0
SMD_0011	biopolymer transport protein ExbD/TolR	1521
SMD_3601	biopolymer transport protein ExbD/TolR	5
SMD_3602	biopolymer transport protein ExbD/TolR	71
SMD_0729	5'-3' exonuclease	59
SMD_1642	exopolysaccharide synthesis	121
SMD_3969	exopolysaccharide synthesis	42
SMD_0493	3-hydroxydecanoyl-ACP dehydratase	515
SMD_0492	3-oxoacyl-ACP synthase	355
SMD_0978	malonyl CoA-acyl carrier protein transacylase	389
SMD_0981	3-oxoacyl-ACP synthase	353
SMD_4090	3-oxoacyl-ACP synthase	71
SMD_0979	3-oxoacyl-ACP reductase	466
SMD_3221	3-oxoacyl-ACP reductase	6
SMD_3551	acetoacetyl-CoA reductase	81
SMD_4015	3-oxoacyl-ACP reductase	22
SMD_4091	3-oxoacyl-ACP reductase	85
SMD_0175	3-oxoacyl-[acyl-carrier-protein] synthase,KASIII in hypothetical g	380
SMD_0976	3-oxoacyl-[acyl-carrier-protein] synthase,KASIII	442
SMD_1327	(3R)-hydroxymyristoyl-ACP dehydratase	447
SMD_2017	long-chain-fatty-acid--CoA ligase	93
SMD_3216	acyl-CoA dehydrogenase	22
SMD_0826	2,4-dienoyl-CoA reductase	8
SMD_0353	long-chain fatty acid transport protein	186
SMD_0017	Fructose-1,6-bisphosphatase, type I	104
SMD_3449	formate dehydrogenase formation protein FdhE	36
SMD_3446	formate dehydrogenase O subunit alpha	34
SMD_3447	formate dehydrogenase O subunit beta	12
SMD_3448	formate dehydrogenase O subunit gamma	16
SMD_2347	formate dehydrogenase subunit D	17

SMD_1749	4Fe-4S ferredoxin	256
SMD_2416	Sigma factor regulator VreR (cytoplasmic membrane-localized) of	4
SMD_2571	FecR protein	1
SMD_1991	ferrous iron transport protein	136
SMD_1992	Ferrous iron transport protein B	96
SMD_1223	Signal recognition particle, subunit Ffh SRP54 (TC 3.A.5.1.1)	210
SMD_0945	-	365
SMD_3599	OMR family iron-siderophore receptor precursor	24
SMD_3289	phage tail sheath monomer	2
SMD_3290	major tail tube protein	2
SMD_0595	Fimbrial protein precursor	2285
SMD_1454	type IV fimbrial biogenesis protein FimT	14
SMD_1447	type IV fimbrial biogenesis protein FimT	95
SMD_3002	FimV protein	133
SMD_3840	DNA-binding protein Fis	140
SMD_1637	FKBP-type peptidyl-prolyl cis-trans isomerase	36
SMD_2047	flagellar synthesis regulator FlaN	92
SMD_2090	flagellar basal-body P-ring formation protein FlgA	29
SMD_2088	flagellar basal-body rod protein FlgB	44
SMD_2087	flagellar basal-body rod protein FlgC	33
SMD_2086	flagellar basal-body rod modification protein FlgD	73
SMD_2085	flagellar hook protein FlgE	93
SMD_2084	flagellar basal-body rod protein FlgF	66
SMD_2083	flagellar basal-body rod protein FlgG	74
SMD_2082	flagellar L-ring protein FlgH	43
SMD_2081	flagellar P-ring protein FlgI	44
SMD_2078	flagellar hook-associated protein FlgL	54
SMD_2080	flagellar protein FlgJ	40
SMD_2079	flagellar hook-associated protein FlgK	62
SMD_2091	Negative regulator of flagellin synthesis FlgM	285
SMD_2092	hypothetical protein	180
SMD_2049	flagellar biosynthesis protein FlhA	15
SMD_2050	flagellar biosynthesis protein FlhB	6
SMD_2048	flagellar biosynthesis protein FlhF	34
SMD_2046	RNA polymerase sigma factor for flagellar operon	80
SMD_2076	flagellar biosynthesis protein FliC	582
SMD_2075	flagellar biosynthesis protein FliC	711
SMD_2077	flagellar biosynthesis protein FliC	201
SMD_2074	flagellar hook-associated protein FliD	107
SMD_2065	flagellar hook-basal body complex protein FliE	60
SMD_2064	flagellar M-ring protein FliF	44
SMD_2063	flagellar motor switch protein FliG	64
SMD_2062	flagellar assembly protein FliH	55
SMD_2061	flagellum-specific ATP synthase FliI	33
SMD_2060	flagellar protein FliJ	30
SMD_2059	flagellar hook-length control protein FliK	22
SMD_2058	flagellar biosynthesis protein FliL	49
SMD_2057	flagellar motor switch protein FliM	54
SMD_2056	flagellar motor switch protein FliN	56
SMD_2055	flagellar biosynthesis protein FliO	43
SMD_2054	flagellar biosynthesis protein FliP	26
SMD_2053	flagellar biosynthesis protein FliQ	16

SMD_2052	flagellar biosynthesis protein FlIR	14
SMD_2073	flagellar biosynthesis protein FlIS	182
SMD_3776	methionyl-tRNA formyltransferase	93
SMD_1942	carD family transcriptional regulator	92
SMD_2434	Fumarate and nitrate reduction regulatory protein	68
SMD_0695	dihydrofolate reductase	71
SMD_0377	dihydroneopterin aldolase	124
SMD_0838	dihydrofolate synthase	82
SMD_1858	methylenetetrahydrofolate dehydrogenase (NADP)	84
SMD_4202	GTP cyclohydrolase I	323
SMD_1715	2-amino-4-hydroxy-6-hydroxymethyldihydropteridine pyrophosph	105
SMD_1671	dihydropteroate synthase	64
SMD_0041	formamidopyrimidine-DNA glycosylase	41
SMD_2804	Ferredoxin--NADP() reductase	218
SMD_1334	ribosome recycling factor	507
SMD_2227	PTS system fructose-specific transporter subunit IIB	34
SMD_2226	1-phosphofructokinase	43
SMD_3237	chemotaxis protein cheA	280
SMD_0647	Cell division protein FtsA	227
SMD_1656	Cell division protein FtsB	405
SMD_3854	Cell division transporter, ATP-binding protein FtsE (TC 3.A.5.1.1)	180
SMD_1669	Cell division protein FtsH	257
SMD_0638	cell division protein FtsI	129
SMD_1668	Cell division protein FtsJ / Ribosomal RNA large subunit methyltra	189
SMD_2113	cell division protein FtsK	112
SMD_0637	cell division protein FtsL	121
SMD_0646	Cell division protein FtsQ	214
SMD_0642	cell division protein FtsW	195
SMD_3853	cell division protein FtsX	113
SMD_1743	Signal recognition particle receptor protein FtsY (=alpha subunit)	96
SMD_0648	cell division protein FtsZ	357
SMD_2769	class II fumarate hydratase	55
SMD_1788	Ferric uptake regulation protein FUR	263
SMD_0782	translation elongation factor G	2401
SMD_2125	translation elongation factor G-related protein	16
SMD_1845	UTP--glucose-1-phosphate uridylyltransferase	312
SMD_3406	NAD-dependent glyceraldehyde-3-phosphate dehydrogenase	731
SMD_2716	quinoprotein glucose dehydrogenase	3
SMD_0170	glutaryl-CoA dehydrogenase	67
SMD_0375	YgjD/Kae1/Ori7 family, required for threonylcarbamoyladenosine	140
SMD_3224	glycine cleavage system H protein	733
SMD_3153	glycine dehydrogenase [decarboxylating] (glycine cleavage syste	166
SMD_3225	aminomethyltransferase (glycine cleavage system T protein)	211
SMD_1750	gamma-glutamyltranspeptidase	136
SMD_4020	tRNA uridine 5-carboxymethylaminomethyl modification protein C	79
SMD_4148	rRNA small subunit methyltransferase, glucose inhibited division p	76
SMD_1109	Hydroxypyruvate isomerase	5
SMD_2428	glycogen synthase	2
SMD_2427	1,4-alpha-glucan (glycogen) branching enzyme,GH-13-type	2
SMD_2422	glycogen debranching enzyme	5
SMD_1728	glucokinase	68
SMD_2988	phosphoglucosamine mutase	256

SMD_3685	glucosamine--fructose-6-phosphate aminotransferase	188
SMD_3694	N-acetylglucosamine-1-phosphate uridylyltransferase	120
SMD_0103	glutamine synthetase	26
SMD_0104	nitrogen regulatory protein P-II	4
SMD_2138	nitrogen regulatory protein P-II	115
SMD_3957	nitrogen regulatory protein P-II	181
SMD_1346	[protein-PII] uridylyltransferase	127
SMD_0399	glutamate-ammonia-ligase adenylyltransferase	37
SMD_0113	nitrogen regulation protein NR(I)	40
SMD_0112	two-component system sensor protein	66
SMD_0713	glutaminyl-tRNA synthetase	204
SMD_0934	Hydroxyacylglutathione hydrolase	181
SMD_3712	Aerobic glycerol-3-phosphate dehydrogenase	14
SMD_3713	glycerol kinase	22
SMD_4234	glycerophosphoryl diester phosphodiesterase	44
SMD_3438	Citrate synthase (si)	1386
SMD_0064	glutamate synthase [NADPH] large subunit	30
SMD_0063	glutamate synthase small subunit	19
SMD_1279	glutamyl-tRNA synthetase	308
SMD_0607	serine hydroxymethyltransferase	351
SMD_3152	-	419
SMD_3801	-	75
SMD_3800	-	172
SMD_3151	-	446
SMD_4167	glycyl-tRNA synthetase subunit alpha	197
SMD_4166	glycyl-tRNA synthetase subunit beta	217
SMD_3445	guanylate kinase	98
SMD_3037	glutathione reductase	40
SMD_3296	hypothetical protein	78
SMD_3291	phage-related tail protein	3
SMD_0499	phosphoglycolate phosphatase	159
SMD_3402	phosphoglycolate phosphatase	150
SMD_1268	phosphoglycerate mutase	219
SMD_2805	glutathione peroxidase	58
SMD_0126	glycerol-3-phosphate dehydrogenase [NAD(P)]	417
SMD_3293	phage tail length tape-measure protein	10
SMD_3294	phage-related tail protein	4
SMD_2001	transcription elongation factor GreA	357
SMD_3012	transcription elongation factor GreB	56
SMD_3813	heat shock protein 60 family chaperone GroEL	5629
SMD_3814	heat shock protein 60 family co-chaperone GroES	2727
SMD_1793	heat shock protein GrpE	511
SMD_0854	glutaredoxin	81
SMD_3242	glutathione synthetase	70
SMD_2401	hypothetical protein	2
SMD_2409	General secretion pathway protein D	2
SMD_2408	General secretion pathway protein E	1
SMD_2407	General secretion pathway protein F	0
SMD_2413	General secretion pathway protein G	3
SMD_2402	General secretion pathway protein H	2
SMD_2403	General secretion pathway protein I	0
SMD_2404	General secretion pathway protein J	0

SMD_2412	General secretion pathway protein K	1
SMD_2411	General secretion pathway protein L	1
SMD_2410	General secretion pathway protein M	0
SMD_0824	glutathione S-transferase	94
SMD_1820	glutathione S-transferase	15
SMD_2786	glutathione S-transferase, unnamed subgroup	24
SMD_2798	glutathione S-transferase	33
SMD_3746	glutathione S-transferase	84
SMD_4051	glutathione S-transferase	31
SMD_1427	glutathione S-transferase	12
SMD_3209	glycosyltransferase	220
SMD_1861	GMP synthase	154
SMD_1859	inosine-5'-monophosphate dehydrogenase	342
SMD_2717	DNA gyrase subunit A	397
SMD_0004	DNA gyrase subunit B	278
SMD_1773	chaperone protein hchA	8
SMD_0053	acid phosphatase	195
SMD_0750	glutamyl-tRNA reductase	84
SMD_4044	porphobilinogen synthase	244
SMD_3718	porphobilinogen deaminase	98
SMD_0121	uroporphyrinogen-III synthase	21
SMD_3191	Uroporphyrinogen III decarboxylase	99
SMD_4119	Coproporphyrinogen III oxidase, aerobic	61
SMD_4175	Ferrochelatase, protoheme ferro-lyase	93
SMD_0721	polypeptide chain release factor methylase	56
SMD_3474	glutamate-1-semialdehyde aminotransferase	122
SMD_1630	Coproporphyrinogen III oxidase, oxygen-independent	828
SMD_3498	heme oxygenase HemO, associated with heme uptake	16
SMD_4149	4'-phosphopantetheinyl transferase	45
SMD_3167	HflC protein	275
SMD_3168	HflK protein	321
SMD_1674	GTP-binding protein HflX	265
SMD_1673	RNA-binding protein Hfq	362
SMD_2946	integration host factor subunit alpha	665
SMD_1951	Phosphoribosylformimino-5-aminoimidazole carboxamide ribotide	15
SMD_1949	Histidinol-phosphatase	13
SMD_1948	histidinol-phosphate aminotransferase	22
SMD_1947	histidinol dehydrogenase	16
SMD_1952	Imidazole glycerol phosphate synthase cyclase subunit	16
SMD_1946	ATP phosphoribosyltransferase	14
SMD_1950	Imidazole glycerol phosphate synthase amidotransferase subunit	14
SMD_1953	Phosphoribosyl-AMP cyclohydrolase) / Phosphoribosyl-ATP pyropt	17
SMD_1943	histidyl-tRNA synthetase	177
SMD_3923	homogentisate 1,2-dioxygenase	138
SMD_1988	Hydroxymethylglutaryl-CoA lyase	52
SMD_2862	biofilm PGA synthesis deacetylase PgaB	2
SMD_2861	biofilm PGA outer membrane secretin PgaA	3
SMD_2863	biofilm PGA synthesis N-glycosyltransferase PgaC	2
SMD_2864	biofilm PGA synthesis auxiliary protein PgaD	12
SMD_0558	DNA-binding protein H-NS	345
SMD_3749	histone-like nucleoid-structuring protein H-NS	72
SMD_3064	DNA polymerase III subunit delta	147

SMD_0985	DNA polymerase III subunit delta'	83
SMD_0568	DNA polymerase III subunit chi	168
SMD_3118	hypoxanthine-guanine phosphoribosyltransferase	195
SMD_1792	heat-inducible transcription repressor HrcA	52
SMD_3253	ATP dependent RNA helicase	82
SMD_4070	ATP-dependent RNA helicase	42
SMD_4160	chaperone protein hscC (Hsc62)	57
SMD_1863	type I restriction-modification system,DNA-methyltransferase suk	76
SMD_1862	type I restriction-modification system,restriction subunit R	67
SMD_1864	type I restriction-modification system,specificity subunit S	86
SMD_3211	33 kDa chaperonin (Heat shock protein 33) (HSP33)	100
SMD_1235	ribosome-associated heat shock protein	56
SMD_3661	ATP-dependent hsl protease ATP-binding subunit HsIU	307
SMD_3662	ATP-dependent protease HsIV	228
SMD_1219	Hsp90xo protein	89
SMD_1745	chaperone protein HtpG	199
SMD_2894	protease htpX	166
SMD_3534	lipid A biosynthesis lauroyl acyltransferase	111
SMD_3767	lipid A biosynthesis lauroyl acyltransferase	54
SMD_0873	DNA-binding protein HU-alpha	3100
SMD_2691	histidine ammonia-lyase	55
SMD_2690	Imidazolonepropionase	47
SMD_0679	outer membrane hemin receptor	9
SMD_3357	type IV fimbriae expression regulatory protein PilR	83
SMD_3284	phage-related tail protein	21
SMD_3868	isocitrate dehydrogenase	271
SMD_1840	integration host factor subunit beta	192
SMD_1197	isoleucyl-tRNA synthetase	189
SMD_4038	dihydroxy-acid dehydratase	24
SMD_0740	branched-chain amino acid aminotransferase	230
SMD_3517	acetolactate synthase large subunit	10
SMD_2012	acetolactate synthase	20
SMD_3518	acetolactate synthase small subunit	11
SMD_2108	translation initiation factor 1	542
SMD_2962	translation initiation factor 2	581
SMD_2951	translation initiation factor 3	2570
SMD_0753	4-diphosphocytidyl-2-C-methyl-D-erythritol kinase	185
SMD_2119	IroE protein	18
SMD_3263	IroE protein	58
SMD_3048	octaprenyl-diphosphate synthase	138
SMD_1096	octaprenyl-diphosphate synthase	266
SMD_1657	2-C-methyl-D-erythritol 4-phosphate cytidyltransferase	160
SMD_1658	2-C-methyl-D-erythritol 2,4-cyclo diphosphate synthase	99
SMD_1722	1-hydroxy-2-methyl-2-(E)-butenyl 4-diphosphate synthase	259
SMD_1199	4-hydroxy-3-methylbut-2-enyl diphosphate reductase	220
SMD_3440	inosine-uridine preferring nucleoside hydrolase	189
SMD_0207	isovaleryl-CoA dehydrogenase	187
SMD_3283	Baseplate assembly protein J	8
SMD_0296	catalase	27
SMD_1237	catalase	33
SMD_3157	catalase	1
SMD_0833	2-amino-3-ketobutyrate coenzyme A ligase	145

SMD_0328	potassium-transporting ATPase subunit A	16
SMD_0327	potassium-transporting ATPase subunit B	12
SMD_0326	potassium-transporting ATPase subunit C	8
SMD_0325	Osmosensitive K channel histidine kinase KdpD	15
SMD_0324	DNA-binding response regulator KdpE	29
SMD_1652	2-Keto-3-deoxy-D-manno-octulosonate-8-phosphate synthase	216
SMD_1468	3-deoxy-manno-octulosonate cytidyltransferase	101
SMD_1038	3-deoxy-D-manno-octulosonate 8-phosphate phosphatase	129
SMD_1039	arabinose 5-phosphate isomerase	73
SMD_3533	3-deoxy-D-manno-octulosonic-acid transferase	43
SMD_3941	Potassium efflux system KefA protein / Small-conductance mech	27
SMD_4086	glutathione-regulated potassium-efflux system protein KefB	34
SMD_1857	glutathione-regulated potassium-efflux system protein KefB	20
SMD_1725	4-Hydroxy-2-oxoglutarate aldolase) / 2-dehydro-3-deoxyphospho	65
SMD_0699	dimethyladenosine transferase	116
SMD_0022	Ku domain-containing protein	1
SMD_3316	Kup system potassium uptake protein	74
SMD_3275	phage head completion-stabilization protein	1
SMD_2544	L-lactate dehydrogenase	40
SMD_2546	L-lactate permease	22
SMD_2545	Lactate-responsive regulator LldR in Enterobacteria, GntR family	16
SMD_1208	D-lactate dehydrogenase	15
SMD_0690	LemA family protein	22
SMD_3129	translation elongation factor LepA	263
SMD_3128	Signal peptidase I	203
SMD_0195	Signal peptidase I	31
SMD_3520	2-isopropylmalate synthase	10
SMD_3524	3-isopropylmalate dehydrogenase	32
SMD_3522	3-isopropylmalate dehydratase large subunit	14
SMD_3523	3-isopropylmalate dehydratase small subunit	18
SMD_3066	leucyl-tRNA synthetase	269
SMD_1677	SOS-response repressor and protease LexA	411
SMD_0693	prolipoprotein diacylglyceryl transferase	121
SMD_0075	ATP-dependent RNA helicase	50
SMD_2722	DNA ligase	62
SMD_3111	ATP-dependent DNA ligase	7
SMD_3634	lipoate synthase	346
SMD_3635	Octanoate-[acyl-carrier-protein]-protein-N-octanoyltransferase	339
SMD_2115	Outer membrane lipoprotein carrier protein LolA	156
SMD_0872	ATP-dependent protease La	233
SMD_3708	dihydrolipoamide dehydrogenase of pyruvate dehydrogenase corr	322
SMD_3084	hypothetical protein	24
SMD_0550	succinyl-CoA: 3-ketoacid-coenzyme A transferase subunit A	138
SMD_0551	succinyl-CoA: 3-ketoacid-coenzyme A transferase subunit B	164
SMD_1035	lipopolysaccharide ABC transporter, ATP-binding protein LptB	179
SMD_1326	acyl-[acyl-carrier-protein]-UDP-N-acetylglucosamine O-acyltrans	308
SMD_1325	lipid-A-disaccharide synthase	205
SMD_0649	UDP-3-O-[3-hydroxymyristoyl] N-acetylglucosamine deacetylase	273
SMD_1328	UDP-3-O-[3-hydroxymyristoyl] glucosamine N-acyltransferase	227
SMD_0845	UDP-2,3-diacylglucosamine hydrolase	194
SMD_1467	tetraacyldisaccharide 4'-kinase	96
SMD_3953	Fe(2)/alpha-ketoglutarate-dependent dioxygenase LpxO	102

SMD_0482	AsnC family transcriptional regulator	25
SMD_1198	lipoprotein signal peptidase	162
SMD_2136	lipoprotein signal peptidase	26
SMD_3279	Lytic enzyme	3
SMD_1089	Aspartokinase	156
SMD_2013	lysyl-tRNA synthetase	353
SMD_2007	regulatory protein	16
SMD_3274	phage terminase, endonuclease subunit	3
SMD_1372	macrolide-specific efflux protein MacA	10
SMD_2659	macrolide-specific efflux protein MacA	2
SMD_1371	macrolide export ATP-binding/permease MacB	8
SMD_2660	macrolide export ATP-binding/permease MacB	2
SMD_3541	NADP-dependent malic enzyme	478
SMD_3055	Septum formation protein Maf	119
SMD_2425	4-alpha-glucanotransferase	5
SMD_0548	mannose-1-phosphate guanylyltransferase	186
SMD_1345	methionine aminopeptidase	498
SMD_1248	methionine aminopeptidase	38
SMD_1970	2,3-diketo-5-methylthiopentyl-1-phosphate enolase-phosphatase	156
SMD_2595	methyl-accepting chemotaxis protein	10
SMD_0819	malate dehydrogenase	958
SMD_3940	phosphoglycerol transferase I	3
SMD_0042	glucans biosynthesis protein D precursor	94
SMD_2492	Spermidine export protein mdtI	37
SMD_1555	mercuric ion reductase	6
SMD_1556	periplasmic mercury(2) binding protein	6
SMD_1558	mercuric resistance operon regulatory protein	37
SMD_1557	mercuric transport protein, MerT	0
SMD_3203	homoserine O-acetyltransferase	3
SMD_3202	cystathionine gamma-synthase	5
SMD_0528	cystathionine gamma-lyase	236
SMD_2261	5-methyltetrahydropteroyltriglutamate/homocysteine S-methyltra	17
SMD_0654	5,10-methylenetetrahydrofolate reductase	15
SMD_3080	methionyl-tRNA synthetase	147
SMD_2754	5-methyltetrahydrofolate--homocysteine methyltransferase	24
SMD_2753	5-methyltetrahydrofolate--homocysteine methyltransferase	40
SMD_0668	S-adenosylmethionine synthetase	240
SMD_2258	transcriptional activator MetR	20
SMD_2851	homoserine O-acetyltransferase	97
SMD_1271	transcription-repair coupling factor	146
SMD_2331	Mg(2) transport ATPase, P-type	12
SMD_2332	Mg(2) transport ATPase protein C	2
SMD_1026	magnesium transporter	40
SMD_4084	magnesium transporter	14
SMD_1672	tRNA delta(2)-isopentenylpyrophosphate transferase	53
SMD_1168	Septum site-determining protein MinC	309
SMD_1167	Septum site-determining protein MinD	555
SMD_1166	Cell division topological specificity factor MinE	538
SMD_0199	malate synthase	5
SMD_0108	membrane-bound lytic murein transglycosylase A precursor	51
SMD_3640	membrane-bound lytic murein transglycosylase B precursor	243
SMD_0933	membrane-bound lytic murein transglycosylase D	132

SMD_3010	membrane-bound lytic murein transglycosylase D	130
SMD_0233	3-hydroxyisobutyrate dehydrogenase	150
SMD_2101	tRNA (5-methyl aminomethyl-2-thiouridylate)-methyltransferase	110
SMD_2441	molybdenum cofactor biosynthesis protein MoaA	27
SMD_2819	Pterin-4-alpha-carbinolamine dehydratase	124
SMD_2440	bifunctional Molybdenum cofactor biosynthesis protein MoaC / Mc	25
SMD_2438	sulfur carrier protein ThiS	23
SMD_2437	molybdenum cofactor biosynthesis protein MoaE	21
SMD_2436	molybdopterin-guanine dinucleotide biosynthesis protein MobB	34
SMD_2433	molybdenum ABC transporter, periplasmic molybdenum-binding p	54
SMD_2432	molybdenum transport system permease protein ModB (TC 3.A.1	32
SMD_2439	molybdopterin biosynthesis protein MoeA	27
SMD_0478	flagellar motor rotation protein MotA	94
SMD_2042	flagellar motor rotation protein MotA	68
SMD_0477	flagellar motor rotation protein MotB	82
SMD_2041	flagellar motor rotation protein MotB	37
SMD_3488	UDP-N-acetylmuramate:L-alanyl-gamma-D-glutamyl-meso-diami	124
SMD_1155	malate:quinone oxidoreductase	15
SMD_0636	rRNA small subunit methyltransferase H	196
SMD_0641	phospho-N-acetylmuramoyl-pentapeptide-transferase	183
SMD_0635	cell division protein MraZ	385
SMD_3429	multimodular transpeptidase-transglycosylase	87
SMD_3248	multimodular transpeptidase-transglycosylase	89
SMD_3643	penicillin-binding protein 2 (PBP-2)	52
SMD_3642	Rod shape-determining protein RodA	91
SMD_3646	Rod shape-determining protein MreB	195
SMD_3645	Rod shape-determining protein MreC	72
SMD_3644	Rod shape-determining protein MreD	57
SMD_0597	outer membrane usher protein	292
SMD_1466	lipid A export ATP-binding/permease MsbA	116
SMD_3384	Large-conductance mechanosensitive channel	137
SMD_0505	peptide methionine sulfoxide reductase MsrA	3
SMD_0715	peptide methionine sulfoxide reductase MsrA	139
SMD_0479	peptide methionine sulfoxide reductase MsrB	55
SMD_0507	peptide methionine sulfoxide reductase MsrB	0
SMD_2259	FMN reductase	2
SMD_3117	5'-methylthioadenosine phosphorylase	107
SMD_3210	monofunctional biosynthetic peptidoglycan transglycosylase	45
SMD_2718	Methylthioribose-1-phosphate isomerase	159
SMD_1972	Methylthioribulose-1-phosphate dehydratase	68
SMD_1971	1,2-dihydroxy-3-keto-5-methylthiopentene dioxygenase	131
SMD_1254	2-hydroxy-3-keto-5-methylthiopentenyl-1-phosphatephosphatase	301
SMD_1041	UDP-N-acetylglucosamine 1-carboxyvinyltransferase	256
SMD_1914	UDP-N-acetylenolpyruvoylglucosamine reductase	90
SMD_0644	UDP-N-acetylmuramate--L-alanine ligase	281
SMD_1091	UDP-N-acetylmuramoylalanine--D-glutamate ligase	113
SMD_0639	UDP-N-acetylmuramoylalanyl-D-glutamate--2,6-diaminopimelate	196
SMD_0640	UDP-N-acetylmuramoylalanyl-D-glutamyl-2,6-diaminopimelate--[154
SMD_0643	UDP-N-acetylglucosamine--N-acetylmuramyl- (pentapeptide) pyr	152
SMD_1195	peptidoglycan lipid II flippase MurJ	46
SMD_2900	DNA mismatch repair protein MutL	105
SMD_1238	DNA mismatch repair protein MutS	46

SMD_0652	7,8-dihydro-8-oxoguanine-triphosphatase	54
SMD_2610	7,8-dihydro-8-oxoguanine-triphosphatase	87
SMD_1742	A/G-specific adenine glycosylase	55
SMD_0052	Virulence factor mvIM	56
SMD_3273	phage major capsid protein	4
SMD_1437	quinolinate phosphoribosyltransferase	135
SMD_3063	nicotinate-nucleotide adenylyltransferase	80
SMD_3353	NAD synthetase	133
SMD_2145	NAD synthase (glutamine-hydrolysing)	69
SMD_0355	nicotinamide-nucleotide adenylyltransferase,NadR family	31
SMD_3612	N-acetylglucosamine-6-phosphate deacetylase	40
SMD_4005	N-acetylglucosamine-6-phosphate deacetylase	22
SMD_3119	beta N-acetyl-glucosaminidase	110
SMD_3618	beta-hexosaminidase	21
SMD_2736	3-hydroxyanthranilate 3,4-dioxygenase	85
SMD_3796	NADH dehydrogenase	37
SMD_1849	nucleoside diphosphate kinase	922
SMD_1267	endonuclease V	17
SMD_0601	bacteriophage N4 adsorption protein B	5
SMD_3821	N-hydroxyarylamine O-acetyltransferase,putative	12
SMD_1664	lipoprotein NlpD	230
SMD_2487	ribonucleotide reductase subunit alpha	16
SMD_2486	ribonucleotide reductase of class Ia (aerobic),beta subunit	12
SMD_0610	ribonucleotide reductase transcriptional regulator NrdR	155
SMD_0144	NreB protein	20
SMD_1387	endonuclease III	37
SMD_3883	NADH pyrophosphatase	114
SMD_3230	ADP compounds hydrolase NudE	186
SMD_0728	ADP-ribose pyrophosphatase	80
SMD_3892	Adenosine (5')-pentaphospho-(5'')-adenosine pyrophosphohydrol	139
SMD_2980	NADH ubiquinone oxidoreductase subunit A	722
SMD_2979	NADH-ubiquinone oxidoreductase subunit B	669
SMD_2978	NADH-ubiquinone oxidoreductase subunit C	553
SMD_2977	NADH-ubiquinone oxidoreductase subunit D	750
SMD_2976	NADH-ubiquinone oxidoreductase subunit E	818
SMD_2975	NADH-ubiquinone oxidoreductase subunit F	957
SMD_2974	NADH-ubiquinone oxidoreductase subunit G	753
SMD_2973	NADH-ubiquinone oxidoreductase subunit H	714
SMD_2972	NADH-ubiquinone oxidoreductase subunit I	487
SMD_2971	NADH-ubiquinone oxidoreductase subunit J	602
SMD_2970	NADH-ubiquinone oxidoreductase subunit K	656
SMD_2969	NADH-ubiquinone oxidoreductase subunit L	774
SMD_2968	NADH-ubiquinone oxidoreductase subunit M	568
SMD_2967	NADH-ubiquinone oxidoreductase subunit N	549
SMD_2963	transcription termination protein NusA	371
SMD_0618	transcription termination protein NusB	304
SMD_0773	transcription antitermination protein NusG	878
SMD_3272	phage capsid scaffolding protein	3
SMD_1193	GTP-binding protein Obg	261
SMD_2776	dihydrolipoamide dehydrogenase of 2-oxoglutarate dehydrogenas	778
SMD_1288	methylated-DNA--protein-cysteine methyltransferase	7
SMD_0234	Organic hydroperoxide resistance protein	51

SMD_3543	phosphate-specific outer membrane porin OprP Pyrophosphate-sp	70
SMD_3513	choline/carnitine/betaine transporter	16
SMD_2617	3'-to-5' oligoribonuclease	128
SMD_1086	Osmotically inducible protein	79
SMD_0702	Outer membrane protein Imp, required for envelope biogenesis /	171
SMD_3346	alpha,alpha-trehalose-phosphate synthase	21
SMD_3344	Trehalose-6-phosphate phosphatase	14
SMD_0718	Hydrogen peroxide-inducible genes activator	49
SMD_3271	phage terminase, ATPase subunit	2
SMD_3905	Anthranilate synthase, amidotransferase component	83
SMD_2734	transcriptional regulator protein Pai2	81
SMD_1716	3-methyl-2-oxobutanoate hydroxymethyltransferase	215
SMD_1717	Pantoate--beta-alanine ligase	182
SMD_1718	aspartate 1-decarboxylase	384
SMD_3787	ketopantoic acid reductase	74
SMD_4147	chromosome (plasmid) partitioning protein ParA / Sporulation initi	189
SMD_4146	chromosome (plasmid) partitioning protein ParB / Stage 0 sporul	168
SMD_1356	Topoisomerase IV subunit A	211
SMD_1648	Topoisomerase IV subunit B	207
SMD_3174	penicillin-insensitive transglycosylase	14
SMD_1662	protein-L-isoaspartate O-methyltransferase	151
SMD_3530	protein-L-isoaspartate O-methyltransferase	449
SMD_1714	Poly(A) polymerase	158
SMD_3930	branched-chain alpha-keto acid dehydrogenase, E1 component su	548
SMD_3931	branched-chain alpha-keto acid dehydrogenase, E1 component su	428
SMD_0700	4-hydroxythreonine-4-phosphate dehydrogenase	60
SMD_3185	pyridoxamine 5'-phosphate oxidase	102
SMD_0014	pyridoxine 5'-phosphate synthase	55
SMD_1798	pyridoxal kinase	105
SMD_0586	General secretion pathway protein K	29
SMD_0587	General secretion pathway protein L	53
SMD_0569	cytosol aminopeptidase	262
SMD_3461	Xaa-Pro dipeptidase PepQ	103
SMD_1430	Ubiquinol-cytochrome C reductase iron-sulfur subunit	76
SMD_1431	Ubiquinol--cytochrome c reductase, cytochrome B subunit	30
SMD_1432	ubiquinol cytochrome C oxidoreductase,cytochrome C1 subunit	31
SMD_3490	6-phosphofructokinase	54
SMD_1719	glucose-6-phosphate isomerase	217
SMD_3403	phosphoglycerate kinase	173
SMD_1727	6-phosphogluconolactonase	48
SMD_1472	CDP-diacylglycerol--glycerol-3-phosphate 3-phosphatidyltransfer	177
SMD_3914	Na(+) H(+) antiporter subunit A Na(+) H(+) antiporter subunit B	23
SMD_3915	Na(+) H(+) antiporter subunit C	41
SMD_3916	Na(+) H(+) antiporter subunit D	34
SMD_3917	Na(+) H(+) antiporter subunit E	47
SMD_3918	Na(+) H(+) antiporter subunit F	44
SMD_3919	Na(+) H(+) antiporter subunit G	37
SMD_1318	poly(3-hydroxybutyrate) depolymerase	86
SMD_2896	acetoacetyl-CoA reductase	81
SMD_2605	Polyhydroxyalkanoic acid synthase	82
SMD_2681	chorismate mutase I	140
SMD_2948	phenylalanyl-tRNA synthetase subunit alpha	122

SMD_2947	phenylalanyl-tRNA synthetase subunit beta	136
SMD_0029	phenylalanine-4-hydroxylase	401
SMD_3089	alkylphosphonate utilization operon protein PhnA	335
SMD_0450	DNA binding 3-demethylubiquinone-9 3-methyltransferase domain	5
SMD_3044	alkaline phosphatase	71
SMD_0852	phosphate regulon transcriptional regulatory protein PhoB	51
SMD_0904	winged helix family two component transcriptional regulator	15
SMD_1689	phosphodiesterase/alkaline phosphatase D	6
SMD_2779	phosphodiesterase/alkaline phosphatase D	3
SMD_0262	Sensor protein PhoQ	118
SMD_0851	phosphate regulon sensor protein PhoR	41
SMD_1380	phosphate transport system regulatory protein PhoU	3
SMD_1385	phosphate ABC transporter, periplasmic phosphate-binding protein	3
SMD_1087	phenazine biosynthesis protein PhzF	64
SMD_1088	phenazine biosynthesis protein PhzF like	74
SMD_3359	type IV pilin Pila	508
SMD_3358	type IV fimbrial assembly, ATPase PilB	54
SMD_3360	type IV fimbrial assembly protein PilC	90
SMD_1452	type IV pilus assembly protein PilE	55
SMD_1851	type IV pilus assembly protein PilF	133
SMD_3241	twitching motility protein PilG	246
SMD_3170	twitching motility protein PilH	122
SMD_3240	twitching motility protein PilH	99
SMD_3239	type IV pili signal transduction protein PilI	37
SMD_3238	pilus biogenesis protein	40
SMD_3428	type IV pilus biogenesis protein PilM	70
SMD_3427	type IV pilus biogenesis protein PilN	57
SMD_3426	type IV pilus biogenesis protein PilO	81
SMD_3425	type IV pilus biogenesis protein PilP	59
SMD_3424	type IV pilus biogenesis protein PilQ	53
SMD_3356	two-component sensor PilS	6
SMD_1013	twitching motility protein PilT	57
SMD_1014	twitching motility protein	39
SMD_1448	type IV fimbrial biogenesis protein PilV	46
SMD_1449	type IV fimbrial biogenesis protein PilW	31
SMD_1450	type IV fimbrial biogenesis protein PilX	46
SMD_1451	type IV fimbrial biogenesis protein PilY1	49
SMD_0986	type IV pilus assembly protein PilZ	93
SMD_0847	glycosyltransferase	0
SMD_0722	proline iminopeptidase	184
SMD_2324	proline iminopeptidase	31
SMD_1645	low-affinity inorganic phosphate transporter	241
SMD_1068	Iron-uptake factor PiuC	41
SMD_1690	phospholipase C	14
SMD_0057	glycerol-3-phosphate acyltransferase	164
SMD_0096	1-acyl-sn-glycerol-3-phosphate acyltransferase	169
SMD_0223	nicotinamidase	77
SMD_0593	Nicotinate phosphoribosyltransferase	119
SMD_2958	Polyribonucleotide nucleotidyltransferase	1374
SMD_0732	NAD(P) transhydrogenase subunit alpha	31
SMD_0736	NAD(P) transhydrogenase subunit alpha	24
SMD_0737	NAD(P) transhydrogenase subunit beta	10

SMD_0158	PnuC-like transporter linked to homoserine kinase and OMR	9
SMD_0354	ribosyl nicotinamide transporter, PnuC-like	28
SMD_4122	DNA polymerase I	133
SMD_1411	Putrescine ABC transporter putrescine-binding protein PotF (TC 3	164
SMD_1412	Putrescine transport ATP-binding protein PotG (TC 3.A.1.11.2)	120
SMD_1413	Putrescine transport system permease protein PotH (TC 3.A.1.11	73
SMD_1414	Putrescine transport system permease protein PotI (TC 3.A.1.11.	76
SMD_2720	Lysyl-tRNA synthetase, class II	54
SMD_3340	pyruvate oxidase	12
SMD_3505	inorganic pyrophosphatase	858
SMD_0666	phosphoenolpyruvate carboxylase	31
SMD_0818	peptidyl-prolyl cis-trans isomerase	812
SMD_0879	peptidyl-prolyl cis-trans isomerase ppiD	223
SMD_0850	polyphosphate kinase	34
SMD_2613	phosphoenolpyruvate synthase	474
SMD_0849	exopolyphosphatase	76
SMD_0749	peptide chain release factor 1	80
SMD_2008	peptide chain release factor 2 programmed frameshift-containing	487
SMD_3205	peptide chain release factor 3	146
SMD_3793	helicase PriA essential for oriC/DnaA-independent DNA replicator	56
SMD_3679	oligopeptidase A	72
SMD_3838	50S ribosomal protein L11 methyltransferase	78
SMD_2865	gamma-glutamyl phosphate reductase	31
SMD_2866	glutamate 5-kinase	36
SMD_1011	pyrroline-5-carboxylate reductase	70
SMD_2380	L-Proline/Glycine betaine transporter ProP	31
SMD_0559	prolyl-tRNA synthetase	234
SMD_3182	methylisocitrate lyase	124
SMD_3181	2-methylcitrate synthase	304
SMD_3176	2-methylcitrate dehydratase	21
SMD_0821	propionate--CoA ligase	92
SMD_3183	propionate catabolism operon regulatory protein PrpR	28
SMD_0755	ribose-phosphate pyrophosphokinase	322
SMD_3008	phosphatidylserine decarboxylase	64
SMD_1752	PsiF repeat-containing protein	20
SMD_0562	CDP-diacylglycerol--serine O-phosphatidyltransferase	218
SMD_2607	CDP-diacylglycerol--serine O-phosphatidyltransferase	66
SMD_1382	phosphate transport system permease protein PstA (TC 3.A.1.7.1	7
SMD_1381	phosphate transport ATP-binding protein PstB (TC 3.A.1.7.1)	9
SMD_1383	phosphate transport system permease protein PstC (TC 3.A.1.7.1	8
SMD_1384	phosphate ABC transporter, periplasmic phosphate-binding protei	23
SMD_2406	phosphate-binding DING protein (related to PstS)	0
SMD_0757	peptidyl-tRNA hydrolase	226
SMD_0514	queuosine biosynthesis protein QueD	129
SMD_3668	protease II	84
SMD_1028	phosphocarrier protein, nitrogen regulation associated	382
SMD_1027	PTS system phosphoenolpyruvate-protein phosphotransferase	112
SMD_3164	adenylosuccinate synthetase	281
SMD_2770	Adenylosuccinate lyase	171
SMD_3912	Phosphoribosylaminoimidazole-succinocarboxamide synthase	60
SMD_3848	Phosphoribosylamine--glycine ligase	88
SMD_1439	phosphoribosylaminoimidazole carboxylase catalytic subunit	349

SMD_0841	Amidophosphoribosyltransferase	187
SMD_3847	IMP cyclohydrolase	124
SMD_1440	Phosphoribosylaminoimidazole carboxylase ATPase subunit	239
SMD_0576	Phosphoribosylformylglycinamide synthase, synthetase subunit	184
SMD_1049	Phosphoribosylformylglycinamide cyclo-ligase	216
SMD_1045	Phosphoribosylglycinamide formyltransferase	46
SMD_1179	Phosphoribosylglycinamide formyltransferase 2	40
SMD_0222	formyltetrahydrofolate deformylase	104
SMD_0356	proline dehydrogenase	254
SMD_3401	pyruvate kinase	111
SMD_1023	aspartate carbamoyltransferase	144
SMD_2882	dihydroorotase	129
SMD_1915	dihydroorotate dehydrogenase	85
SMD_0330	orotate phosphoribosyltransferase	349
SMD_0054	Orotidine 5'-phosphate decarboxylase	196
SMD_1651	CTP synthase	208
SMD_1335	uridylate kinase	251
SMD_3270	phage-related capsid packaging protein	34
SMD_2738	kynurenine 3-monooxygenase	41
SMD_0997	DeoR family transcriptional regulator SmQnrR	28
SMD_1259	sensor histidine kinase	28
SMD_1808	S-adenosylmethionine--tRNA ribosyltransferase-isomerase	56
SMD_3281	phage tail protein	0
SMD_1218	DNA repair protein RadA	127
SMD_0319	DNA repair protein RadC	4
SMD_1514	DNA repair protein RadC	1
SMD_0287	RarD protein, chloramphenicol sensitive	56
SMD_2961	ribosome-binding factor A	167
SMD_0675	ribokinase	215
SMD_0059	DNA recombination-dependent growth factor C	237
SMD_1678	recombinase A	865
SMD_4210	exodeoxyribonuclease V subunit beta	62
SMD_4211	exodeoxyribonuclease V subunit gamma	59
SMD_4209	exodeoxyribonuclease V subunit alpha	48
SMD_0003	DNA recombination and repair protein RecF	51
SMD_3441	ATP-dependent DNA helicase RecG	143
SMD_2004	ssDNA-specific exonuclease RecJ	76
SMD_1791	DNA repair protein RecN	96
SMD_3124	DNA recombination and repair protein RecO	71
SMD_3255	ATP-dependent DNA helicase RecQ	101
SMD_0966	Recombination protein RecR	96
SMD_1679	Regulatory protein RecX	231
SMD_3251	GTP pyrophosphokinase	100
SMD_0046	ATP-dependent DNA helicase Rep	70
SMD_0544	dTDP-glucose 4,6-dehydratase	412
SMD_0547	dTDP-4-dehydrorhamnose reductase	253
SMD_3855	ATP-dependent RNA helicase RhIB	253
SMD_0517	ATP-dependent RNA helicase RhIE	388
SMD_3859	transcription termination factor Rho	460
SMD_2937	Homoserine/homoserine lactone efflux protein	31
SMD_3768	3,4-dihydroxy-2-butanone 4-phosphate synthase	81
SMD_0616	3,4-dihydroxy-2-butanone 4-phosphate synthase	32

SMD_0611	Diaminohydroxyphosphoribosylaminopyrimidine deaminase	95
SMD_0615	riboflavin synthase subunit alpha	54
SMD_1196	riboflavin kinase	145
SMD_0617	6,7-dimethyl-8-ribityllumazine synthase	202
SMD_0564	ribosomal-protein-S18p-alanine acetyltransferase	29
SMD_3372	ribosomal protein S6 glutaminyl transferase	25
SMD_1227	16S rRNA processing protein RimM	433
SMD_2964	ribosome maturation factor RimP	329
SMD_2950	50S ribosomal protein L35	3720
SMD_1369	23S rRNA (guanosine-2'-O-)-methyltransferase rlmB	159
SMD_3061	50S m3Psi1915 methyltransferase RlmH	66
SMD_4230	50S m5C1962 methyltransferase RlmI	409
SMD_1395	23S rRNA (guanine-N-2-)-methyltransferase rlmL	65
SMD_1850	ribosomal RNA large subunit methyltransferase N	239
SMD_3639	Rare lipoprotein A	135
SMD_0820	ribosomal large subunit pseudouridine synthase A	31
SMD_1817	Similar to ribosomal large subunit pseudouridine synthase A	13
SMD_2836	ribosomal large subunit pseudouridine synthase B	201
SMD_0831	Pseudouridylate synthase	107
SMD_2822	ribosomal large subunit pseudouridine synthase C	79
SMD_3350	ribosomal large subunit pseudouridine synthase D	137
SMD_4072	ribosomal large subunit pseudouridine synthase E	53
SMD_1299	tRNA pseudouridine synthase A	126
SMD_3101	pseudouridylate synthase	64
SMD_0545	glucose-1-phosphate thymidyltransferase	487
SMD_0546	dTDP-4-dehydrorhamnose 3,5-epimerase	524
SMD_4220	DNA recombination protein RmuC	90
SMD_3126	ribonuclease III	155
SMD_2908	ribonuclease D	70
SMD_2823	ribonuclease E	215
SMD_3082	ferredoxin II	87
SMD_3054	ribonuclease G	119
SMD_0936	ribonuclease HI	179
SMD_1324	ribonuclease HII	74
SMD_0717	Regulator of nucleoside diphosphate kinase	231
SMD_4238	ribonuclease P protein component	176
SMD_0632	-	154675
SMD_1367	3'-to-5' exoribonuclease RNase R	146
SMD_1375	ribonuclease T	144
SMD_3641	Rod shape-determining protein RodA	14
SMD_3910	ribulose-phosphate 3-epimerase	136
SMD_2015	Sensory/regulatory protein rpfC	68
SMD_2016	RpfF protein	27
SMD_2014	response regulator	101
SMD_2228	RpfN protein	27
SMD_3455	ribonuclease PH	99
SMD_3469	ribose 5-phosphate isomerase A	146
SMD_0775	50S ribosomal protein L1	2825
SMD_0788	50S ribosomal protein L2	4719
SMD_0785	50S ribosomal protein L3	5251
SMD_0786	50S ribosomal protein L4	5302
SMD_0797	50S ribosomal protein L5	7293

SMD_0800	50S ribosomal protein L6	3293
SMD_2726	50S ribosomal protein L9	1933
SMD_0776	50S ribosomal protein L10	5308
SMD_0774	50S ribosomal protein L11	3770
SMD_0777	50S ribosomal protein L7/L12	5217
SMD_3896	50S ribosomal protein L13	2424
SMD_0795	50S ribosomal protein L14	5689
SMD_0804	50S ribosomal protein L15	3708
SMD_0792	50S ribosomal protein L16	4935
SMD_0810	50S ribosomal protein L17	1706
SMD_0801	50S ribosomal protein L18	2135
SMD_1229	50S ribosomal protein L19	1743
SMD_2949	50S ribosomal protein L20	3254
SMD_1191	50S ribosomal protein L21	3819
SMD_0790	50S ribosomal protein L22	4849
SMD_0787	50S ribosomal protein L23	5494
SMD_0796	50S ribosomal protein L24	5733
SMD_0756	50S ribosomal protein L25	2566
SMD_1192	50S ribosomal protein L27	2410
SMD_4132	50S ribosomal protein L28	4723
SMD_0793	50S ribosomal protein L29	5779
SMD_0803	50S ribosomal protein L30	4843
SMD_3439	50S ribosomal protein L31	1747
SMD_0975	50S ribosomal protein L32	1490
SMD_4131	50S ribosomal protein L33	1790
SMD_4239	50S ribosomal protein L34	2637
SMD_1837	50S ribosomal protein L36	1782
SMD_0809	DNA-directed RNA polymerase subunit alpha	2929
SMD_0778	DNA-directed RNA polymerase subunit beta	934
SMD_0779	DNA-directed RNA polymerase subunit beta'	1035
SMD_3765	RNA polymerase sigma factor RpoD	503
SMD_3132	RNA polymerase sigma factor RpoE	160
SMD_3502	Sigma factor, ECF subfamily	17
SMD_3850	RNA polymerase sigma factor RpoH	952
SMD_1034	RNA polymerase sigma-54 factor RpoN	88
SMD_2069	RNA polymerase sigma-54 factor RpoN	44
SMD_3444	DNA-directed RNA polymerase subunit omega	438
SMD_1839	30S ribosomal protein S1	3868
SMD_1338	30S ribosomal protein S2	2030
SMD_0791	30S ribosomal protein S3	4856
SMD_0808	30S ribosomal protein S4	4297
SMD_0802	30S ribosomal protein S5	3420
SMD_2728	30S ribosomal protein S6	2471
SMD_0781	30S ribosomal protein S7	3353
SMD_0799	30S ribosomal protein S8	2748
SMD_3895	30S ribosomal protein S9	1689
SMD_0784	30S ribosomal protein S10	5918
SMD_0807	30S ribosomal protein S11	3654
SMD_0780	30S ribosomal protein S12	2753
SMD_0806	30S ribosomal protein S13	3532
SMD_0798	30S ribosomal protein S14p (S29e) ## Zinc-independent	5252
SMD_2959	30S ribosomal protein S15	1247

SMD_1226	30S ribosomal protein S16	2243
SMD_0794	30S ribosomal protein S17	6413
SMD_2727	30S ribosomal protein S18	2420
SMD_0789	30S ribosomal protein S19	6001
SMD_1194	30S ribosomal protein S20	1465
SMD_0374	30S ribosomal protein S21	2411
SMD_0215	ribonucleotide reductase subunit alpha	595
SMD_0216	ribonucleotide reductase of class Ia (aerobic),beta subunit	519
SMD_3131	Sigma factor RpoE negative regulatory protein RseA	61
SMD_3775	ribosomal RNA small subunit methyltransferase B	122
SMD_0489	ribosomal RNA small subunit methyltransferase C	82
SMD_3232	ribosomal RNA small subunit methyltransferase E	90
SMD_0511	transcriptional regulator RstA	124
SMD_0490	ribosomal small subunit pseudouridine synthase A	121
SMD_4076	protein RtcB	85
SMD_3472	Rubredoxin	127
SMD_3122	23S rRNA (Uracil-5-)-methyltransferase RumA	101
SMD_3317	Holliday junction DNA helicase RuvA	88
SMD_3315	Holliday junction DNA helicase RuvB	134
SMD_3318	Crossover junction endodeoxyribonuclease RuvC	154
SMD_3282	phage tail completion protein	0
SMD_0664	adenosylhomocysteinase	948
SMD_2739	Exodeoxyribonuclease I	60
SMD_2834	segregation and condensation protein A	62
SMD_2835	segregation and condensation protein B	106
SMD_1967	fructokinase	106
SMD_3199	L-serine dehydratase	198
SMD_1734	succinate dehydrogenase flavoprotein subunit	807
SMD_1735	succinate dehydrogenase iron-sulfur protein	669
SMD_1732	succinate dehydrogenase cytochrome b-556 subunit	710
SMD_1733	succinate dehydrogenase hydrophobic membrane anchor protein	600
SMD_0651	protein export cytoplasm protein SecA ATPase RNA helicase (TC 3.A.5.1.1)	313
SMD_0125	protein export cytoplasm chaperone protein (SecB, maintains pro	828
SMD_1811	protein-export membrane protein SecD (TC 3.A.5.1.1)	312
SMD_1812	protein-export membrane protein SecF (TC 3.A.5.1.1)	515
SMD_2982	preprotein translocase subunit SecG (TC 3.A.5.1.1)	462
SMD_0805	preprotein translocase secY subunit (TC 3.A.5.1.1)	722
SMD_3450	L-seryl-tRNA(Sec) selenium transferase	29
SMD_3451	Selenocysteine-specific translation elongation factor	19
SMD_3453	Selenide,water dikinase	52
SMD_1976	D-3-phosphoglycerate dehydrogenase	68
SMD_2682	phosphoserine aminotransferase	123
SMD_2677	seryl-tRNA synthetase	179
SMD_3471	protein sirB1	93
SMD_0092	phosphohistidine phosphatase SixA	69
SMD_3040	FKBP-type peptidyl-prolyl cis-trans isomerase SlyD	455
SMD_2725	chromosome partition protein smc	60
SMD_4023	membrane fusion protein of RND family multidrug efflux pump	3
SMD_4022	RND efflux system, inner membrane transporter	6
SMD_4021	RND efflux system, outer membrane lipoprotein	9
SMD_3658	membrane fusion protein of RND family multidrug efflux pump	143
SMD_3657	RND efflux system, inner membrane transporter	244

SMD_3656	RND efflux system, outer membrane lipoprotein	170
SMD_2748	membrane fusion protein of RND family multidrug efflux pump	166
SMD_3873	membrane fusion protein	55
SMD_3874	acriflavin resistance plasma membrane protein	28
SMD_3875	acriflavin resistance plasma membrane protein	21
SMD_3392	membrane fusion protein of RND family multidrug efflux pump	24
SMD_3391	RND multidrug efflux transporter Acriflavin resistance protein	29
SMD_3528	RND efflux membrane fusion protein	21
SMD_3527	RND efflux transporter	33
SMD_4025	Response regulator BaeR	9
SMD_1762	LysR family transcriptional regulator	385
SMD_4024	sensory histidine kinase	18
SMD_3659	TetR family transcriptional regulator	88
SMD_1763	short chain dehydrogenase	490
SMD_1766	short-chain dehydrogenase/reductase	1364
SMD_1764	RND efflux system, membrane fusion protein CmeA	863
SMD_1504	RND multidrug efflux membrane fusion protein	4
SMD_1765	RND efflux system, inner membrane transporter CmeB	1118
SMD_1767	RND efflux system, outer membrane lipoprotein CmeC	1046
SMD_0909	RND efflux system, outer membrane lipoprotein, NodT family	4
SMD_1982	membrane fusion protein of RND family multidrug efflux pump	139
SMD_1983	RND efflux system, inner membrane transporter CmeB	64
SMD_3779	Rossmann fold nucleotide-binding protein Smf	22
SMD_3780	hypothetical protein	297
SMD_2370	Cobalt-zinc-cadmium resistance protein CzcA Cation efflux system	1
SMD_2371	hypothetical protein	2
SMD_2372	heavy metal RND efflux outer membrane protein, CzcC family	5
SMD_2131	heavy metal RND efflux outer membrane protein, CzcC family	9
SMD_1476	heavy metal RND efflux outer membrane protein, CzcC family	10
SMD_1829	Co/Zn/Cd efflux system membrane fusion protein	4
SMD_1830	transport protein	3
SMD_1831	transport protein	5
SMD_0147	heavy metal RND efflux outer membrane protein, CzcC family	3
SMD_2141	Outer membrane protein, probably efflux family protein	88
SMD_0148	Co/Zn/Cd efflux system membrane fusion protein	6
SMD_4138	hypothetical protein	12
SMD_4139	hypothetical protein	21
SMD_0142	Cobalt/zinc/cadmium efflux RND transporter, membrane fusion pr	9
SMD_4140	Cobalt-zinc-cadmium resistance protein CzcA Cation efflux system	42
SMD_0143	Cobalt-zinc-cadmium resistance protein CzcA Cation efflux system	18
SMD_1785	tmRNA-binding protein SmpB	155
SMD_0998	quinolone resistance protein	75
SMD_0127	ABC-type multidrug efflux pump	2
SMD_3970	L-sorbose dehydrogenase	11
SMD_2814	manganese superoxide dismutase	1199
SMD_2474	manganese superoxide dismutase	13
SMD_1442	superoxide dismutase	66
SMD_0114	superoxide dismutase	133
SMD_0115	superoxide dismutase	178
SMD_1008	Redox-sensitive transcriptional activator SoxR	22
SMD_1912	Spectinomycin phosphotransferase	35
SMD_3951	biosynthetic arginine decarboxylase	153

SMD_3899	S-adenosylmethionine decarboxylase	964
SMD_3952	spermidine synthase	236
SMD_0549	phosphoglucomutase	218
SMD_3105	Serine protease	26
SMD_3443	GTP pyrophosphokinase	71
SMD_3789	protease IV	163
SMD_1108	ssDNA-binding protein	437
SMD_1433	Stringent starvation protein A	129
SMD_1434	stringent starvation protein B	165
SMD_3466	-	27747
SMD_1893	FMN reductase	0
SMD_0100	NADPH:quinone oxidoreductase	43
SMD_0741	extracellular protease precursor	32
SMD_2774	2-oxoglutarate dehydrogenase E1 component	648
SMD_2775	dihydrolipoamide succinyltransferase component (E2) of 2-oxogl	801
SMD_3355	succinyl-CoA ligase subunit beta	2085
SMD_3354	succinyl-CoA ligase subunit alpha	1713
SMD_2730	Iron binding protein SufA for iron-sulfur cluster assembly	168
SMD_1078	Iron-sulfur cluster assembly protein SufB	63
SMD_1077	Iron-sulfur cluster assembly ATPase protein SufC	83
SMD_1076	Iron-sulfur cluster assembly protein SufD	64
SMD_2878	sulfur acceptor protein SufE for iron-sulfur cluster assembly	102
SMD_0946	quaternary ammonium compound-resistance protein sugE	22
SMD_3898	quaternary ammonium compound-resistance protein sugE	147
SMD_2893	inositol-1-monophosphatase	159
SMD_0701	survival protein SurA precursor (Peptidyl-prolyl cis-trans isomera:	443
SMD_1661	5'-nucleotidase	254
SMD_1019	DNA-3-methyladenine glycosylase	51
SMD_0716	transaldolase	214
SMD_3521	SAM-dependent methyltransferase	5
SMD_4172	twin-arginine translocation protein TatB	159
SMD_4171	twin-arginine translocation protein TatC	92
SMD_4069	Deoxyribonuclease TatD	66
SMD_4173	twin-arginine translocation protein Tata	245
SMD_0996	major facilitator superfamily protein TcrA	20
SMD_3548	Tricarboxylate transport transcriptional regulator TctD	60
SMD_3519	Threonine dehydratase	10
SMD_0835	L-threonine 3-dehydrogenase	202
SMD_0043	thymidine kinase	81
SMD_0683	Arylesterase precursor	27
SMD_1185	acyl-CoA thioesterase II	108
SMD_2599	transcription accessory protein	89
SMD_1809	tRNA-guanine transglycosylase	74
SMD_3512	Thiamin biosynthesis protein ThiC	7
SMD_1703	phosphomethylpyrimidine kinase	55
SMD_3473	Thiamin-phosphate pyrophosphorylase	46
SMD_3378	Thiazole biosynthesis protein ThiG	201
SMD_0619	Thiamine-monophosphate kinase	84
SMD_3377	sulfur carrier protein ThiS	180
SMD_1939	Aspartokinase	18
SMD_1940	Homoserine kinase	17
SMD_1941	Threonine synthase	21

SMD_2952	Threonyl-tRNA synthetase	538
SMD_0694	thymidylate synthase	158
SMD_0869	cell division trigger factor	482
SMD_3046	tRNA(Ile)-lysine synthetase	27
SMD_3416	transketolase	277
SMD_3052	TldD protein	114
SMD_0984	thymidylate kinase	60
SMD_1782	-	95024
SMD_2147	Tn5044 transposase	21
SMD_0162	TolA protein	28
SMD_3311	TolA protein	156
SMD_3310	tolB protein precursor, periplasmic protein involved in the tonb-in	253
SMD_3531	type I secretion outer membrane protein, TolC precursor	491
SMD_3313	motA/TolQ/ExbB proton channel family protein	205
SMD_3312	Tol biopolymer transport system, TolR protein	167
SMD_3783	DNA topoisomerase I	145
SMD_1567	DNA topoisomerase III	3
SMD_2983	triosephosphate isomerase	140
SMD_0922	Conjugative transfer protein TrbB	0
SMD_0923	Conjugative transfer protein TrbC	1
SMD_0924	Conjugative transfer protein TrbD	0
SMD_0925	Conjugative transfer protein TrbE	1
SMD_0929	Conjugative transfer protein TrbF	0
SMD_0930	Conjugative transfer protein TrbG	2
SMD_0931	Conjugative transfer protein TrbI	4
SMD_0926	Conjugative transfer protein TrbJ	1
SMD_0928	Conjugative transfer protein TrbL	0
SMD_2323	TrbP protein	26
SMD_3379	tRNA (guanine46-N7-)-methyltransferase	148
SMD_1228	tRNA (Guanine37-N1)-methyltransferase	233
SMD_4235	GTPase and tRNA-U34 5-formylation enzyme TrmE	33
SMD_2892	tRNA:Cm32/Um32 methyltransferase	78
SMD_0338	Ala tRNA	860
SMD_0343	Ala tRNA	871
SMD_2584	Ala tRNA	606
SMD_2586	Ala tRNA	913
SMD_2588	Ala tRNA	610
SMD_2910	Ala tRNA	25
SMD_4181	Ala tRNA	1498
SMD_4186	Ala tRNA	2046
SMD_0863	Arg tRNA	187
SMD_1699	Arg tRNA	170
SMD_1700	Arg tRNA	364
SMD_1701	Arg tRNA	471
SMD_1920	Arg tRNA	24
SMD_3996	Arg tRNA	53
SMD_1453	Asn tRNA	7
SMD_0875	Asp tRNA	1806
SMD_0876	Asp tRNA	686
SMD_0877	Asp tRNA	627
SMD_0878	Asp tRNA	119
SMD_1590	Cys tRNA	13

SMD_2965	Met tRNA	185
SMD_2966	Met tRNA	1174
SMD_0754	Gln tRNA	669
SMD_3894	Gln tRNA	32
SMD_1713	Glu tRNA	47
SMD_2585	Glu tRNA	1665
SMD_2587	Glu tRNA	2432
SMD_2589	Glu tRNA	878
SMD_0768	Gly tRNA	2466
SMD_1473	Gly tRNA	248
SMD_1581	Gly tRNA	157
SMD_1588	Gly tRNA	435
SMD_1589	Gly tRNA	382
SMD_3375	Gly tRNA	176
SMD_0864	His tRNA	305
SMD_0339	Ile tRNA	545
SMD_0344	Ile tRNA	463
SMD_3763	Ile tRNA	106
SMD_4180	Ile tRNA	704
SMD_4185	Ile tRNA	863
SMD_0868	Leu tRNA	101
SMD_1362	Leu tRNA	34
SMD_1365	Leu tRNA	18
SMD_1366	Leu tRNA	52
SMD_1631	Leu tRNA	532
SMD_2593	Leu tRNA	22
SMD_2981	Leu tRNA	1096
SMD_0865	Lys tRNA	74
SMD_0866	Lys tRNA	8
SMD_3304	Lys tRNA	40
SMD_3893	Met tRNA	212
SMD_2916	Phe tRNA	226
SMD_2917	Phe tRNA	34
SMD_0862	Pro tRNA	172
SMD_2858	Pro tRNA	110
SMD_2859	Pro tRNA	14
SMD_2944	Pro tRNA	30
SMD_2178	Xaa tRNA	88
SMD_3452	Sec tRNA	81
SMD_0939	Ser tRNA	16
SMD_0963	Ser tRNA	94
SMD_1682	Ser tRNA	176
SMD_2672	Ser tRNA	24
SMD_0268	Thr tRNA	67
SMD_0769	Thr tRNA	3242
SMD_1210	Thr tRNA	4
SMD_0771	Trp tRNA	1366
SMD_0767	Tyr tRNA	2249
SMD_0874	Val tRNA	2113
SMD_0987	Val tRNA	17
SMD_1456	Val tRNA	810
SMD_1457	Val tRNA	44

SMD_2990	tryptophan synthase subunit alpha	47
SMD_2992	tryptophan synthase subunit beta	45
SMD_3903	indole-3-glycerol phosphate synthase	115
SMD_3904	anthranilate phosphoribosyltransferase	61
SMD_3907	Anthranilate synthase, aminase component	100
SMD_2999	phosphoribosylanthranilate isomerase	87
SMD_0280	tryptophanyl-tRNA synthetase	209
SMD_3000	tRNA pseudouridine synthase A	84
SMD_2960	tRNA pseudouridine synthase B	83
SMD_0188	tRNA pseudouridine synthase C	109
SMD_1659	tRNA pseudouridine 13 synthase	75
SMD_2630	integral inner membrane protein of type IV secretion complex (Vi	218
SMD_3857	Thioredoxin	483
SMD_2112	thioredoxin reductase	200
SMD_1337	translation elongation factor Ts	1445
SMD_0770	translation elongation factor Tu	3493
SMD_0783	translation elongation factor Tu	3318
SMD_0817	GTP-binding protein TypA/BipA	583
SMD_1799	prephenate dehydrogenase	81
SMD_0336	tyrosyl-tRNA synthetase	153
SMD_3995	4-hydroxybenzoate polyprenyltransferase	70
SMD_0182	Ubiquinone biosynthesis monooxygenase UbiB	137
SMD_3651	Ubiquinone/menaquinone biosynthesis methyltransferase UbiE	428
SMD_0707	2-octaprenyl-3-methyl-6-methoxy-1,4-benzoquinol hydroxylase	120
SMD_2886	3-demethylubiquinone-9 3-methyltransferase	103
SMD_0706	2-octaprenyl-6-methoxyphenol hydroxylase	150
SMD_3851	uracil-DNA glycosylase	138
SMD_1755	uracil phosphoribosyltransferase	118
SMD_1333	undecaprenyl pyrophosphate synthetase	160
SMD_1826	ABC transporter ATP-binding protein	153
SMD_1190	excinuclease ABC subunit A	144
SMD_1455	excinuclease ABC subunit B	57
SMD_1471	excinuclease ABC subunit C	71
SMD_4127	ATP-dependent DNA helicase UvrD/PcrA	207
SMD_3287	baseplate assembly protein V	1
SMD_0566	valyl-tRNA synthetase	179
SMD_3104	leucine dehydrogenase	66
SMD_2636	ATPase provides energy for both assembly of type IV secretion cc	196
SMD_2632	ATPase provides energy for both assembly of type IV secretion cc	186
SMD_2638	protein VirB9	145
SMD_0920	type IV secretion system protein VirD4	0
SMD_2641	type IV secretion system protein VirD4	57
SMD_3288	phage baseplate assembly protein	2
SMD_3772	lipopolysaccharide core biosynthesis glycosyl transferase	53
SMD_1844	Epimerase/dehydratase protein	115
SMD_1843	lipopolysaccharide core biosynthesis protein	103
SMD_1633	Polysaccharide biosynthetic protein	122
SMD_0599	UDP-N-acetylglucosamine 2-epimerase	10
SMD_0744	Trp repressor binding protein	59
SMD_0532	hypothetical protein	454
SMD_0529	O-antigen export system permease protein RfbD	275
SMD_0530	ABC transporter ATP-binding protein	331

SMD_3276	phage-related tail protein	2
SMD_2182	xanthine dehydrogenase accessory factor	7
SMD_3663	Site-specific tyrosine recombinase	80
SMD_0573	tyrosine recombinase XerD	36
SMD_0590	General secretion pathway protein D / Type II secretion outermei	39
SMD_0580	General secretion pathway protein E / Type II secretion cytoplasm	56
SMD_0581	General secretion pathway protein F / Type II secretory pathway,	36
SMD_0582	General secretion pathway protein G	31
SMD_0583	General secretion pathway protein H	30
SMD_0584	General secretion pathway protein I	38
SMD_0585	General secretion pathway protein J	17
SMD_0588	General secretion pathway protein M	32
SMD_0589	General secretion pathway protein N	33
SMD_3047	Exodeoxyribonuclease VII small subunit	203
SMD_2306	Exodeoxyribonuclease III	2
SMD_4151	Exodeoxyribonuclease III	192
SMD_2239	Xylose isomerase	3
SMD_2238	D-xylose proton-symporter XylE	3
SMD_1712	D-xylose proton-symporter XylE	16
SMD_2233	beta-xylosidase	3
SMD_0190	hypothetical protein	79
SMD_2183	periplasmic aromatic aldehyde oxidoreductase,molybdenum bindi	7
SMD_2184	periplasmic aromatic aldehyde oxidoreductase,FAD binding subur	8
SMD_2185	periplasmic aromatic aldehyde oxidoreductase,iron-sulfur subunit	13
SMD_0183	hypothetical protein	41
SMD_1810	preprotein translocase subunit YajC (TC 3.A.5.1.1)	483
SMD_3068	Thioredoxin domain-containing protein EC-YbbN	82
SMD_3062	iojap protein ribosome-associated protein	444
SMD_0983	protein YceG like	59
SMD_4088	protein YcgL	146
SMD_0758	GTP-binding and nucleic acid-binding protein YchF	294
SMD_2833	YciL protein	208
SMD_3090	heat shock protein YegD	19
SMD_3006	adenine-specific methylase	223
SMD_3388	tRNA/rRNA methyltransferase	84
SMD_1033	ribosome hibernation protein YhbH	403
SMD_1020	transport protein	33
SMD_4237	inner membrane protein translocase component YidC, long form	325
SMD_2881	protein YidD	54
SMD_0278	protein YjbJ	15
SMD_2902	ATPase	62
SMD_2790	deoxyribonuclease	101
SMD_3245	dinG family ATP-dependent helicase YoaA	78
SMD_1021	hypothetical protein	268
SMD_3920	hypothetical protein	30
SMD_4231	-	145
SMD_2724	cell division protein ZipA	131
SMD_2583	merR family transcriptional regulator	7
SMD_2821	Zinc transporter ZupT	38
SMD_1280	Zinc uptake regulation protein ZUR	215
SMD_1729	glucose-6-phosphate 1-dehydrogenase	78

D457 (Wt)	FoldChange MBS292	MBS287
114	0,798245614	98
140	0,878571429	164
1141	0,758983348	988
948	0,739451477	687
38	1,052631579	36
47	3,085106383	81
97	0,762886598	76
14	1,071428571	14
3	3	9
3	2,666666667	1
11	0,636363636	11
173	0,826589595	156
3446	1,358676727	5561
25	1,48	39
126	0,880952381	94
120	0,966666667	105
71	0,901408451	72
28	1,214285714	35
126	0,785714286	106
91	0,923076923	79
2	1	2
3	1	4
25	1	25
26	1,153846154	34
17	1,058823529	18
66	1,106060606	41
22	1,136363636	19
35	1,314285714	63
9	1,111111111	6
20	1,05	30
37	0,810810811	35
30	1,033333333	30
14	0,785714286	11
8	0,875	12
152	0,690789474	126
77	1	80
45	1,088888889	46
3	1,333333333	2
94	1,319148936	136
1	2	2
2	4,5	2
3	0,666666667	1
39	1	46
13	1,384615385	22
7	2,142857143	11
15	1,533333333	21
51	0,901960784	49
73	0,945205479	63
18	1,111111111	18
15	1,066666667	10
18	1,055555556	16

35	1,085714286	35
37	0,837837838	32
42	1	43
98	0,755102041	80
91	0,89010989	80
62	0,758064516	44
39	0,769230769	22
124	0,85483871	93
36	1,305555556	64
41	0,902439024	38
84	0,904761905	104
37	1,108108108	59
60	0,983333333	58
103	0,873786408	101
74	0,77027027	66
184	0,864130435	158
280	1,1	365
43	1,279069767	55
3	0,333333333	3
6	0,333333333	2
126	1,015873016	119
136	0,639705882	78
50	1,08	67
62	0,951612903	82
166	0,825301205	122
217	0,976958525	164
477	0,911949686	385
39	1,179487179	33
14	1,142857143	19
10	0,9	11
40	1,225	31
72	1,430555556	76
533	1,671669794	591
18	0,888888889	17
17	1,235294118	21
40	0,725	38
7	2,428571429	8
11	1,090909091	11
8	0,875	10
76	0,921052632	164
676	1,958579882	1852
29	1,620689655	57
10	1,5	18
100	1,04	122
16	1,1875	13
11	1,090909091	10
27	1,185185185	26
116	1,094827586	260
48	0,729166667	41
74	1,162162162	66
40	1	48
51	1,137254902	62

14	1,071428571	17
45	0,888888889	44
84	0,916666667	111
3	7,666666667	10
68	0,941176471	83
134	1,365671642	238
58	0,74137931	26
79	1,101265823	85
70	0,828571429	69
151	1,006622517	133
9	0,444444444	5
2	1,5	3
3	1,666666667	6
46	0,934782609	40
50	1,18	36
114	0,929824561	108
1	3	3
1	7	1
8	1,375	12
22	1,227272727	23
22	0,545454545	11
44	0,818181818	38
41	1,024390244	41
125	0,944	100
58	0,931034483	44
207	1,120772947	212
208	1,091346154	245
27	1,148148148	28
40	1,2	52
40	1	44
16	1,875	21
204	1,151960784	211
117	1,051282051	109
71	0,985915493	64
46	1,152173913	48
56	0,964285714	54
30	1,566666667	33
73	0,835616438	46
44	0,886363636	41
65	1,030769231	54
19	1,315789474	30
95	1,273684211	138
16	3	33
16	1,4375	18
407	1,734643735	781
250	2,408	631
176	1,403409091	330
130	1,576923077	264
37	1,108108108	30
34	12,55882353	223
29	13,44827586	254
32	12,59375	229

48	17,02083333	462
48	14,47916667	391
20	14,2	192
24	9,916666667	184
21	7,761904762	147
24	5,958333333	105
12	7,916666667	64
17	5,411764706	53
16	7,75	80
15	6,466666667	63
14	6,571428571	59
14	6,142857143	59
17	6,352941176	67
18	5,388888889	62
15	7,6	82
30	3,3	78
10	5	41
31	2,516129032	61
177	1,355932203	260
113	1,398230088	170
350	1,051428571	429
409	1,090464548	588
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127	1,220472441	163
29	1,275862069	36
21	0,761904762	18
29	1,137931034	41
33	1,090909091	37
15	1,6	16
5	1,8	9
9	1,222222222	9
8	1	11
79	1,050632911	77
77	1,077922078	60
149	0,852348993	131
32	1,4375	47
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54	0,907407407	45
685	0,902189781	646
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24	0,958333333	30
224	1,080357143	260
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26	1,230769231	25
70	1,2	82
119	1,218487395	181

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798	0,619047619	403
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207	1,014492754	179
170	1,247058824	185
21	1,238095238	16
14	1,5	13
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163	0,81595092	132
101	0,821782178	111
161	0,962732919	136
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121	1,173553719	131
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87	1	89
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109	1,091743119	103
32	1,3125	32
35	0,942857143	39
27	0,592592593	17
42	0,880952381	32
302	0,748344371	240
65	0,938461538	54
76	1,065789474	96
27	1,148148148	35
48	0,645833333	34
73	1,082191781	80
43	0,720930233	33
18	0,777777778	16
31	1,032258065	37
29	1,24137931	44
31	0,806451613	37
21	1,380952381	29
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203	0,724137931	151
44	0,977272727	51
23	1,086956522	34
33	0,96969697	44
26	1,230769231	30
26	1,730769231	46
31	0,903225806	24
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214	0,953271028	160
135	1,014814815	117
179	0,61452514	118
585	0,885470085	464
32	1,28125	85
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223	1,031390135	261
140	1,021428571	212
71	0,901408451	56
47	0,489361702	13
13	0,923076923	8
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38	1,131578947	42
97	1,144329897	113
112	0,839285714	80
130	0,946153846	102
106	1,188679245	94
220	0,904545455	194
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27	0,703703704	22
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466	0,944206009	416
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223	0,793721973	180
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77	0,961038961	79
55	0,963636364	68
52	0,903846154	48
68	0,764705882	60
88	0,897727273	73
53	0,867924528	49
59	2,830508475	92
157	0,929936306	158
99	0,707070707	81
39	0,538461538	25
116	0,870689655	103
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103	0,902912621	89
43	0,930232558	41
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16	1	19
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112	1,107142857	158
653	0,87136294	341
408	0,745098039	254
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41	1,487804878	54
412	0,827669903	301
129	1,108527132	204
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37	1,081081081	31
103	0,718446602	73
151	0,735099338	137
237	0,58649789	133
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28	0,857142857	27
71	0,704225352	44
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58	0,896551724	58
34	0,911764706	34
56	0,946428571	53
27	0,888888889	24
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84	0,976190476	71
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142	0,866197183	90
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31	1,129032258	110
17	0,588235294	13
34	0,617647059	42
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173	0,936416185	131
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141	1,19858156	124
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96	0,833333333	59
85	1,105882353	78
36	0,777777778	22
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13	0,846153846	9
74	0,959459459	77
95	1,242105263	112
120	0,941666667	114
34	0,970588235	29
13	1,076923077	14
9	1,333333333	13
54	0,740740741	51
249	0,979919679	242
230	0,917391304	243
24	1,541666667	36
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92	0,989130435	98
34	1,117647059	37
38	1,210526316	37
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219	0,936073059	131
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57	1,122807018	76
83	0,771084337	62
5	1,6	7
30	1,166666667	46
10335	0,851088534	8364
203	1,054187192	160
196	1,091836735	188
243	0,736625514	112
200	0,915	190
111	0,927927928	92
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69	0,985507246	56
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77	1,103896104	79

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15	1	18
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109	1,266055046	148
112	0,866071429	107
111	1,018018018	105
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135	1,125925926	152
91	1,263736264	97
38	1	32

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21	1,095238095	24
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56	1	59
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647	0,820710974	425
190	0,957894737	210
39	1,128205128	34
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39	0,948717949	49
46	1,086956522	47
84	1,023809524	59
29	0,551724138	10
24	0,958333333	16
28	1,357142857	43
9	1,777777778	15
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13	1,076923077	14
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25	1	24
52	1,25	51
31	0,967741935	39
29	0,827586207	23
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78	0,987179487	72
62	0,661290323	41

22	0,772727273	21
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74	1,081081081	107
151	0,867549669	138
84	0,880952381	72
207	1,096618357	200
153	1,013071895	165
97	0,804123711	94
45	1,355555556	52
35	1,171428571	45
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133	1,037593985	120
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66	0,863636364	63
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46	1,304347826	66
55	0,727272727	38
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42	0,619047619	31
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326	0,481595092	158
51	0,647058824	17
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26	0,5	18
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28	1,142857143	31
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56	0,767857143	30
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59	1,423728814	74
42	1,30952381	43
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185	0,691891892	86
287	0,745644599	142
317	0,750788644	164
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37	0,756756757	25
13	0,923076923	7
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24	0,541666667	14
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36	0,777777778	33
433	1,159353349	548
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377	0,48806366	247
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130	0,830769231	132
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179	0,82122905	165
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941	0,626992561	628
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57	1,280701754	81
40	0,75	44
6	0,833333333	9
2	0	3
1	1	0
0	#iDIV/0!	1
1	0	0
7	1,428571429	10
1	4	2
0	#iDIV/0!	0
1	0	0
1	0	1
0	#iDIV/0!	1
0	#iDIV/0!	0
1	0	0
1	0	0
0	#iDIV/0!	5
2	0,5	4
197	1,319796954	311
105	1,323809524	172
100	1,47	201
76	1,789473684	189
104	1,259615385	214
73	1,410958904	118
56	1,589285714	78
24	1,75	31
8	1,5	9
1	0	1
0	#iDIV/0!	0
0	#iDIV/0!	0
0	#iDIV/0!	0
0	#iDIV/0!	1
2	0	0
1	2	1
7	0,714285714	4
2	2,5	0
1	1	0
0	#iDIV/0!	0
0	#iDIV/0!	0
0	#iDIV/0!	0
0	#iDIV/0!	1
2	0	0
0	#iDIV/0!	0
0	#iDIV/0!	0
0	#iDIV/0!	0
1	0	1
10	1,4	14
9	1,333333333	10
8	1	10
0	#iDIV/0!	0
0	#iDIV/0!	0
1	0	1

2		3	4
0	#iDIV/0!		1
1		0	1
0	#iDIV/0!		2
0	#iDIV/0!		0
3		2	3
1		0	1
1		0	0
8		1,25	6
9	1,222222222		10
16		1	17
74	1,121621622		74
32		1,1875	40
132	0,916666667		90
96	0,895833333		69
94	0,829787234		69
99	0,919191919		100
77	0,623376623		51
31	0,580645161		25
32		1,3125	27
12	1,416666667		11
4		1,75	6
1		10	5
4		1,25	3
3		1	0
1		3	3
2		3,5	3
3		1	0
2		2,5	0
0	#iDIV/0!		3
3		2	4
2		1	2
2		2,5	3
1		16	7
2		3	5
1		4	2
2		3	3
1		5	0
0	#iDIV/0!		1
1		3	1
1		1	1
1		0	1
3	0,666666667		2
3	1,666666667		3
11		1	11
93	0,946236559		101
83	0,879518072		75
10		1	10
7	0,571428571		5
31	0,741935484		26
19		1	18
27	0,703703704		20

38	0,710526316	48
141	0,808510638	149
113	1,097345133	124
514	0,972762646	478
427	0,922716628	411
398	1,228643216	491
75	0,986666667	80
54	0,851851852	41
49	0,734693878	36
71	1,323943662	84
113	1,008849558	104
18	3,722222222	67
38	1,052631579	44
269	1,104089219	293
305	0,721311475	204
34	0,705882353	18
58	0,862068966	38
219	0,858447489	246
86	0,779069767	66
81	1,148148148	82
30	1,066666667	30
38	1	43
195	0,994871795	175
114	0,780701754	94
153	0,830065359	132
239	1,058577406	261
64	0,765625	53
107	1,23364486	111
26	1,076923077	36
7	0,857142857	5
9	1,111111111	6
0	#jDIV/0!	4
0	#jDIV/0!	0
2	1	1
45	0,688888889	50
303	0,96039604	357
2	1,5	1
7	0,857142857	13
10	1,2	14
6	1,5	11
16	1,25	16
30	1,133333333	43
30	1,3	46
90	1,211111111	124
126	0,865079365	150
143	1	172
243	0,835390947	260
424	1,063679245	497
142	0,612676056	84
124	1,290322581	122
90	1,111111111	89
119	0,87394958	122

131	0,86259542	146
42	1,452380952	69
79	1,151898734	86
131	1,030534351	122
38	0,763157895	30
132	1,113636364	179
111	1,162162162	166
38	0,789473684	43
61	0,836065574	71
65	1,907692308	54
52	0,884615385	32
767	0,933507171	806
69	1,782608696	156
16	1,375	24
68	1,367647059	60
2	1,5	4
3	1,666666667	4
1	0	2
1	3	1
15	1,066666667	12
221	1,027149321	360
5	41,8	344
3	8	51
15	2,133333333	42
2	1,5	2
4	1,25	6
2	4	5
12	1,333333333	19
29	1,068965517	38
60	0,883333333	95
11	0,727272727	10
82	0,670731707	92
43	1	49
24	1,041666667	43
21	1,666666667	33
68	0,955882353	56
176	0,982954545	123
336	0,961309524	375
10	1,1	6
30	1	29
16	1,125	17
5	1,2	7
38	1,394736842	39
28	1,357142857	32
51	1,078431373	57
31	1,387096774	42
42	0,928571429	43
36	0,916666667	52
85	0,858823529	78
83	1,240963855	193
357	0,8767507	206
67	1,059701493	67

61	1,229508197	69
111	0,846846847	97
18	0,833333333	19
25	1,2	30
4	1	18
11	1,272727273	10
65	0,907692308	59
48	0,916666667	60
95	0,968421053	116
111	0,963963964	115
218	1,105504587	227
90	0,888888889	97
98	0,826530612	112
156	0,705128205	118
166	0,921686747	146
102	1,019607843	184
94	1,117021277	259
33	1,575757576	89
168	0,75	137
394	0,847715736	330
378	0,984126984	353
35	1,228571429	44
76	0,75	66
100	0,97	127
90	0,922222222	111
8	0,625	5
3	0,666666667	4
10	1	7
22	1	25
29	0,551724138	26
20	1,75	33
18	0,666666667	13
8	0,625	11
9	0,888888889	6
13	0,846153846	19
17	1,294117647	36
27	0,925925926	25
42	0,714285714	37
14	0,785714286	16
3	1,666666667	7
50	1,32	104
35	1,342857143	64
10	0,9	20
11	1	12
39	1,256410256	38
10	1,2	11
22	1	25
13	0,846153846	8
3	0,666666667	2
0	#jDIV/0!	0
3	0	0
1	2	2

4	0,75	3
1	2	1
1	0	2
1	1	2
1	4	4
2	1,5	5
2	1	2
48	0,9375	42
10	0,9	8
12	1,416666667	14
16	0,75	11
23	0,652173913	9
2	1,5	8
14	0,642857143	8
13	0,538461538	8
7	0,857142857	6
38	1,078947368	47
49	1,06122449	58
91	1,32967033	125
76	0,776315789	69
280	1,007142857	317
6	1,833333333	9
5	0,6	4
29	0,931034483	27
51	1	44
58	0,879310345	34
73	0,780821918	42
89	0,898876404	61
62	1,064516129	60
91	0,901098901	78
47	0,872340426	26
31	0,935483871	25
4	2	10
7	1	6
19	0,631578947	22
43	0,976744186	59
28	1,071428571	35
13	0,769230769	10
22	0,636363636	18
82	0,792682927	48
15	0,866666667	4
71	1,042253521	65
67	0,791044776	69
64	0,890625	57
53	1,037735849	62
9	1	10
48	0,708333333	44
267	0,625468165	184
129	1,015503876	162
127	0,755905512	134
130	0,915384615	150
175	0,885714286	158

59	0,915254237	42
95	0,789473684	69
48	0,958333333	46
57	0,912280702	51
137	1,240875912	160
55	1,181818182	65
32	1,15625	42
48	1,166666667	63
88	0,931818182	62
210	1,152380952	336
141	0,872340426	142
42	0,857142857	52
45	0,888888889	56
145	0,662068966	111
80	0,8625	51
16	0,3125	8
17	0,411764706	4
17	0,764705882	14
143	0,979020979	135
34	0,911764706	36
12	0,916666667	13
4	0,75	1
86	0,639534884	59
7	0,857142857	4
18	1,166666667	27
12	0,833333333	18
53	0,660377358	32
48	0,75	49
10	1,3	20
35	1,114285714	29
99	0,98989899	62
344	0,863372093	209
38	1,236842105	31
22	1,363636364	17
183	1,114754098	129
32	1,1875	24
36	1,083333333	23
3	0,333333333	2
1	2	3
61	0,885245902	84
114	0,728070175	166
123	0,609756098	76
89	1,056179775	53
116	0,931034483	80
83	0,795180723	62
50	0,9	53
30	0,833333333	28
31	1,161290323	20
30	0,533333333	21
44	0,886363636	26
141	1,120567376	95
97	1,206185567	143

223	0,98206278	223
359	0,766016713	288
28	0,714285714	35
13	0,538461538	5
47	1,127659574	63
30	0,9	36
131	1,007633588	136
124	0,774193548	133
91	0,472527473	44
77	0,649350649	72
16	0,625	12
8	0,625	13
6	1,166666667	7
7	0,857142857	7
10	0,8	8
41	0,975609756	24
157	0,853503185	140
45	0,933333333	36
23	0,434782609	25
26	0,807692308	33
56	0,946428571	72
61	1,229508197	85
113	0,938053097	121
79	0,924050633	83
109	1,009174312	131
38	1,184210526	49
9	0,777777778	7
38	1,052631579	24
1	0	1
1	2	2
0	#_iDIV/0!	0
1	1	1
1	1	0
1	0	0
2	1	2
2	0,5	1
0	#_iDIV/0!	1
8	0,5	9
4	1,5	3
15	0,533333333	6
31	0,903225806	29
46	0,869565217	49
31	1,064516129	40
6	0,5	4
2	3,5	1
3	1	2
25	0,72	25
24	1,083333333	34
0	#_iDIV/0!	2
2	0,5	1
11	0,818181818	15
5	0,4	1

3	1	1
8	0,75	6
115	0,773913043	143
5	0,6	5
3	0,666666667	2
16	1,125	18
31	1,032258065	31
10	1,3	18
11	0,272727273	8
42	0,952380952	44
9	1,222222222	14
9	1	6
21	0,857142857	23
2	2,5	4
4	1,5	2
1	2	1
16	1,1875	13
11	1,181818182	20
1	0	1
1	0	1
2	2	5
2	0,5	3
0	#jDIV/0!	2
1	0	3
3	0,666666667	6
1	1	1
0	#jDIV/0!	2
8	1,875	7
1	3	1
4	0,25	1
3	1	3
1	1	2
2	1	1
1	1	0
0	#jDIV/0!	1
0	#jDIV/0!	1
3	0,666666667	3
3	0,666666667	7
7	0,428571429	8
8	1	12
13	1,461538462	47
34	0,617647059	61
74	0,891891892	109
178	0,966292135	284
64	0,78125	102
12	1,166666667	18
8	1,5	9
4	1	3
2	2	3
1	2	2
21	1,047619048	23
3	1,333333333	5

2	0,5	2
6	1	7
8	0,5	5
13	0,923076923	17
2	1	4
3	1,333333333	4
3	1,333333333	3
14	1,071428571	13
2	1	3
8	1	5
7	0,571428571	6
8	1	6
6	0,666666667	12
53	0,716981132	54
33	1	42
3	2,333333333	4
8	0,875	14
10	0,9	20
6	1	8
11	1	14
1	0	3
0	#iDIV/0!	3
1	0	0
0	#iDIV/0!	1
1	1	3
13	0,538461538	5
2	1,5	3
4	1,25	4
63	0,873015873	66
39	0,948717949	61
15	0,8	16
9	1,333333333	15
10	2	19
1	0	1
1	0	0
1	4	3
3	0	0
0	#iDIV/0!	0
1	2	1
1	0	0
1	2	2
1	0	1
0	#iDIV/0!	1
0	#iDIV/0!	0
0	#iDIV/0!	2
2	2,5	3
2	3	3
2	1,5	3
0	#iDIV/0!	4
5	1,2	8
19	0,789473684	18
2	1	3

0	#iDIV/0!	3
0	#iDIV/0!	0
14	0,928571429	7
127	1,11023622	177
83	0,963855422	106
45	1,177777778	62
9	0,555555556	8
1	2	2
3	1,333333333	0
6	0,666666667	10
4	0,75	3
1	1	0
1	2	1
1	0	0
0	#iDIV/0!	0
1	2	0
10	1	9
27	0,444444444	16
48	0,708333333	32
64	0,84375	33
50	0,8	30
38	0,631578947	26
56	0,982142857	50
19	1,421052632	34
3	1	4
10	1,1	7
10	1	10
3	1	4
6	0,333333333	5
1	1	0
13	0,461538462	5
18	0,444444444	77
20	1,05	20
27	0,703703704	15
12	1	7
4	2	5
4	1,5	7
73	0,849315068	86
45	1	66
37	0,810810811	42
5	1,2	5
3	1	3
13	0,846153846	17
7	1,285714286	10
32	0,9375	28
15	1	16
4	1,25	4
11	0,636363636	8
89	1,078651685	89
6	0,666666667	7
5	2	9
2	1,5	2

3	1	1
4	0,25	2
1	4	1
1	1	2
2	0	4
19	0,894736842	22
0	#iDIV/0!	1
0	#iDIV/0!	1
2	0,5	2
2	0,5	1
5	1,6	6
8	1	6
2	1,5	4
17	0,823529412	28
15	1	14
66	0,863636364	92
5	0,6	2
4	0,25	2
6	0,666666667	2
41	1,048780488	42
28	1,25	33
80	0,85	89
2	3	2
12	0,75	5
2	1	3
2	1	1
6	1	5
15	0,733333333	12
17	1,235294118	24
1	0	2
5	1,2	3
5	3,2	11
8	0,625	4
1	1	1
2	0	0
1	1	0
5	1,4	6
2	1	2
1	0	1
1	2	1
0	#iDIV/0!	2
0	#iDIV/0!	1
20	0,65	13
10	1,4	6
18	0,333333333	3
3	0,333333333	7
1	1	1
2	0,5	0
1	5	5
17	1,352941176	18
28	1,428571429	39
7	2,142857143	13

6	0,833333333	6
2	1,5	2
9	0,777777778	10
1	1	1
0	#iDIV/0!	1
1	3	2
1	1	1
23	1,130434783	34
11	0,818181818	9
19	1,052631579	14
31	0,677419355	26
13	0,923076923	12
26	0,769230769	19
28	1,142857143	24
61	0,918032787	46
56	0,857142857	32
63	1	54
3	2,333333333	4
27	0,962962963	29
8	0,75	9
18	0,611111111	11
6	1,666666667	8
6	1,166666667	6
14	1,214285714	20
51	0,745098039	51
173	0,739884393	108
310	1,048387097	299
346	1,046242775	361
85	0,823529412	61
62	0,85483871	68
46	0,826086957	41
87	0,735632184	75
81	0,839506173	77
54	0,888888889	28
16	0,8125	27
15	2,066666667	28
6	0,833333333	6
95	0,715789474	166
45	0,933333333	175
28	0,571428571	24
156	1	164
77	0,454545455	31
21	0,857142857	16
20	1,05	17
12	1,333333333	17
3	2,666666667	6
1	3	0
0	#iDIV/0!	1
0	#iDIV/0!	0
0	#iDIV/0!	0
1	3	3
1	0	1

0	#iDIV/0!	1
0	#iDIV/0!	3
2	2	6
2	1,5	2
3	1,333333333	3
2	1	1
2	0,5	2
0	#iDIV/0!	1
5	0	6
2	0,5	1
59	1,203389831	90
20	0,8	17
0	#iDIV/0!	1
0	#iDIV/0!	1
1	1	2
1	2	1
2	1	2
1	1	0
0	#iDIV/0!	0
9	1,111111111	7
13	0,692307692	10
6	0,833333333	3
21	0,80952381	16
18	0,666666667	18
4	1	5
12	1	9
13	0,307692308	8
64	0,984375	48
7	0,714285714	5
20	1,35	12
50	1,28	65
259	1,189189189	521
80	1,0875	134
3	1,333333333	1
8	1,375	14
9	0,666666667	10
19	0,789473684	23
9	0,555555556	5
2	2,5	4
7	1,142857143	6
5	1,2	8
18	0,944444444	15
6	0,833333333	5
15	1,133333333	13
2	1,5	2
5	1,6	6
13	1,692307692	14
8	1,625	12
45	0,644444444	39
19	1,263157895	22
25	0,88	23
34	0,882352941	27

25	1,32	24
38	0,921052632	43
4	1,25	4
3	1	3
3	0,666666667	5
7	1,142857143	11
20	0,7	22
60	1,233333333	122
265	1,147169811	496
429	1,172494172	584
10	1,1	14
0	#jDIV/0!	1
33	1,96969697	57
27	1	22
84	1,404761905	102
6	1	6
18	1	17
36	2,027777778	65
35	1,142857143	44
114	1,280701754	210
5	1	0
14	1,285714286	14
34	0,941176471	44
25	0,52	19
68	1,058823529	64
8	0,75	4
21	1,238095238	15
86	0,848837209	78
78	0,679487179	86
38	0,815789474	21
10	0,7	8
41	1,097560976	53
46	0,695652174	35
10	0,8	17
8	1	6
75	0,96	69
38	1,131578947	42
60	0,783333333	77
85	0,764705882	119
67	0,865671642	95
24	1,083333333	26
30	0,933333333	31
68	0,941176471	60
251	0,996015936	282
530	0,952830189	569
893	0,9193729	908
157	0,891719745	149
160	1,00625	178
118	0,762711864	107
203	0,743842365	175
49	0,693877551	35
16	0,625	16

27	1,444444444	29
29	1,137931034	32
5	0,6	5
72	1,083333333	116
12	0,75	11
13	1,153846154	15
13	0,769230769	14
20	0,95	15
25	1,32	27
21	0,619047619	13
24	0,458333333	14
16	0,5	8
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28	0,785714286	38
45	0,888888889	57
2	2,5	3
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13	0,846153846	10
42	0,738095238	37
30	0,8	24
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62	0,661290323	27
26	1,153846154	51
36	1,416666667	60
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79	1,050632911	60
73	0,863013699	67
34	0,941176471	30
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29	1,275862069	52
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14	2,714285714	79
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62	0,903225806	62
31	0,612903226	18
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66	1,121212121	56
32	0,8125	28
78	1,076923077	82
176	0,835227273	159
153	0,745098039	143
119	0,781512605	133
64	0,890625	62
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42	0,952380952	40
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16	0,25	21
87	0,632183908	56
34	0,882352941	36
66	1,227272727	81
27	0,703703704	19
62	1,129032258	51
255	0,847058824	187
305	0,626229508	217
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670	0,768656716	511
52	0,923076923	84
40	0,875	56
54	0,87037037	66
58	0,706896552	53
47	0,85106383	55
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193	0,678756477	142
158	0,765822785	140
182	0,884615385	152
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153	0,823529412	109
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77	0,844155844	84
79	0,518987342	53
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66	0,878787879	67
353	0,818696884	328
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180	0,761111111	122

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134	0,686567164	105
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38	0,789473684	23
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106	0,660377358	65
92	0,75	58
156	0,692307692	105
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101	0,900990099	109
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128	0,7734375	115
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34	1,235294118	28
49	0,979591837	34
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200	1,1	205
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186	0,951612903	156
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19	0,842105263	32
64	0,703125	29
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266	0,748120301	184
39	1,128205128	36
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27	0,962962963	28
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22	1,227272727	25
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375	0,874666667	362
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58	1,896551724	87
71	1,028169014	55
224	0,866071429	184
248	0,713709677	212
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16	1,1875	21
55	1,090909091	41
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104	1,105769231	81
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24	0,916666667	19
29	1,068965517	29
162	0,728395062	111
83	0,891566265	47
9	1,222222222	8
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74	0,675675676	61
96	1,052083333	139
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96	0,71875	54
615	0,72195122	439
2456	0,754071661	2123
175	0,805714286	141
488	0,852459016	333
84	1,119047619	69
236	0,690677966	165
409	0,872860636	367
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37	1,135135135	36
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159	0,937106918	131
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94	1,106382979	90
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27	1,074074074	35
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148	0,777027027	116
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65	0,815384615	39
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111	0,684684685	67
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53	1,679245283	69
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66	1,212121212	70
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49	1,081632653	59
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88	1,181818182	89
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211	0,464454976	87
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312	1,08974359	344
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77	1,025974026	88
14	1,714285714	17
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23	0,739130435	16

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44	1,090909091	41
86	1,069767442	71
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19	0,842105263	13
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57	1,245614035	85
160	1,1375	204
617	1,145867099	669
52	0,653846154	39
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97	0,886597938	83
93	0,946236559	102
220	0,868181818	232
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37	0,648648649	24
86	0,61627907	34
57	0,824561404	37
179	1,335195531	256
155	1,206451613	240
28	1,071428571	24
81	1,148148148	111
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141	0,815602837	122
63	0,888888889	45
56	0,857142857	33
46	1,413043478	60
286	0,916083916	304
116	0,862068966	93
53	0,905660377	38
43	0,790697674	36
99	0,818181818	95
144	0,902777778	142
81	1,135802469	111
136	0,992647059	157

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67	1,208955224	57
53	0,867924528	44
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87	0,908045977	131
146	0,821917808	126
82	0,93902439	82
49	1,020408163	54
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73	1,123287671	72
83	1,048192771	100
110	1,190909091	121
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38	1,236842105	46
27	0,592592593	19
14	1,214285714	10
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13	1,384615385	14
19	1,315789474	15
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28	0,892857143	24
39	0,794871795	27
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39	1,076923077	49
25	0,96	26
22	1,227272727	15
323	1,368421053	347
808	0,861386139	772
140	1,035714286	117
75	1,253333333	112
193	1,222797927	253
88	0,863636364	109
78	0,884615385	89
22	1,590909091	42
77	1,207792208	103
47	1,021276596	54
227	0,533039648	173
129	1,108527132	135
114	0,964912281	103
101	0,871287129	96
41	1,43902439	53
28	1,285714286	32
56	0,892857143	60
58	0,551724138	40
53	0,905660377	67
12	1,666666667	16
19	0,736842105	26
228	1,109649123	403
68	0,941176471	62
20	1,5	19
166	1,060240964	153
271	0,889298893	259
54	1,12962963	46

421	1,047505938	539
256	1,1640625	363
14	0,928571429	14
29	0,965517241	31
30	0,933333333	14
59	1,13559322	57
6	0,833333333	6
88	0,454545455	91
3	1	2
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13	2,307692308	35
7	1,714285714	14
15	1	14
17	0,764705882	13
86	1,127906977	58
3	1,333333333	3
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29	0,827586207	26
100	0,72	112
37	0,72972973	34
38	0,763157895	28
15	1,266666667	22
13	0,846153846	20
8	1,25	7
11	1,181818182	17
4	0,25	3
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29	1,137931034	36
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2	1,5	3
8	1,25	7
4	0,5	2
46	0,97826087	42
11	0,727272727	8
5	1	6
49	0,775510204	48
20	0,8	19
19	0,842105263	22
49	0,836734694	62
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46	0,782608696	26
16	1,0625	13
14	1,142857143	20
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2	1,5	2
8	1,5	8

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22	1,090909091	26
33	1,151515152	44
2	2	2
8	1,5	9
34	0,588235294	26
47	1,042553191	42
70	0,957142857	56
107	1,224299065	142
118	1,161016949	234
56	1,053571429	55
104	0,875	94
62	1	53
46	1,282608696	52
45	1,088888889	38
31	1,064516129	32
57	1,052631579	59
34	1	25
119	1,285714286	164
334	0,934131737	386
408	0,737745098	416
3	1	0
64	1,34375	81
45	1,288888889	41
154	1,162337662	126
105	0,895238095	76
68	1,323529412	117
80	0,975	91
68	0,852941176	64
67	0,71641791	84
108	0,824074074	116
198	0,868686869	175
42	0,666666667	42
26	0,769230769	16
12	0,916666667	8
12	0,75	15
28	0,714285714	21
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18	1	23
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142	0,936619718	135
127	1,519685039	197
139	1,575539568	197
37	0,837837838	27
51	1,039215686	47
110	1,336363636	167
46	1,02173913	50
60	0,966666667	83
45	4,377777778	198
35	1,485714286	44
15	1,133333333	22
64	1,171875	37

28	1,035714286	12
37	0,972972973	28
84	0,797619048	55
44	0,909090909	45
16	0,9375	19
106	1,075471698	91
107	0,672897196	105
87	0,804597701	75
73	1,02739726	78
55	1,327272727	72
65	0,876923077	60
49	1,081632653	55
49	1,244897959	65
81	0,617283951	57
58	0,982758621	64
32	1	40
65	0,907692308	57
96	1,041666667	110
133	1,135338346	140
316	0,629746835	319
84	0,678571429	73
49	1,102040816	53
17	2,647058824	49
11	1,272727273	15
23	0,956521739	22
24	0,875	21
112	0,776785714	91
45	0,755555556	30
25	0,88	11
13	0,615384615	9
32	0,71875	21
50	0,76	41
82	0,804878049	42
205	0,975609756	186
1144	0,980769231	1496
160	0,9625	148
25	0,72	22
116	0,982758621	108
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22	0,954545455	21
7	1,285714286	5
265	0,41509434	201
69	0,884057971	56
143	0,762237762	67
82	1,243902439	69
126	0,865079365	115
184	0,782608696	101
6	0,833333333	4
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119	0,932773109	124
19	1,210526316	16
23	1	22

196	0,826530612	159
86	0,860465116	51
69	0,84057971	54
60	0,866666667	45
87	0,988505747	80
129	0,899224806	118
48	0,979166667	52
40	1,075	41
74	1,054054054	57
161	1,198757764	228
60	0,95	53
34	1,264705882	35
631	0,659270998	367
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68	1,102941176	84
99	0,97979798	101
49	1,265306122	102
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51	1,098039216	55
37	0,810810811	16
208	0,841346154	162
129	0,751937984	85
150	0,893333333	111
12	4,5	35
17	2	31
19	1,315789474	18
26	0,923076923	22
17	1	17
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246	1,75203252	410
125	1,192	164
174	1,603448276	276
312	1,583333333	544
126	1,873015873	279
179	1,324022346	297
61	0,868852459	75
33	0,636363636	33
7	1,571428571	9
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29	1,275862069	37
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17	1,352941176	20
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98	0,979591837	91
47	1,106382979	43
17	8,764705882	132
32	0,75	22
41	1,219512195	2866
33	1,121212121	2002

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414	0,876811594	314
4	1,5	8
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903	0,88372093	828
75	1,28	135
107	1,018691589	122
412	0,985436893	358
22	0,727272727	19
4851	0,789115646	3469
261	0,885057471	283
281	0,818505338	251
149	0,926174497	169
10	1,3	16
36	1,166666667	37
426	0,971830986	452
121	0,983471074	133
179	1,324022346	403
435	1,177011494	495
5	1	6
36	0,972222222	38
9	1,555555556	12
8	1,125	10
10	1	12
24	0,958333333	20
2	1	3
739	0,98511502	1052
55	1,290909091	74
236	1,016949153	246
2	1	1
903	0,782945736	692
66	1,075757576	83
166	0,993975904	131
161	0,826086957	113
6	1	8
106	1,056603774	109
58	1,068965517	57

75	0,826666667	66
106	0,79245283	70
21	1,047619048	22
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5	1	6
179	0,966480447	155
41	1,073170732	51
103	0,766990291	78
125	0,88	104
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157	1,025477707	116
132	0,810606061	133
14	0,642857143	10
48	0,8125	41
95	0,715789474	70
150	0,846666667	148
67	0,76119403	62
292	0,842465753	208
59	1,084745763	59
89	1,303370787	123
172	0,924418605	129
127	1,070866142	145
134	0,910447761	103
83	0,78313253	72
117	0,760683761	111
196	0,790816327	139
16	1	14
42	0,571428571	28
14	1	12
23	0,869565217	12
14	0,571428571	13
16	1,25	18
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233	0,751072961	180
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29	1,068965517	32
457	0,838074398	394
228	1,00877193	231
265	0,864150943	208
208	1,100961538	252
21	1,428571429	37
1766	0,765571914	1080
739	0,824086604	448
1039	0,808469682	720
1648	0,805218447	1265
2552	0,818965517	1648
1469	0,679373724	768
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19	0,842105263	48
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40	0,975	61
218	0,908256881	293
137	1,430656934	219
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76	0,947368421	63
17	0,941176471	18
68	0,852941176	48
43	0,837209302	27
114	1,087719298	114
10	2	24
7	1	8
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200	1,11	276
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27	0,703703704	16
42	0,666666667	32
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8	1,375	8
10	1	11
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294	0,761904762	217
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72	0,833333333	62
65	0,938461538	56

54	0,62962963	34
101	0,910891089	78
58	1,086206897	60
46	1,043478261	47
139	1,071942446	159
86	0,906976744	84
52	0,903846154	46
256	0,68359375	125
48	0,666666667	30
50	0,76	48
34	1,382352941	46
130	1,146153846	87
82	0,890243902	51
32	1,28125	29
44	0,909090909	31
25	1,68	28
75	1,24	51
146	0,910958904	100
241	1,053941909	142
256	0,75390625	124
161	0,968944099	102
10	0,8	9
23	0,782608696	16
13	1,307692308	13
9	1,444444444	7
5	1,8	5
12	0,833333333	10
4	1,75	5
167	0,461077844	76
39	0,820512821	35
84	1,178571429	137
91	2,835164835	184
469	0,863539446	343
176	0,704545455	161
599	0,934891486	552
31	0,838709677	26
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757	1,104359313	810
241	0,995850622	197
63	0,841269841	68
75	1,066666667	80
89	0,943820225	90
108	0,759259259	97
8	1,25	11
6	1	13
11	0,636363636	9
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14	0,928571429	13
9	1,222222222	11
412	0,990291262	422
69	1,072463768	80
3145	0,814944356	3212
462	0,766233766	309
1437	0,85664579	1188
63	0,984126984	67
625	0,7488	463
35	1,057142857	36
16	1	17
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139	1,014388489	203
15	1,266666667	20
6	1,166666667	8
138	1,123188406	180
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7	1	5
9	1,111111111	6
125	1,08	140
9	1,222222222	6
71	0,661971831	50
31	1,258064516	33
52	1,192307692	61
1867	1,044456347	2235
864	1,042824074	1206
96	0,979166667	106
96	1,197916667	111
1147	0,801220575	723
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1232	0,823863636	853
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747	0,961178046	635
9	0,444444444	9
127	0,921259843	100
32	0,84375	25
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26	1,230769231	34
167	0,916167665	143
163	0,957055215	148
16	1,0625	17
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226	1,10619469	255
184	0,972826087	178
82	0,902439024	96
233	0,922746781	196
73	0,945205479	77
202	1,272277228	250
770	0,822077922	544
94	0,968085106	78
221	0,814479638	170
197	0,994923858	264
33	0,787878788	26
80	1,0875	100
262	1,003816794	187
411	0,829683698	303
252	0,813492063	232
104	0,990384615	102
9	0,666666667	10
93	0,892473118	56
95	0,810526316	65
89	0,898876404	86
27	1,185185185	30
500	0,886	490
29	1,24137931	69
34	1,411764706	44
222	0,743243243	158
147	0,863945578	114
156	0,923076923	130
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111	0,765765766	87
208	1,764423077	270
477	2,165618449	869
320	0,853125	292
172	1,098837209	210
45	1,288888889	49
149	1,093959732	152
110	0,936363636	79
83	1,012048193	111
185	1,005405405	220
123	0,967479675	103
127	0,905511811	127
149	1,067114094	186
42	0,833333333	39
96	1,333333333	125
62	0,951612903	59
136	0,941176471	134
173	0,664739884	93
224	0,839285714	205
296	0,868243243	193
57	1,01754386	53
40	1,2	58

924	0,853896104	659
372	0,935483871	346
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55	0,854545455	35
62	0,903225806	41
244	0,782786885	172
206	0,72815534	162
100	1,24	113
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4	1,5	12
19	0,526315789	22
14	0,571428571	14
12	0,5	15
14	0,642857143	16
334	0,886227545	307
96	1,010416667	89
291	0,979381443	334
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68	0,823529412	62
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143	0,846153846	129
41	1,024390244	37
455	1,131868132	424
392	0,905612245	319
396	0,982323232	265
447	0,789709172	313
79	0,898734177	68
642	0,725856698	387
8	0,75	7
155	0,522580645	62
38	0,578947368	25
103	0,825242718	103
410	0,926829268	314
538	0,821561338	349
511	0,874755382	436
105	0,885714286	146
19	1,157894737	30
10	0,8	8
243	0,765432099	243
124	0,838709677	106
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23	1,47826087	42
12	1	19
8	2	23
19	0,894736842	19

297	0,861952862	247
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93	1,032258065	85
226	0,92920354	184
53	6,886792453	67
63	0,380952381	25
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18	0,777777778	14
103	0,922330097	179
124	1,072580645	126
193	0,725388601	142
38	0,947368421	29
100	0,92	62
33	0,878787879	29
70	0,628571429	47
81	0,407407407	40
118	0,618644068	73
130	0,715384615	75
119	0,554621849	56
115	0,643478261	69
61	0,704918033	39
52	0,846153846	32
77	0,701298701	35
55	0,727272727	26
88	0,704545455	41
267	1,06741573	227
190	0,947368421	144
21	0,714285714	11
11	0,545454545	5
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98	0,816326531	55
649	0,896764253	464
722	0,984764543	505
210	0,957142857	131
151	0,708609272	75
115	0,52173913	60
62	0,709677419	36
98	0,653061224	44
58	0,948275862	36
52	0,634615385	22
42	0,714285714	18
28	0,785714286	17
82	0,597560976	50
80	0,675	46
74	0,756756757	47
52	0,826923077	23
34	0,764705882	18
27	0,592592593	17

12	1,166666667	10
177	1,028248588	116
94	0,989361702	73
103	0,893203883	91
62	1,096774194	77
94	0,755319149	83
124	1	118
76	1,078947368	64
89	0,943820225	64
363	0,889807163	322
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47	0,872340426	46
291	0,749140893	191
928	0,546336207	466
31	1,096774194	82
35	1,228571429	106
81	3,456790123	222
217	1,046082949	203
449	0,902004454	358
193	0,932642487	148
231	1,112554113	286
153	0,843137255	132
223	0,847533632	220
103	1,087378641	121
157	0,770700637	116
215	0,995348837	168
210	0,928571429	161
104	1,086538462	105
104	0,923076923	78
386	0,924870466	331
49	1,12244898	67
341	0,771260997	270
2755	0,871506352	1988
16	1	17
299	1,043478261	284
795	0,919496855	781
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103	1,359223301	129
804	0,911691542	749
185	0,897297297	203
238	0,886554622	204
131	1,038167939	144
107	0,738317757	73
93	0,817204301	80
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66	1,03030303	106
282	0,907801418	201

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39	0,666666667	46
7	0,571428571	6
106	1,08490566	131
141	1,283687943	220
119	1,067226891	119
33	1,121212121	39
42	0,952380952	49
60	1,1	75
179	1,139664804	193
233	0,776824034	171
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29	0,75862069	26
33	1,333333333	38
1437	0,964509395	1308
27	1,111111111	36
17	1,117647059	19
330	0,933333333	298
392	0,895408163	428
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199	0,864321608	126
443	1,006772009	449
238	0,827731092	172
214	1,014018692	179
135	0,725925926	80
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130	1,153846154	128
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406	1,027093596	347
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151	1,01986755		174
493	0,693711968		345
491	0,808553971		363
339	0,820058997		323
7	1,142857143		7
224	0,870535714		183
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249	0,979919679		214
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16	1,3125		18
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66	0,924242424		64
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48	1,166666667		54
115	1,060869565		120
751	1,10252996		836
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44	1,022727273		45
286	0,961538462		284
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371	0,929919137		334
84	0,857142857		78
137	1,072992701		118

106	0,783018868	72
189	0,888888889	160
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39	1,333333333	43
56	1,464285714	52
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66	0,863636364	50
136	0,558823529	106
94	0,712765957	99
136	0,632352941	119
52	1,923076923	75
46	1,217391304	57
129	2,379844961	231
91	2,505494505	185
90	0,988888889	87
111	1,792792793	126
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121	0,917355372	94
70	0,771428571	57
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22	0,409090909	18
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318	0,603773585	157
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32	0,75	38
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677	0,858197932	580
2262	1,136162688	2231
183	1,010928962	172
39	0,461538462	24
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251	1,059760956	269
155	1,032258065	134
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250	0,88	197
196	0,964285714	171
205	0,912195122	255
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122	1,057377049	140
88	0,829545455	58
41	1,048780488	44
29	0,931034483	22
32	1,0625	30
20	1	22
48	1,354166667	58
126	0,920634921	91
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78	0,948717949	48
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13	1,692307692	28
17	0,941176471	33
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153	1,522875817	209
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163	0,846625767	230
146	1,123287671	226
180	0,994444444	172
314	0,98089172	284
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233	0,974248927	210
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157	0,993630573	126
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39	0,948717949	197
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157	0,929936306	123
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558	0,994623656	623
585	0,91965812	635
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238	1,021008403	229
140	0,942857143	120

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169	0,733727811	142
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26	0,807692308	31
37	0,918918919	33
44	1,227272727	58
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81	1,012345679	45
53	0,698113208	30
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211	0,867298578	150
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83	1,048192771	74
96	0,927083333	85
55	0,945454545	43
79	1,151898734	61
207	0,942028986	171
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338	0,863905325	186
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183	1,071038251	156
149	1,033557047	116
144	1,055555556	114
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131	1,015267176	131
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73	1,164383562	85
33	1,121212121	47
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229	0,903930131	181
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486	0,923868313	395
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58	0,637931034	47
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94	0,861702128	86
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159	0,880503145	157
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58	0,931034483	53
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23	1,217391304	26
374	0,860962567	249
54	1,185185185	67
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234	0,931623932	223
67	0,985074627	58
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224	1,705357143	509
66	1,696969697	131
364	0,771978022	228
186	0,919354839	151
67	0,895522388	56
90	0,977777778	86
314	1,111464968	314

189	0,989417989	172
132	0,939393939	107
245	0,975510204	243
204	0,901960784	151
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38	1,210526316	39
46	0,869565217	36
107	0,971962617	129
259	0,980694981	226
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34	1,411764706	41
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150	0,953333333	122
73	1,04109589	67
69	1,391304348	80
57	1,245614035	53
106	0,952830189	95
79	1,215189873	84
159	1,452830189	224
92	1,086956522	104
87	0,804597701	68
552	0,746376812	414
307	0,824104235	224
272	0,930147059	222
459	0,845315904	391
538	0,855018587	399
38	0,815789474	25
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482	0,682572614	305
4663	0,797769676	3318
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549	0,887067395	477
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78	0,897435897	61
271	0,793357934	199
76	1,144736842	70
132	0,901515152	122
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91	0,813186813	71
224	1,03125	202
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31686	4,881493404	137571
161	0,906832298	167
179	0,804469274	160
15	0,933333333	14
122	1,114754098	141
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30	0,9	35
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37	0,72972973	84
100	0,99	71
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3860	0,731865285	2717
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6730	0,780237741	5126
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2285	1,15404814	1812
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1271	0,814319434	1091
661	0,76096823	455
90	1,777777778	183
26	0,653846154	16
286	3,328671329	944
89	0,988764045	86
62	0,709677419	88
472	0,927966102	324
4427	0,873729388	3808
2422	0,838150289	2226
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3354	0,73673226	2159
4185	0,801194743	2869
3944	0,696754564	2679
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2899	0,773715074	1685
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122	0,868852459	91
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798	0,889724311	622
613	0,978792822	473
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366	0,852459016	268
520	0,990384615	449
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782	0,923273657	606
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79	0,860759494	63
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84	1,107142857	78
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555	0,81981982	354
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1
1
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2
1
#jDIV/0!
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#jDIV/0!
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0,862831858
1,464788732