

1

243233_Mcapsulatus@YP_112782	-----	-----	-----	-----	-----
458817_Shalifaxensis@YP_001673798	-----	-----	-----	-----	-----
398579_Spealeana@YP_001501349	-----	-----	-----	-----	-----
557598_Lhongkongensis@YP_002796852	-----	-----	-----	-----	-----
521006_Ngonorrhoeae@YP_002001906	-----	-----	-----	-----	-----
489653_Nlactamica@YP_004048810	-----	-----	-----	-----	-----
935589_Nmeningitidis@YP_005903962	-----	-----	-----	-----	-----
395495_Lcholodnii@YP_001790394	-----	-----	-----	-----	-----
999541_Bgladioli@YP_004361365	-----	-----	-----	-----	-----
983917_Rgelatinosus@YP_005439140	-----	-----	-----	-----	-----
1416914_Ppomenusa@YP_008837319	-----	-----	-----	-----	-----
1380774_Psp@YP_008881415	-----	-----	-----	-----	-----
1249661_Bthailandensis@YP_007917844	-----	-----	-----	-----	-----
320388_Bmallei@YP_993528	-----	-----	-----	-----	-----
536230_Bpseudomallei@YP_002897469	-----	-----	-----	-----	-----
395019_Bmultivorans@YP_001579332	-----	-----	-----	-----	-----
626418_Bglumae@YP_002912250	-----	-----	-----	-----	-----
365044_Pnaphthalenivor@YP_981803	-----	-----	-----	-----	-----
266265_Bxenovorans@YP_553871	-----	-----	-----	-----	-----
269482_Bvietnamiensis@YP_001115172	-----	-----	-----	-----	-----
583345_Mmobilis@YP_003049105	-----	-----	-----	-----	-----
666681_Mversatilis@YP_003674921	-----	-----	-----	-----	-----
391038_Bphymatum@YP_001857685	-----	-----	-----	-----	-----
398577_Bambifaria@YP_001808732	-----	-----	-----	-----	-----
269482_Bvietnamiensis@YP_001120041	-----	-----	-----	-----	-----
406425_Bcenocepacia@YP_001765425	-----	-----	-----	-----	-----
1009846_Bcepacia@YP_006615433	-----	-----	-----	-----	-----
482957_Blata@YP_369669	-----	-----	-----	-----	-----
748280_Psp@YP_004848592	-----	-----	-----	-----	-----
1229205_Bphenoliruptrix@YP_006834626	-----	-----	-----	-----	M
1163617_Sdenitrificans@YP_008546117	-----	-----	-----	-----	-----
266265_Bxenovorans@YP_559453	-----	-----	-----	-----	-----
398527_Bphytofirmans@YP_001896197	-----	-----	-----	-----	-----
375286_Jsp@YP_001352943	-----	-----	-----	-----	-----
204773_Harsenicoxydans@YP_001100494	-----	-----	-----	-----	-----
580332_Slithotrophicus@YP_003524869	-----	-----	-----	-----	-----
159087_Daromatica@YP_285167	-----	-----	-----	-----	-----
882378_Brhizoxinica@YP_004029636	-----	-----	-----	-----	-----
85643_Tsp@YP_002355840	-----	-----	-----	-----	-----
757424_Hseropedicae@YP_003776230	-----	-----	-----	-----	-----
522306_Caccumulibacter@YP_003167247	-----	-----	-----	-----	-----
76114_Aaromaticum@YP_160687	-----	-----	-----	-----	-----
381666_Reutropha@YP_725668	-----	-----	-----	-----	-----
977880_Ctaiwanensis@YP_002005171	-----	-----	-----	-----	-----
1042878_Cnecator@YP_004684939	-----	-----	-----	-----	-----
266264_Cmetallidurans@YP_583181	-----	-----	-----	-----	-----
395494_Gcapsiferriiform@YP_003846450	-----	-----	-----	-----	-----
859655_Rsolanacearum@YP_005996961	-----	-----	-----	-----	-----
402626_Rpickettii@YP_001898467	-----	-----	-----	-----	-----
543913_bproteobacteriu@YP_007502653	-----	-----	-----	-----	-----
62928_Asp@YP_933519	-----	-----	-----	-----	-----
640081_Dsuillum@YP_005028573	-----	-----	-----	-----	-----
452638_Pnecessarius@YP_001797351	-----	-----	-----	-----	-----
292415_Tdenitrificans@YP_314923	-----	-----	-----	-----	-----
265072_Mflagellatus@YP_544916	-----	-----	-----	-----	-----
582744_Mglucosetrophus@YP_003051619	-----	-----	-----	-----	-----
887061_Msp@YP_004040241	-----	-----	-----	-----	-----
891398_CTremblaya@YP_004707015	-----	-----	-----	-----	-----
426114_Tarsenitoxydans@YP_003623866	-----	-----	-----	MDV\$FA	ASGRFFEDK
75379_Tintermedia@YP_003642782	-----	-----	-----	-----	-----
937774_Tequigenitalis@YP_004130301	-----	-----	-----	-----	-----
1008459_Tasinigenitalis@YP_004874474	-----	-----	-----	-----	-----
634503_Eictaluri@YP_002934567	-----	-----	-----	-----	-----
718251_Etardea@YP_005700147	-----	-----	-----	-----	-----
259536_Parcticus@YP_264760	-----	-----	-----	-----	-----
335284_Pcryohalolentis@YP_580918	-----	-----	-----	-----	-----
571800_Psp@YP_008163576	-----	-----	-----	-----	-----
420662_Mpetroleiphilum@YP_001021452	-----	-----	-----	-----	-----
243365_Cviolaceum@NP_900763	-----	-----	-----	-----	-----
1208919_CKinetoplastiba@YP_007459239	-----	-----	-----	-----	-----
983545_Gsp@YP_004435367	-----	-----	-----	-----	-----
342610_Patlantica@YP_660819	-----	-----	-----	-----	-----
743299_Aferrivorans@YP_004783591	-----	-----	-----	-----	-----
243159_Aferrooxidans@YP_002425162	-----	-----	-----	-----	-----
1005048_Cfungivorans@YP_004753777	-----	-----	-----	-----	-----
669502_CProffftella@YP_008343646	-----	-----	-----	-----	-----
757424_Hseropedicae@YP_003776535	-----	-----	-----	-----	-----
395495_Lcholodnii@YP_001790080	-----	-----	-----	-----	-----
257310_Bbronchiseptica@NP_888820	-----	-----	-----	-----	-----
990288_Acaldus@YP_004748177	-----	-----	-----	-----	-----
990288_Acaldus@YP_004748110	-----	-----	-----	-----	-----
983917_Rgelatinosus@YP_005436383	-----	-----	-----	-----	-----
360910_Bavium@YP_786035	-----	-----	-----	-----	-----
1036672_Akashmirensis@YP_006379415	-----	-----	-----	-----	-----

340100_Bpetrii@YP_001631386	----	----	----	----	----
523791_Kkoreensis@YP_003146685	----	----	----	----	----
156889_Mmarinus@YP_866958	----	----	----	----	----
404589_Asp@YP_001377835	----	----	----	----	----
290397_Adehalogenans@YP_463806	----	----	----	----	----
447217_Asp@YP_002132996	----	----	----	----	----
455488_Adehalogenans@YP_002491042	----	----	----	----	----
378806_Saurantiaca@YP_003955403	----	----	----	----	----
246197_Mxanthus@YP_633158	----	----	----	----	----
483219_Mfulvus@YP_004669542	----	----	----	----	----
1144275_Ccoralloides@YP_005368444	----	----	----	----	----
1278073_Mstipitatus@YP_007362455	----	----	----	----	----
448385_Scellulosum@YP_001617979	----	----	----	----	----
399739_Pmendocina@YP_001188990	----	----	----	----	----
1294143_Pdenitrificans@YP_007659193	----	----	----	----	----
208964_Paeruginosa@NP_252502	----	----	----	----	----
322710_Avinelandii@YP_002801150	----	----	----	----	----
644801_Pstutzeri@YP_007239445	----	----	----	----	----
1207075_Psp@YP_007027941	----	----	----	----	----
1114970_Pfluorescens@YP_005206437	----	----	----	----	----
220664_Pprotogens@YP_262044	----	----	----	----	----
351746_Pputida@YP_001266219	----	----	----	----	----
1435058_Pmonteilii@YP_008958359	----	----	----	----	----
743720_Pfulva@YP_004475358	----	----	----	----	----
264730_Psyringae@YP_273568	----	----	----	----	----
384676_Pentomophila@YP_606728	----	----	----	----	----
1430440_Mgryphiswaldens@YP_008937260	----	----	----	----	----
749219_Mcatarrhalis@YP_003626770	----	----	----	----	----
62977_Asp@YP_046090	----	----	----	----	----
436717_Aoleivorans@YP_003732380	----	----	----	----	----
400667_Abaumannii@YP_001084660	----	----	----	----	----
871585_Acalcoacticus@YP_004995269	----	----	----	----	----
511062_Osp@YP_005091814	----	----	----	----	----
318167_Sfrigidimarina@YP_751106	----	----	----	----	----
326297_Samazonensis@YP_927171	----	----	----	----	----
318161_Sdenitrificans@YP_562467	----	----	----	----	----
167879_Cpsychrerythrae@YP_267876	----	----	----	----	----
637905_Sviolacea@YP_003556341	----	----	----	----	----
225849_Spiezotolerans@YP_002311055	----	----	----	----	----
323850_Sloihica@YP_001094441	----	----	----	----	----
425104_Ssediminis@YP_001474605	----	----	----	----	----
392500_Swoodyi@YP_001760156	----	----	----	----	----
60481_Ssp@YP_737869	----	----	----	----	----
211586_Soneidensis@NP_717861	----	----	----	----	----
693973_Sbaltica@YP_005273706	----	----	----	----	----
399804_Sputrefaciens@YP_006009782	----	----	----	----	----
298386_Sprofundum@YP_128966	----	----	----	----	----
28173_Vnigripulchritu@YP_008621944	----	----	----	----	----
1219076_Valginolyticus@YP_008537102	----	----	----	----	----
150340_Vsp@YP_003286982	----	----	----	----	----
345073_Vcholerae@YP_001216234	----	----	----	----	----
223926_Vparahaemolytic@NP_796976	----	----	----	----	----
882102_Vanguillarum@YP_004566935	----	----	----	----	----
575788_Vsplendidus@YP_002416251	----	----	----	----	----
1129794_Vpsychrophila@YP_007545568	----	----	----	----	----
196600_Vvulnificus@NP_933549	----	----	----	----	----
903510_Vfurnissii@YP_004993913	----	----	----	----	----
338187_Vcampbellii@YP_001444276	----	----	----	----	----
338187_Vcampbellii@YP_008526292	----	----	----	----	----
314282_Psp@YP_007639631	----	----	----	----	----
357804_Pingrahamii@YP_942749	----	----	----	----	----
326442_Phaloplanktis@YP_341160	----	----	----	----	----
234831_Psp@YP_004067531	----	----	----	----	----
595494_Tauensis@YP_002893203	----	----	----	----	----
396588_Tsulfidiphilus@YP_002513559	----	----	----	----	----
396588_Tsulfidiphilus@YP_002514125	----	----	----	----	----
998088_Averonii@YP_004393031	----	----	----	----	----
380703_Ahydrophila@YP_856284	----	----	----	----	----
382245_Asalmonicida@YP_001142383	----	----	----	----	----
342108_Mmagneticum@YP_422390	----	----	----	----	----
1245471_Presinovorans@YP_008101472	----	----	----	----	----
365044_Pnaphthalenivor@YP_982518	----	----	----	----	----
296591_Psp@YP_549004	----	----	----	----	----
232721_Asp@YP_986388	----	----	----	----	----
535289_Aebreus@YP_002553097	----	----	----	----	----
365046_Rtataouinensis@YP_004618947	----	----	----	----	----
946483_CSymbiobacter@YP_008681130	----	----	----	----	----
312309_Vfischeri@YP_204001	----	----	----	----	----
595537_Vparadoxus@YP_004156043	----	----	----	----	----
316275_Asalmonicida@YP_002262235	----	----	----	----	----
391735_Veiseniae@YP_997138	----	----	----	----	----
397945_Acitrullii@YP_970793	----	----	----	----	----
643561_Aavenae@YP_004235248	----	----	----	----	----
398578_Dacidovorans@YP_001565014	----	----	----	----	----
742013_Dsp@YP_004488168	----	----	----	----	----
338969_Aferrireducens@YP_523433	----	----	----	----	----
596154_Adenitrificans@YP_004388278	----	----	----	----	----
688245_Ctestosteroni@YP_003278774	----	----	----	----	----

1266738_Pmirabilis@YP_008398502	----	----	----	----	----
1124991_Mmorganii@YP_007505117	----	----	----	----	----
406817_Xnematophila@YP_003713469	----	----	----	----	----
291112_Pasymbiotica@YP_003040200	----	----	----	----	----
243265_Pluminescens@NP_930506	----	----	----	----	----
406818_Xbovieni@YP_003468915	----	----	----	----	----
273123_Ypseudotubercul@YP_071365	----	----	----	----	----
393305_Yenterocolitica@YP_001005390	----	----	----	----	----
1346614_Sliquefaciens@YP_008231656	----	----	----	----	----
1348660_Splymuthica@YP_008160622	----	----	----	----	----
399741_Sproteamaculans@YP_001479850	----	----	----	----	----
1249634_Smarcens@YP_007345780	----	----	----	----	----
187410_Ypestis@NP_668657	----	----	----	----	----
1157951_Pstuartii@YP_006215182	----	----	----	----	----
344609_Sboydii@YP_001881320	----	----	----	----	----
104623_Ssp@YP_008524031	----	----	----	----	----
561229_Dzeae@YP_003003456	----	----	----	----	----
590409_Ddadantii@YP_003334610	----	----	----	----	----
561230_Pcarotovorum@YP_003018589	----	----	----	----	----
561231_Pwasabiae@YP_003258666	----	----	----	----	----
1166016_Psp@YP_006282128	----	----	----	----	----
218491_Patrosepticum@YP_051325	----	----	----	----	----
99287_Senterica@NP_461477	----	----	----	----	----
218493_Sbongori@YP_004731144	----	----	----	----	----
290339_Csakazakii@YP_001436836	----	----	----	----	----
693216_Cturicensis@YP_003211492	----	----	----	----	----
399742_Esp@YP_001177741	----	----	----	----	----
640513_Easburiae@YP_004829762	----	----	----	----	----
693444_Ebacterium@YP_007339349	----	----	----	----	----
290338_Ckoseri@YP_001451852	----	----	----	----	----
484021_Kpneumoniae@YP_002920722	----	----	----	----	----
637910_Crodentium@YP_003366009	----	----	----	----	----
640131_Kvariicola@YP_003438138	----	----	----	----	----
1191061_Koxytoca@YP_006500071	----	----	----	----	----
1286170_Rornithinolytic@YP_007872306	----	----	----	----	----
511145_Ecoli@NP_417024	----	----	----	----	----
585054_Efergusonii@YP_002381825	----	----	----	----	----
198214_Sflexneri@NP_708368	----	----	----	----	----
216599_Ssonnei@YP_005457544	----	----	----	----	----
300267_Sdysenteriae@YP_404261	----	----	----	----	----
716541_Ecloacae@YP_003614361	----	----	----	----	----
701347_Elignolyticus@YP_003940771	----	----	----	----	----
630626_Sblattae@YP_006318650	----	----	----	----	----
1028307_Eaerogenes@YP_004590373	----	----	----	----	----
557723_Hparasuis@YP_002474707	----	----	----	----	----
1005058_Ganatis@YP_004420698	----	----	----	----	----
1075089_Pmultocida@YP_005176279	----	----	----	----	----
205914_Hsomnus@YP_718490	----	----	----	----	----
1171377_Btrehalosi@YP_007548422	----	----	----	----	----
233412_Hducreyi@NP_873560	----	----	----	----	----
416269_Apleuropneumoni@YP_001053631	----	----	----	----	----
696748_Asuis@YP_006816777	----	----	----	----	----
1366053_Mhaemolytica@YP_008338465	----	----	----	----	----
1334187_Hinfluenzae@YP_008544790	----	----	----	M	AFARIEKRV
634176_Aaphrophilus@YP_003007650	----	----	----	----	----
694569_Aactinomycetemc@YP_006286355	----	----	----	----	----
862965_Hparainfluenzae@YP_004822800	----	----	----	----	----
221988_Msucciniciprodu@YP_088916	----	----	----	----	----
339671_Asuccinogenes@YP_001344170	----	----	----	----	----
550540_Fbalearica@YP_003914035	----	----	----	----	----
396595_Tsp@YP_003460082	----	----	----	----	----
413404_CRuthia@YP_903798	----	----	----	----	----
412965_CVesicomysociu@YP_001219373	----	----	----	----	----
1208921_CKinetoplastiba@YP_007448562	----	----	----	----	----
561501_Baphidicola@YP_002468877	----	----	----	----	----
357244_Otsutsugamushi@YP_001248706	----	----	----	MN	NDAKIVTGR
1003201_Rtyphi@YP_005427548	----	----	----	----	----
1105111_CRickettsia@YP_005365544	----	----	----	----	----
272944_Rconorii@NP_360366	----	----	----	----	----
452659_Rrickettsii@YP_001650107	----	----	----	----	----
347255_Rafricae@YP_002845312	----	----	----	----	----
562019_Rpeacockii@YP_002916645	----	----	----	----	----
1105113_Rrhipicephali@YP_005390607	----	----	----	----	----
416276_Rmassiliae@YP_001499486	----	----	----	----	M
1105108_Rparkeri@YP_005392983	----	----	----	----	----
1105114_Rmontanensis@YP_005391246	----	----	----	----	----
1032845_Rheilongjiangen@YP_004764467	----	----	----	----	----
652620_Rjaponica@YP_004884928	----	----	----	----	----
481009_Rphilipii@YP_005300823	----	----	----	----	----
1105109_Rslovaca@YP_005426472	----	----	----	----	----
1105107_Rcanadensis@YP_005299497	----	----	----	----	----
336407_Rbellii@YP_538116	----	----	----	----	----
315456_Rfelis@YP_246860	----	----	----	----	----
293614_Rakari@YP_001493572	----	----	----	----	----
1105110_Raustralis@YP_005414962	----	----	----	----	----
434131_Nristicii@YP_003081518	----	----	----	----	----
222891_Nsennetsu@YP_506192	----	----	----	----	----
330214_CNitrospira@YP_003799619	----	----	----	----	----

984262_Sgrandis@YP_005322201	-----	-----	-----	-----
100901_Wendosymbiont@YP_006555868	-----	-----	-----	-----
66084_Wsp@YP_002727379	-----	-----	-----	-----
1423892_Emuris@YP_008929080	-----	-----	-----	-----
574556_Acentrale@YP_003328545	-----	-----	-----	-----
320483_Amarginale@YP_002563600	-----	-----	-----	-----
1184253_Aphagocytophilu@YP_008332775	-----	-----	-----	-----
205920_Echaffeensis@YP_507440	-----	-----	-----	-----
254945_Eruminantium@YP_180281	-----	-----	-----	-----
254945_Eruminantium@YP_197308	-----	-----	-----	-----
269484_Ecanis@YP_303050	-----	-----	-----	-----
517418_Cthalassium@YP_001997584	-----	-----	-----	-----
485917_Pheparinus@YP_003091837	-----	-----	-----	-----
762903_Psaltans@YP_004273747	-----	-----	-----	-----
929556_Scanadensis@YP_006255074	-----	-----	-----	-----
760192_Hhydrossis@YP_004446110	-----	-----	-----	-----
1162668_Lferrooxidans@YP_005469656	-----	-----	-----	-----
1048260_Lferriphilum@YP_006765680	-----	-----	-----	-----
240015_Acapsulatum@YP_002755573	-----	-----	-----	-----
204669_CKoribacter@YP_589562	-----	-----	-----	-----
1198114_Gtundricola@YP_004219465	-----	-----	-----	-----
926566_Troseus@YP_006423699	-----	-----	-----	-----
401053_Tsaanensis@YP_004180969	-----	-----	-----	-----
682795_Gmallensis@YP_005055878	-----	-----	-----	-----
696127_CMidichloria@YP_004679282	-----	-----	-----	-----
871271_CZindieria@YP_003878048	-----	-----	-----	-----
657324_Bfibrisolvens@YP_007819038	-----	-----	-----	-----
768670_Cnitroreducens@YP_004051749	-----	-----	-----	-----
717231_Fsinusarabici@YP_004603876	-----	-----	-----	-----
639282_Ddesulfuricans@YP_003496772	-----	-----	-----	-----
522772_Dacetiphilus@YP_003503972	-----	-----	-----	-----
693746_Ovalericigenes@YP_004880314	-----	-----	-----	-----
657321_Rbromii@YP_007781362	-----	-----	-----	-----
657322_Fprausnitzii@YP_007799942	-----	-----	-----	-----
213810_Rchampanellensi@YP_007828576	-----	-----	-----	-----
657319_[siraeum@YP_007775950	-----	-----	-----	-----
293826_Ametalliredigen@YP_001320267	-----	-----	-----	-----
350688_Aoremlandii@YP_001513205	-----	-----	-----	-----
546269_Falocis@YP_005054244	-----	-----	-----	-----
1511_[sticklandii@YP_003936518	-----	-----	-----	-----
699034_Pdifficile@YP_006198328	-----	-----	-----	-----
1128398_[acidurici@YP_006788189	-----	-----	-----	-----
572544_Ipolytropus@YP_003967871	-----	-----	-----	-----
469604_Fnucleatum@YP_008477745	-----	-----	-----	-----
580340_Tlienii@YP_004932350	-----	-----	-----	-----
891968_Amobile@YP_006444325	-----	-----	-----	-----
525903_Tacidaminovorans@YP_003316727	-----	-----	-----	-----
697281_Maustraliensis@YP_004463371	-----	-----	-----	-----
309799_Dthermophilum@YP_002251521	-----	-----	-----	-----
368407_Mmarisnigri@YP_001047821	-----	-----	-----	-----
903814_Elimosum@YP_003961665	-----	-----	-----	-----
931626_Awoodii@YP_005268656	-----	-----	-----	-----
410358_Mlabreanum@YP_001029708	-----	-----	-----	-----
679926_Mpetrolearius@YP_003895855	-----	-----	-----	-----
86416_Cpasteurianum@YP_007940944	-----	-----	-----	-----
929506_Cbotulinum@YP_004396224	-----	-----	-----	-----
386415_Cnovyi@YP_878355	-----	-----	-----	-----
748727_Cljungdahlii@YP_003779382	-----	-----	-----	-----
1341692_Cautoethanogenu@YP_008700753	-----	-----	-----	-----
747365_Tnarugense@YP_004437867	-----	-----	-----	-----
651822_Ffastidiosum@YP_007827223	-----	-----	-----	-----
572547_Acolombiense@YP_003553035	-----	-----	-----	-----
212717_Ctetani@NP_781697	-----	-----	-----	-----
431943_Ckluyveri@YP_001394709	-----	-----	-----	-----
573061_Ccellulovorans@YP_003843335	-----	-----	-----	-----
508767_Cbotulinum@YP_001920515	-----	-----	-----	-----
931276_Csaccharoperbut@YP_007454264	-----	-----	-----	-----
290402_Cbeijerinckii@YP_001308237	-----	-----	-----	-----
1345695_Csaccharobutyli@YP_008674363	-----	-----	-----	-----
269797_Mbarkeri@YP_305925	-----	-----	-----	-----
188937_Macetivorans@NP_617616	-----	-----	-----	-----
195103_Cperfringens@YP_696469	-----	-----	-----	-----
593750_Mformicica@YP_007249963	-----	-----	-----	-----
456442_Mboonei@YP_001405283	-----	-----	-----	-----
521011_Mpalustris@YP_002466865	-----	-----	-----	-----
323259_Mhungatei@YP_503638	-----	-----	-----	-----
547558_Mmahii@YP_003541558	-----	-----	-----	-----
644295_Mvestigatum@YP_003727500	-----	-----	-----	-----
351627_Csaccharolyticu@YP_001181022	-----	-----	-----	-----
521460_Cbescii@YP_002573580	-----	-----	-----	-----
632292_Chydrothermalis@YP_003992133	-----	-----	-----	-----
632348_Ckronotskyensis@YP_004023692	-----	-----	-----	-----
632335_Ckristjanssonii@YP_004026829	-----	-----	-----	-----
632516_Clactoaceticus@YP_004798736	-----	-----	-----	-----
608506_Cobsidiansis@YP_003840166	-----	-----	-----	-----
632518_Cowensensis@YP_004002802	-----	-----	-----	-----
1121335_[stercorarium@YP_007372524	-----	-----	-----	-----
1121335_[stercorarium@YP_007678972	-----	-----	-----	-----

MGCI GG

MA
MA
MA
MA

M

M

MGRLF KKSKGRGEII

755731_Csp@YP_005148252	----	----	----	----	----
394503_Ccellulolyticum@YP_002506259	----	----	----	----	----
720554_[clariflavum@YP_005046370	----	----	----	----	----
203119_Rthermocellum@YP_001037149	----	----	----	----	----
642492_Clentocellum@YP_004309737	----	----	----	----	----
1384484_Aequolifaciens@YP_008663926	----	----	----	----	M
515619_Erectale@YP_002936246	----	----	----	----	----
718255_Rintestinalis@YP_007780168	----	----	----	----	----
657315_Rintestinalis@YP_007830593	----	----	----	----	----
357809_Lphytofermentan@YP_001560003	----	----	----	----	----
610130_[saccharolyticu@YP_003823446	----	----	----	----	----
717608_[cf@YP_007849106	----	----	----	----	----
245012_bproducing@YP_007810477	----	----	----	----	----
657313_Rtorques@YP_007786815	----	----	----	----	----
245018_bproducing@YP_007788847	----	----	----	----	----
585394_Rhominis@YP_004837975	----	----	----	----	----
1054217_Tarchaeon@YP_007688600	----	----	----	----	MY
657323_Rsp@YP_007784833	----	----	----	----	----
657314_Robeum@YP_007804234	----	----	----	----	----
717962_Ccatus@YP_007770008	----	----	----	----	----
552811_Dlykanthroporep@YP_003758020	----	----	----	----	MNNG
246194_Chydrogenoforma@YP_361011	----	----	----	----	----
696281_Druminis@YP_004546667	----	----	----	----	----
868595_Dcarboxydivoran@YP_004497987	----	----	----	----	----
349161_Dreducens@YP_001112128	----	----	----	----	----
634498_Mruminantium@YP_003424309	----	----	----	----	----
406327_Mvannieli@YP_001322697	----	----	----	----	----
679901_Mzhilinae@YP_004616912	----	----	----	----	----
224719_Msp@YP_008075510	----	----	----	----	----
339860_Mstadtmanae@YP_448034	----	----	----	----	----
1295009_CMethanomassili@YP_008071572	----	----	----	----	----
420247_Msmithii@YP_001272836	----	----	----	----	----
1041930_Mconradii@YP_005380864	----	----	----	----	----
304371_Mpaludicola@YP_003355464	----	----	----	----	----
1379702_Msp@YP_008915990	----	----	----	----	----
351160_Marvoryzae@YP_686139	----	----	----	----	----
990316_Mconcilii@YP_004384883	----	----	----	----	MAKGRWMA
521011_Mpalustris@YP_002466708	----	----	----	----	MEDVP
1201294_Mbourgensis@YP_006544991	----	----	----	----	MTD
368407_Mmarisnigri@YP_001048051	----	----	----	----	MAD
635013_Tpotens@YP_003640662	----	----	----	----	----
457570_Nthermophilus@YP_001916489	----	----	----	----	----
574087_Aarabaticum@YP_003827335	----	----	----	----	----
748449_Hhalobius@YP_007315822	----	----	----	----	----
338963_Pcarbinolicus@YP_006717600	----	----	----	----	----
498761_Hmodesticaldum@YP_001680434	----	----	----	----	----
768704_Dmeridiei@YP_006620851	----	----	----	----	----
768706_Dorientis@YP_004969159	----	----	----	----	----
1147129_Dsp@YP_006909410	----	----	----	----	----
138119_Dhafniense@YP_518658	----	----	----	----	M
645991_Sglycolicus@YP_004266248	----	----	----	----	----
646529_Dacidiphilus@YP_006467680	----	----	----	----	----
272564_Dhafniense@YP_002460033	----	----	----	----	----
756499_Ddehalogenans@YP_006431093	----	----	----	----	----
871963_Ddichloroelimin@YP_007221311	----	----	----	----	----
767817_Dgibsoniae@YP_007945765	----	----	----	----	----
485916_Dacetoxidans@YP_003191710	----	----	----	----	----
555079_Toceani@YP_003825515	----	----	----	----	----
349307_Mthermophila@YP_843171	----	----	----	----	MIQ
760568_Dkuznetsovii@YP_004517387	----	----	----	----	----
373903_Horenii@YP_002508640	----	----	----	----	----
370438_Pthermopropioni@YP_001211605	----	----	----	----	----
264732_Mthermoacetica@YP_430496	----	----	----	----	----
96561_Doleovorans@YP_001528642	----	----	----	----	----
471821_uTermite@YP_001956213	----	----	----	----	----
429009_Adegensii@YP_003238425	----	----	----	----	----
706587_Dtiedjei@YP_006449617	----	----	----	----	----
589924_Fplacidus@YP_003435557	----	----	----	----	----
224325_Afulgidus@NP_069024	----	----	----	----	----
224325_Afulgidus@NP_069399	----	----	----	----	----
416591_Tlettingae@YP_001470347	----	----	----	----	----
688269_Tthermarum@YP_004660083	----	----	----	----	----
374847_CKorarchaeum@YP_001737319	----	----	----	----	MSTRV
583356_Iaggregans@YP_003860035	----	----	----	----	MSTRI
272947_Rprowazekii@NP_220862	----	----	----	----	----
1282356_Ppoae@YP_007398800	----	----	----	----	----
994484_Pbrassicacearum@YP_004352099	----	----	----	----	----
882944_Languillarum@YP_008488748	----	----	----	----	----
1167634_Axylosoxidans@YP_008032542	----	----	----	----	----
257311_Bparapertussis@NP_884287	----	----	----	----	----
1017264_Bpertussis@YP_005589900	----	----	----	----	----
284812_Spombe@NP_592967	MSVFRRSVQC	VGVLPSILAQ	RSSLARPAN	LQFLKTNSSK	FVPCVTANVS
559292_Scerevisiae@NP_014869	----	----	----	----	LTGSHITRAA
559292_Scerevisiae@NP_015190	----	----	MFA	RLANPAHFKP	MGVLRASSIT
9606_Hsapiens@NP_998760	----	----	M LPVITRFARP	ALMAIRPVNA	RLPARELSAP
9606_Hsapiens@NP_055116	----	----	M AAAGAFRLRR	AASALLLRSP	MVLIDM
3702_Athaliana@NP_193953	----	----	----	MMLKO	AAKKALGLTS
3702_Athaliana@NP_192317	----	----	----	MLRQ	TTKRAFLGLA
	----	----	----	----	SONPTFPFVV

3702_Athaliana@NP_186751

7227_Dmelanogaster@NP_649840

6239_Celegans@NP_502658

MM	LR	TS	RK	AYL	GL	QAS	PL	GLG
MS	LV	RNS	SRL	LR	SL	KRV	QSV	P
MSL	QI	SS	AAK	TLL	HK	FAL	PA	ATS

243233_Mcapsulatus@YP_112782	-MAYS	DKVID	HYENPRNVGS	F-DKDED	-GV	GTGVVGAPAC	GDVMKLOIKI
458817_Shalfaxensis@YP_001673798	-MAYS	EKVID	HYENPRNVGS	F-DKNDP	-SV	VTGMVGAPAC	GDVMKLOLRI
398579_Spealeana@YP_001501349	-MAYS	EKVID	HYENPRNVGS	F-DKNDP	-SV	VTGMVGAPAC	GDVMKLOLRI
557598_Lhongkongensis@YP_002796852	-MAYS	EKVID	HYEHPRNVGS	F-EKGDS	-SV	GTGMVGAPAC	GDVMKLOIKV
521006_Ngonorrhoeae@YP_002001906	-MAYS	DKVID	HYENPRNVGT	F-DKNDE	-SV	GTGMVGAPAC	GDVMRLOIKV
489653_Nlactamica@YP_004048810	-MAYS	DKVID	HYENPRNVGT	F-DKNDE	-SV	GTGMVGAPAC	GDVMRLOIKV
935589_Nmeningitidis@YP_005903962	-MAYS	DKVID	HYENPRNVGT	F-DKNDE	-SV	GTGMVGAPAC	GDVMRLOIKV
395495_Lcholodnii@YP_001790394	-MAYS	DKVID	HYENPRNVGG	F-TAEDD	-DV	GTGMVGAPAC	GDVMKLOIKV
999541_Bgladioli@YP_004361365	-MSYS	NKVL	HYENPRNVGS	F-SKDDD	-AV	GTGMVGAPAC	GDVMKLOIRV
983917_Rgelatinosus@YP_005439140	-MAYS	EKVID	HYENPRNVGG	F-AAGDD	-TV	ATGMVGAPAC	GDVMKLOIKV
1416914_Bpnomenus@YP_008837319	-MSYS	KEVLD	HYENPRNVGS	F-EKGDD	-AV	GTGMVGAPAC	GDVMKLOIRV
1380774_Psp@YP_008881415	-MSYS	KEVLD	HYENPRNVGS	F-EKGDD	-AV	GTGMVGAPAC	GDVMKLOIRV
1249661_Bthailandensis@YP_007917844	-MSYS	NKVL	HYENPRNVGS	F-AKDD	-AV	GTGMVGAPAC	GDVMKLOIRV
320388_Bmallei@YP_993528	-MSYS	NKVL	HYENPRNVGS	F-AKDD	-TV	GTGMVGAPAC	GDVMKLOIRV
536230_Bpseudomallei@YP_002897469	-MSYS	NKVL	HYENPRNVGS	F-AKDD	-TV	GTGMVGAPAC	GDVMKLOIRV
395019_Bmultivorans@YP_001579332	-MSYS	NKVL	HYENPRNVGS	F-AKDD	-AV	GTGMVGAPAC	GDVMKLOIRV
626418_Bglumae@YP_002912250	-MSYS	NKVL	HYENPRNVGS	F-SKGDD	-AV	GTGMVGAPAC	GDVMKLOIRV
365044_Pnaphthalenivor@YP_981803	-MAYS	DKVVD	HYENPRNVGA	F-EAGDD	-SV	GTGMVGAPAC	GDVMRLOIRV
266265_Bxenovorans@YP_553871	-MAYS	DKVID	HYENPRNVGA	F-DDAA	-NV	GTGMVGAPAC	GDVMRLOIRV
269482_Bvietnamiensis@YP_001115172	-MAYS	DKVLD	HYENPRNVGS	F-DAGAD	-DV	GTGMVGAPAC	GDVMRLOIRV
583345_Mmobilis@YP_003049105	-MAYS	DKVLD	HYENPRNVGS	L-DKNDP	-QV	GTGMVGAPAC	GDVMKLMIKV
666681_Mversatilis@YP_003674921	-MAYS	DKVLD	HYENPRNVGT	L-DKNDP	-NV	GTGMVGAPAC	GDVMKLMIKV
391038_Bphymatum@YP_001857685	-MAYS	DKVLD	HYENPRNVGS	F-AKDD	-TV	GTGMVGAPAC	GDVMKLOIRV
398577_Bambifaria@YP_001808732	-MSYS	NKVL	HYENPRNVGS	F-AKDD	-AV	GTGMVGAPAC	GDVMKLOIRV
269482_Bvietnamiensis@YP_001120041	-MSYS	NKVL	HYENPRNVGS	F-AKDD	-AV	GTGMVGAPAC	GDVMKLOIRV
406425_Bcenocapacia@YP_001765425	-MSYS	NKVL	HYENPRNVGS	F-AKDD	-TV	GTGMVGAPAC	GDVMKLOIRV
1009846_Bcepacia@YP_006615433	-MSYS	NKVL	HYENPRNVGS	F-AKDD	-AV	GTGMVGAPAC	GDVMKLOIRV
482957_Blata@YP_369669	-MSYS	NKVL	HYENPRNVGS	F-AKDD	-TV	GTGMVGAPAC	GDVMKLOIRV
748280_Psp@YP_004848592	-MAYS	ECVLD	HYENPRNVGS	F-DKGDD	-SV	GTGMVGAPAC	GDVMKLOIKV
1229205_Bphenoliruptrix@YP_006834626	IMAYS	DKVLD	HYENPRNVGS	F-SKDD	-AV	GTGMVGAPAC	GDVMKLOIRV
1163617_Sdenitrificans@YP_008546117	-MSYS	TKVLD	HYENPRNVGT	F-GKDDA	-GV	ATGMVGAPAC	GDVMKLOIKV
266265_Bxenovorans@YP_559453	-MAYS	DKVLD	HYENPRNVGS	F-AKDD	-AV	GTGMVGAPAC	GDVMKLOIRV
398527_Bphytofirmans@YP_001896197	-MAYS	DKVLD	HYENPRNVGS	F-AKDD	-AV	GTGMVGAPAC	GDVMKLOIRV
375286_Jsp@YP_001352943	-MAYS	DKVLD	HYENPRNVGA	F-DKGDE	-TI	GTGMVGAPAC	GDVMKLOIKV
204773_Harsenicoxydans@YP_001100494	-MAYS	DKVLD	HYENPRNVGA	F-DKGDE	-TI	GTGMVGAPAC	GDVMKLOIKV
580332_Slithotrophicus@YP_003524869	-MAYS	EKVID	HYEHPRNVGS	L-DKDDA	-YV	GTGMVGAPAC	GDVMKLOIKV
159087_Daromatica@YP_285167	-MSYS	VKVID	HYENPRNVGS	F-AKEDD	-GV	GTGMVGAPAC	GDVMKLOIKV
882378_Brhizoxinica@YP_004029636	-MAYS	DKVLD	HYENPRNVGS	F-AKDD	-AV	GTGMVGAPAC	GDVMKLOIRV
85643_Tsp@YP_002355840	-MAYS	EKVID	HYENPRNVGS	F-GKEEE	-GV	ATGMVGAPAC	GDVMKLOIKV
757424_Hseropedicae@YP_003776230	-MAYS	DKLMD	HYENPRNVGS	F-DKDD	-SV	ATGMVGAPAC	GDVMKLOIKV
522306_Caccumulibacter@YP_003167247	-MSYS	VKVID	HYENPRNVGS	F-GKEEE	-GV	ATGMVGAPAC	GDVMKLOIKV
76114_Aaromaticum@YP_160687	-MAYS	EKVID	HYENPRNVGA	F-GKEDE	-GV	GTGMVGAPAC	GDVMKLOIKV
381666_Reutropha@YP_725668	-MSYS	TKVLD	HYENPRNVGS	F-DKNDD	-AV	GTGMVGAPAC	GDVMKLOIKV
977880_Ctaiwanensis@YP_002005171	-MSYS	TKVLD	HYENPRNVGS	F-DKNDD	-AV	GTGMVGAPAC	GDVMKLOIKV
1042878_Cnecator@YP_004684939	-MSYS	TKVLD	HYENPRNVGS	F-DKNDD	-AV	GTGMVGAPAC	GDVMKLOIKV
266264_Cmetallidurans@YP_583181	-MSYS	NKVL	HYENPRNVGS	F-DKNDD	-AV	GTGMVGAPAC	GDVMKLOIKV
395494_Ccapsiferriiform@YP_003846450	-MAYS	EKLLD	HYENPRNVGS	F-GKDD	-GL	GTGMVGAPAC	GDVMKLOIKV
859655_Rsolanacearum@YP_005996961	-MSYS	NKVL	HYENPRNVGA	F-EKGDD	-TV	GTGMVGAPAC	GDVMKLOIKV
402626_Rpickettii@YP_001898467	-MSYS	NKVL	HYENPRNVGS	F-EKGDD	-TV	GTGMVGAPAC	GDVMKLOIKV
543913_Bproteobacteriu@YP_007502653	-MAYS	DKVID	HYENPRNVGS	F-EKGDD	-QV	GTGMVGAPAC	GDVMKLOIRV
62928_Asp@YP_933519	-MAYS	DKLLD	HYENPRNVGS	F-GKDD	-GV	ATGMVGAPAC	GDVMKLOIKV
640081_Dsuillum@YP_005028573	-MAYS	VKVID	HYENPRNVGS	F-TKEEE	-GV	GTGMVGAPAC	GDVMKLOIKV
452638_Pnecessarius@YP_001797351	-MAYS	EKVID	HYENPRNVGS	F-EKGDD	-SV	GTGMVGAPAC	GDVMKLOIRV
292415_Tdenitrificans@YP_314923	-MSYS	DKVLD	HYENPRNVGA	F-NKED	-GV	GTGMVGAPAC	GDVMKLOIKV
265072_Mflagellatus@YP_544916	-MAYS	DKVLD	HYENPRNVGS	L-DKNDP	-SV	GTGMVGAPAC	GDVMKLOIKV
582744_Mglucosetrophus@YP_003051619	-MAYS	DKVLD	HYENPRNVGT	L-DKNDP	-SV	GTGMVGAPAC	GDVMKLOIKV
887061_Msp@YP_004040241	-MAYS	DKVLD	HYENPRNVGT	L-DKNDP	-SV	GTGMVGAPAC	GDVMKLOIKV
891398_CTremblaya@YP_004707015	MGVYS	KRVME	YCNDRNVGS	L-PEHE	-DV	GTGVAGSEAC	GDVMRLOVRI
426114_Tarsenitoxydans@YP_003623866	IMAYS	DKVVD	HYENPRNVGS	F-SKDDP	-QV	GTGMVGAPAC	GDVMKLOIRV
75379_Tintermedia@YP_003642782	-MAYS	DKVVD	HYENPRNVGS	F-AKDDP	-QV	GTGMVGAPAC	GDVMKLOIRV
937774_Tequigenitalis@YP_004130301	-MAYS	EKVID	HYENPRNVGS	F-DKSDD	-SV	GTGMVGAPAC	GDVMKLOIKV
1008459_Tasinigenitalis@YP_004874474	-MAYS	EKVID	HYENPRNVGS	F-DKSDE	-SV	GTGMVGAPAC	GDVMKLOIKV
634503_Eictaluri@YP_002934567	-MAYS	DKVID	HYENPRNVGS	F-DNSDP	-NV	GSVMVGAPAC	GDVMKLOIKV
718251_Etarda@YP_005700147	-MAYS	DKVID	HYENPRNVGS	F-DNSDP	-NV	GSVMVGAPAC	GDVMKLOIKV
259536_Parcticus@YP_264760	-MAYS	DOVID	HYENPRNVGN	L-DKNAK	-NV	GTGMVGAPAC	GDVMRLOICV
335284_Pcryohalolentis@YP_580918	-MAYS	DOVID	HYENPRNVGN	L-DKNAK	-NV	GTGMVGAPAC	GDVMRLOICV
571800_Psp@YP_008163576	-MAYS	DOVID	HYENPRNVGN	L-DKNAK	-NV	GTGMVGAPAC	GDVMRLOICV
420662_Mpetroleiphilum@YP_001021452	-MAYS	EKVVE	HYENPRNVGS	F-EKGDD	-TV	GTGMVGAPAC	GDVMKLOIKV
243365_Cviolaceum@NP_900763	-MAYS	EKVID	HYENPRNVGS	F-DKGDD	-SI	GTGMVGAPAC	GDVMKLOIKV
1208919_CKinetoplastiba@YP_007459239	-MAYS	SKVLD	HYENPRNVGS	L-DKTD	-SV	GTGMVGAPAC	GDVMKLOIKV
983545_Gsp@YP_004435367	-MAYS	EKVID	HYENPRNVGG	F-DKSDP	-SI	ATGMVGAPAC	GDVMKLOLKI
342610_Patlantica@YP_660819	-MAYS	EKVID	HYENPRNVGG	F-DKNDP	-SI	ATGMVGAPAC	GDVMKLOLKI
743299_Aferriivorans@YP_004783591	-MAYS	EKVID	HYENPRNVGA	M-DKDD	-GV	GTGMVGAPAC	GDVMRLOIKV
243159_Aferriivorans@YP_002425162	-MAYS	EKVID	HYEHPRNVGA	L-DKDD	-GV	GTGMVGAPAC	GDVMRLOIRV
1005048_Cfungivorans@YP_004753777	-MSYS	EKVID	HYENPRNVGA	F-EKGDE	-TV	GTGMVGAPAC	GDVMKLOIKV
669502_CProffftella@YP_008343646	-MSYS	EKVID	HYENPRNVGV	F-EKND	-TV	GTGMVGAPAC	GDVMKLOIKV
757424_Hseropedicae@YP_003776535	-MSYS	EKVID	HYENPRNVGA	F-EKGDE	-TV	GTGMVGAPAC	GDVMKLOIKV
395495_Lcholodnii@YP_001790080	-MAYS	DKVID	HYEHPRNVGA	F-EKGDE	-SV	GTGMVGAPAC	GDVMKLOIKV
257310_Bbronchiseptica@NP_888820	-MAYS	SKVLD	HYENPRNVGS	F-DKDD	-SV	GTGMVGAPAC	GDVMKLOIKV
990288_Acaldus@YP_004748177	-MAYS	EKVID	HYENPRNVGS	F-DKGDE	-SV	GTGMVGAPAC	GDVMRLOIRV
990288_Acaldus@YP_004748110	-MAYS	RKVID	HYEHPRNVGS	F-DKNA	-EV	GTGMVGAPAC	GDVMRLOIKV
983917_Rgelatinosus@YP_005436383	-MAYS	DKVVD	HYENPRNVGA	F-EKGDE	-TV	GTGMVGAPAC	GDVMRLOIKV
360910_Bavium@YP_786035	-MAYS	DKVLD	HYENPRNVGS	F-EKGDD	-SV	GTGMVGAPAC	GDVMKLOIKV
1036672_Akashmirensis@YP_006379415	-MAYS	NKVL	HYENPRNVGS	F-EKGDE	-SI	GTGMVGAPAC	GDVMKLOIKV
340100_Bpetrii@YP_001631386	-MAYS	SKVLD	HYENPRNVGS	F-DKGDE	-SV	GTGMVGAPAC	GDVMKLOIKV
523791_Kkoreensis@YP_003146685	-MAYS	EKVID	HYENPRNVGS	F-EKTD	-SI	GTGMVGAPAC	GDVMKLOIKV
156889_Mmarinus@YP_866958	-MAYNE	KEVLD	HYEKPRNVGS	M-DKDD	-DV	GTGMVGAPAC	GDVMKLOIKV

404589_Asp@YP_001377835	-MAYS	DKLLD	HYEHPRNVGS	L-DKADP	DV	GTGLVGAPAC	GDVMKLOIKV
290397_Adehalogenans@YP_463806	-MAYS	EKLLD	HYEHPRNVGS	L-DKNDP	DV	GTGLVGAPAC	GDVMKLOIKV
447217_Asp@YP_002132996	-MAYS	EKLLD	HYEHPRNVGS	L-DKNDP	DV	GTGLVGAPAC	GDVMKLOIKV
455488_Adehalogenans@YP_002491042	-MAYS	EKLLD	HYEHPRNVGS	L-DKNDP	DV	GTGLVGAPAC	GDVMKLOIKV
378806_Saurantiaca@YP_003955403	-MAYS	DKVIE	HYENPRNVGT	L-DKADP	NV	GTGLVGAPAC	GDVMRLOLRI
246197_Mxanthus@YP_633158	-MAYS	DKVIE	HYENPRNVGT	L-DKEDP	NV	GTGLVGAPAC	GDVMRLOLKI
483219_Mfulvus@YP_004669542	-MAYS	DKVIE	HYENPRNVGT	L-DKEDP	NV	GTGLVGAPAC	GDVMRLOLKI
1144275_Ccoraloides@YP_005368444	-MAYS	EKVIE	HYENPRNVGT	L-DKNDP	NV	GTGLVGAPAC	GDVMRLOLKI
1278073_Mstipitatus@YP_007362455	-MAYS	DKVID	HYENPRNVGT	M-DKEDP	NV	GTGLVGAPAC	GDVMRLOLKI
448385_Scellulosum@YP_001617979	-MAYS	DKVIE	HYENPHNVGT	L-DKNDE	RV	GTGLVGAPAC	GDVMRLOIKV
399739_Pmendocina@YP_001188990	-MAYS	DKVID	HYENPRNVGK	L-NAEDP	DV	GTGMVGAPAC	GDVMRLOIKV
1294143_Pdenitrificans@YP_007659193	-MAYS	DKVID	HYENPRNVGK	L-NAEDP	DV	GTGMVGAPAC	GDVMRLOIKV
208964_Paeruginosa@NP_252502	-MAYS	EKVID	HYENPRNVGK	L-DAADP	NV	GTGMVGAPAC	GDVMRLOIKV
322710_Avinelandii@YP_002801150	-MAYS	DKVID	HYENPRNVGK	L-DAQDP	DV	GTGMVGAPAC	GDVMRLOIKV
644801_Pstutzeri@YP_007239445	-MAYS	DKVID	HYENPRNVGK	F-DAEDP	SI	GTGMVGAPAC	GDVMRLOIKV
1207075_Psp@YP_007027941	-MAYS	EKVID	HYENPRNVGK	M-DAEDP	DV	GTGMVGAPAC	GDVMRLOIKV
1114970_Pfluorescens@YP_005206437	-MAYS	EKVID	HYENPRNVGK	M-DAQDP	DV	GTGMVGAPAC	GDVMRLOIKV
220664_Pprotogens@YP_262044	-MAYS	EKVID	HYENPRNVGK	M-NAEDP	DV	GTGMVGAPAC	GDVMRLOIKV
351746_Pputida@YP_001266219	-MAYS	EKVID	HYENPRNVGK	M-NAEDP	DV	GTGMVGAPAC	GDVMRLOIKV
1435058_Pmonteilii@YP_008958359	-MAYS	EKVID	HYENPRNVGK	M-NAEDP	DV	GTGMVGAPAC	GDVMRLOIKV
743720_Pfulva@YP_004475358	-MAYS	EKVID	HYENPRNVGK	M-NAEDP	DV	GTGMVGAPAC	GDVMRLOIKV
264730_Psyringae@YP_273568	-MAYS	EKVID	HYENPRNVGK	M-NAEDP	DV	GTGMVGAPAC	GDVMRLOIKV
384676_Pentomophila@YP_606728	-MAYS	EKVID	HYENPRNVGK	M-NADDP	DV	GTGMVGAPAC	GDVMRLOIKV
1430440_Mgryphiswaldens@YP_008937260	-MAYS	DKVVD	HYEHPRNVGS	M-DKDSI	DV	GTGLVGAPAC	GDVMKLOIKV
749219_Mcatarrhalis@YP_003626770	-MAYS	DKVID	HYENPRNVGN	L-DKAAK	NV	GTGMVGAPAC	GDVMRLOIOV
62977_Asp@YP_046090	-MAYS	EKVID	HYENPRNVGI	L-DKNAE	NV	GTGMVGAPAC	GDVMRLOIOV
436717_Aoleivorans@YP_003732380	-MAYS	EKVID	HYENPRNVGV	L-DKNSE	NV	GTGMVGAPAC	GDVMRLOIOV
400667_Abaumannii@YP_001084660	----	----	----	----	----	MVGAPAC	GDVMRLOIOV
871585_Acalcoaceticus@YP_004995269	-MAYS	EKVID	HYENPRNVGV	L-DKNSE	NV	GTGMVGAPAC	GDVMRLOIOV
511062_Osp@YP_005091814	-MAYS	EKVID	HYENPRNVGG	F-DKNDP	NV	ATGMVGAPAC	GDVMKLOLKI
318167_Sfrigidimarina@YP_751106	-MAYS	EKVID	HYENPRNVGS	F-DKNDP	SV	VTGMVGAPAC	GDVMKLOLKI
326297_Samazonensis@YP_927171	-MAYS	EKVID	HYENPRNVGS	F-DKNDP	SV	VTGMVGAPAC	GDVMKLOLKI
318161_Sdenitrificans@YP_562467	-MAYS	EKVID	HYENPRNVGS	F-DKNDP	SV	VTGMVGAPAC	GDVMKLOLKI
167879_Cpsychrerythrae@YP_267876	-MAYS	EKVID	HYENPRNVGS	M-DKNDP	SV	ATGMVGAPAC	GDVMKLOLKI
637905_Sviolacea@YP_003556341	-MAYS	EKVID	HYENPRNVGS	F-DKNDP	SV	VTGMVGAPAC	GDVMKLOLKI
225849_Spiezotolerans@YP_002311055	-MAYS	EKVID	HYENPRNVGS	F-DKNDS	SV	VTGMVGAPAC	GDVMKLOLRI
323850_Sloihica@YP_001094441	-MAYS	EKVID	HYENPRNVGS	F-DKNDP	SV	VTGMVGAPAC	GDVMKLOLKI
425104_Ssediminis@YP_001474605	-MAYS	EKVID	HYENPRNVGS	F-DKNDP	SV	VTGMVGAPAC	GDVMKLOLKI
392500_Swoodyi@YP_001760156	-MAYS	EKVID	HYENPRNVGS	F-DKNDP	SV	VTGMVGAPAC	GDVMKLOLRI
60481_Ssp@YP_737869	-MAYS	EKVID	HYENPRNVGS	F-DKNDP	SV	VTGMVGAPAC	GDVMKLOLKI
211586_Soneidensis@NP_717861	-MAYS	EKVID	HYENPRNVGS	F-DKNDP	SV	VTGMVGAPAC	GDVMKLOLKI
693973_Sbaltica@YP_005273706	-MAYS	EKVID	HYENPRNVGS	F-DKNDP	SV	VTGMVGAPAC	GDVMKLOLKI
399804_Sputrefaciens@YP_006009782	-MAYS	EKVID	HYENPRNVGS	F-DKNDP	SV	VTGMVGAPAC	GDVMKLOLKI
298386_Sprofundum@YP_128966	-MAYS	EKVID	HYENPRNVGS	F-DKNDK	NI	GSGMVGAPAC	GDVMKLOIKV
28173_Vnigripulchritu@YP_008621944	-MAYS	EKVID	HYENPRNVGS	F-DKEDP	SV	GSGMVGAPAC	GDVMKLOIKV
1219076_Valginolyticus@YP_008537102	-MAYS	EKVID	HYENPRNVGS	F-DKEDP	SV	GSGMVGAPAC	GDVMKLOIKV
150340_Vsp@YP_003286982	-MAYS	EKVID	HYENPRNVGS	F-DKEDP	SV	GSGMVGAPAC	GDVMKLOIKV
345073_Vcholerae@YP_001216234	-MAYS	EKVID	HYENPRNVGS	F-DKEDP	SV	GSGMVGAPAC	GDVMKLOIKV
223926_Vparahaemolytic@NP_796976	-MAYS	EKVID	HYENPRNVGS	F-DKEDP	SV	GSGMVGAPAC	GDVMKLOIKV
882102_Vanguillarum@YP_004566935	-MAYS	EKVID	HYENPRNVGS	F-DKEDP	TI	GSGMVGAPAC	GDVMKLOIKV
575788_Vsplendidus@YP_002416251	-MAYS	EKVID	HYENPRNVGS	F-DKEDP	SI	GSGMVGAPAC	GDVMKLOIKV
1129794_Vpsychrophila@YP_007545568	-MAYS	EKVID	HYENPRNVGG	F-DKNDP	SI	ATGMVGAPAC	GDVMKLOLKI
196600_Vvulnificus@NP_933549	-MAYS	EKVID	HYENPRNVGS	F-DKEDP	SV	GSGMVGAPAC	GDVMKLOIKV
903510_Vfurnissii@YP_004993913	-MAYS	EKVID	HYENPRNVGS	F-DKEDP	SI	GSGMVGAPAC	GDVMRLOIKV
338187_Vcampbellii@YP_001444276	-MAYS	EKVID	HYENPRNVGS	F-DKEDP	SV	GSGMVGAPAC	GDVMKLOIKV
338187_Vcampbellii@YP_008526292	-MAYS	EKVID	HYENPRNVGS	F-DKEDP	SV	GSGMVGAPAC	GDVMKLOIKV
314282_Psp@YP_007639631	-MAYS	EKVID	HYENPRNVGS	FDDKDDK	SI	ATGMVGAPAC	GDVMKLOLKI
357804_Pingrahamii@YP_942749	-MAYS	EKVID	HYENPRNVGS	F-DKDDL	SV	ATGMVGAPAC	GDVMKLOLKI
326442_Phaloplanktis@YP_341160	-MAYS	DKVID	HYENPRNVGV	L-DKNDP	SV	ATGMVGAPAC	GDVMKLOIKV
234831_Psp@YP_004067531	-MAYS	DKVID	HYENPRNVGA	L-DKNDP	SV	ATGMVGAPAC	GDVMKLOIKV
595494_Tauensis@YP_002893203	-MAYS	EKVID	HYEHPRNVGS	F-DKDDP	SV	ATGMVGAPAC	GDVMKLOLKV
396588_Tsulfidiphilus@YP_002513559	-MAYS	DKVLD	HYENPRNVGS	L-DKADP	SV	GTGMVGAPAC	GDVMKLOIKV
396588_Tsulfidiphilus@YP_002514125	-MAYS	DKVLD	HYENPRNVGS	L-DKADP	SV	GTGMVGAPAC	GDVMKLOIRV
998088_Averonii@YP_004393031	-MAYS	EKVID	HYENPRNVGG	F-DKNDP	SV	ATGMVGAPAC	GDVMKLOLKI
380703_Ahydrophila@YP_856284	-MAYS	EKVID	HYENPRNVGG	F-DKNDP	SI	ATGMVGAPAC	GDVMKLOLKI
382245_Asalmonicida@YP_001142383	-MAYS	EKVID	HYENPRNVGG	F-DKNDP	NI	ATGMVGAPAC	GDVMKLOLKI
342108_Mmagnetium@YP_422390	-MAYS	DKVID	HYEHPRNVGA	L-DKDDS	AV	GTGLVGAPAC	GDVMKLOIKV
1245471_Presinovorans@YP_008101472	-MAYS	EKVID	HYENPRNVGK	L-DAQDP	NV	GTGMVGAPAC	GDVMRLOIKV
365044_Pnaphthalenivor@YP_982518	-MAYS	EKVID	HYENPRNVGS	F-EKGDE	TV	GTGMVGAPAC	GDVMKLOIKV
296591_Psp@YP_549004	-MAYS	EKVID	HYENPRNVGS	F-EKGDD	SV	GTGMVGAPAC	GDVMKLOIKV
232721_Asp@YP_986388	-MAYS	DKVID	HYENPRNVGS	F-DKGDD	SV	GTGMVGAPAC	GDVMKLOIKV
535289_Aebreus@YP_002553097	-MAYS	DKVID	HYENPRNVGS	F-DKGDD	SV	GTGMVGAPAC	GDVMKLOIKV
365046_Rtataouinensis@YP_004618947	-MAYS	EKVID	HYENPRNVGS	F-DKGDE	SV	GTGMVGAPAC	GDVMKLOIKV
946483_CSymbiobacter@YP_008681130	-MAYS	EKVID	HYENPRNVGS	F-DKGDD	SV	GTGMVGAPAC	GDVMKLOIKV
312309_Vfischeri@YP_204001	-MAYS	EKVID	HYENPRNVGS	F-EKDDP	SV	GSGMVGAPAC	GDVMKLOIKV
595537_Vparadoxus@YP_004156043	-MAYS	EKVID	HYENPRNVGS	F-EKGDD	SV	GTGMVGAPAC	GDVMKLOIKV
316275_Asalmonicida@YP_002262235	-MAYS	EKVID	HYENPRNVGS	F-EKDDP	SV	GSGMVGAPAC	GDVMKLOIKV
391735_Veiseniae@YP_997138	-MAYS	EKVID	HYENPRNVGS	F-DKGDD	SV	GTGMVGAPAC	GDVMKLOIKV
397945_Acitrullii@YP_970793	-MAYS	DKVID	HYENPRNVGS	F-DKSDD	SV	GTGMVGAPAC	GDVMKLOIKV
643561_Aavenae@YP_004235248	-MAYS	DKVID	HYENPRNVGS	F-DKSDD	SV	GTGMVGAPAC	GDVMKLOIKV
398578_Dacidovorans@YP_001565014	-MAYS	DKVID	HYENPRNVGS	F-DKNDE	SV	GTGMVGAPAC	GDVMKLOIKV
742013_Dsp@YP_004488168	-MAYS	DKVID	HYENPRNVGS	F-DKNDE	SV	GTGMVGAPAC	GDVMKLOIKV
338969_Aferrireducens@YP_523433	-MAYS	DKVID	HYENPRNVGS	F-DKGDE	SV	GTGMVGAPAC	GDVMKLOIKV
596154_Adenitrificans@YP_004388278	-MAYS	DKVID	HYENPRNVGS	F-DKGDD	TV	GTGMVGAPAC	GDVMKLOIKV
688245_Ctestosteroni@YP_003278774	-MAYS	EKVID	HYENPRNVGS	F-DKSDD	SV	GTGMVGAPAC	GDVMKLOIKV
1266738_Pmirabilis@YP_008398502	-MAYS	DKVID	HYENPRNVGS	F-DNNDP	TV	GSGMVGAPAC	GDVMKLOIKV
1124991_Mmorganii@YP_007505117	-MAYS	DKVID	HYENPRNVGS	F-DNEDP	TV	GSGMVGAPAC	GDVMKLOIKV
406817_Xnemotophila@YP_003713469	-MAYS	DKVID	HYENPRNVGS	F-DSDDP	SV	GSGMVGAPAC	GDVMRLOIKV

291112_Pasymbiotica@YP_003040200	-MAYS	EKVID	HYENPRNVGS	F-DNEDP-TV	GSGMVGAPAC	GDVMKLOIKV
243265_Pluminescens@NP_930506	-MAYS	EKVID	HYENPRNVGS	F-DSEDP-MV	GSGMVGAPAC	GDVMKLOIKV
406818_Xbovienii@YP_003468915	-MAYS	DKVID	HYENPRNVGS	F-DSEDP-SV	GSGMVGAPAC	GDVMKLOIKV
273123_Ypseudotubercu@YP_071365	-MAYS	EKVID	HYENPRNVGS	F-DSQDP-TI	GSGMVGAPAC	GDVMKLOIKV
393305_Yenterocolitica@YP_001005390	-MAYS	EKVID	HYENPRNVGS	F-DNADP-TI	GSGMVGAPAC	GDVMKLOIKV
1346614_Sliquefaciens@YP_008231656	-MAYS	EKVID	HYENPRNVGS	F-DNEDP-SV	GSGMVGAPAC	GDVMKLOIKV
1348660_Splymuthica@YP_008160622	-MAYS	EKVID	HYENPRNVGS	F-DNEDP-TV	GSGMVGAPAC	GDVMKLOIKV
399741_Sproteamaculans@YP_001479850	-MAYS	EKVID	HYENPRNVGS	F-DNEDP-SV	GSGMVGAPAC	GDVMKLOIKV
1249634_Smarcescens@YP_007345780	-MAYS	EKVID	HYENPRNVGS	F-DNEDP-SV	GSGMVGAPAC	GDVMKLOIKV
187410_Ypestis@NP_668657	-MAYS	EKVID	HYENPRNVGS	F-DSQDP-TI	GSGMVGAPAC	GDVMKLOIKV
1157951_Pstuartii@YP_006215182	-MAYS	EKVID	HYENPRNVGS	F-DNNDP-SV	GSGMVGAPAC	GDVMKLOIKV
344609_Sboydii@YP_001881320	-MAYS	EKVID	HYENPRNVGS	F-DNNDE-NV	GSGMVGAPAC	GDVMKLOIKV
104623_Ssp@YP_008524031	-MAYS	EKVID	HYENPRNVGS	F-DNADP-NI	GSGMVGAPAC	GDVMKLOIKV
561229_Dzeae@YP_003003456	-MAYS	EKVID	HYENPRNVGS	F-DSSDP-SI	GSGMVGAPAC	GDVMKLOIKV
590409_Ddadantii@YP_003334610	-MAYS	EKVID	HYENPRNVGS	F-DSSDP-SI	GSGMVGAPAC	GDVMKLOIKV
561230_Pcaratovorum@YP_003018589	-MAYS	EKVID	HYENPRNVGS	F-DNADP-SI	GSGMVGAPAC	GDVMKLOIKV
561231_Pwasabiae@YP_003258666	-MAYS	EKVID	HYENPRNVGS	F-DNADP-SI	GSGMVGAPAC	GDVMKLOIKV
1166016_Psp@YP_006282128	-MAYS	EKVID	HYENPRNVGS	F-DNADP-SI	GSGMVGAPAC	GDVMKLOIKV
218491_Patrosepticum@YP_051325	-MAYS	EKVID	HYENPRNVGS	F-DNADP-SI	GSGMVGAPAC	GDVMKLOIKV
99287_Senterica@NP_461477	-MAYS	EKVID	HYENPRNVGS	F-DNNDD-NV	GSGMVGAPAC	GDVMKLOIKV
218493_Sbongori@YP_004731144	-MAYS	EKVID	HYENPRNVGS	F-DNNDD-NV	GSGMVGAPAC	GDVMKLOIKV
290339_Csakazakii@YP_001436836	-MAYS	EKVID	HYENPRNVGS	F-DNNDD-NV	GSGMVGAPAC	GDVMKLOIKV
693216_Cturicensis@YP_003211492	-MAYS	EKVID	HYENPRNVGS	F-DNNDD-NV	GSGMVGAPAC	GDVMKLOIKV
399742_Esp@YP_001177741	-MAYS	EKVID	HYENPRNVGS	F-DNSDE-SV	GSGMVGAPAC	GDVMKLOIKV
640513_Easburiae@YP_004829762	-MAYS	EKVID	HYENPRNVGS	F-DNSDE-SV	GSGMVGAPAC	GDVMKLOIKV
693444_Ebacterium@YP_007339349	-MAYS	EKVID	HYENPRNVGS	F-DNSDE-SV	GSGMVGAPAC	GDVMKLOIKV
290338_Ckoseri@YP_001451852	-MAYS	EKVID	HYENPRNVGS	F-DNSDE-NV	GSGMVGAPAC	GDVMKLOIKV
484021_Kpneumoniae@YP_002920722	-MAYS	EKVID	HYENPRNVGS	F-DNSDE-NV	GSGMVGAPAC	GDVMKLOIKV
637910_Crodentium@YP_003366009	-MAYS	EKVID	HYENPRNVGS	F-DNSDE-NV	GSGMVGAPAC	GDVMKLOIKV
640131_Kvariicola@YP_003438138	-MAYS	EKVID	HYENPRNVGS	F-DNSDE-NV	GSGMVGAPAC	GDVMKLOIKV
1191061_Koxytoca@YP_006500071	-MAYS	EKVID	HYENPRNVGS	F-DNSDE-NV	GSGMVGAPAC	GDVMKLOIKV
1286170_Rornithinolytic@YP_007872306	-MAYS	EKVID	HYENPRNVGS	F-DNSDD-SV	GSGMVGAPAC	GDVMKLOIKV
511145_Ecoli@NP_417024	-MAYS	EKVID	HYENPRNVGS	F-DNNDE-NV	GSGMVGAPAC	GDVMKLOIKV
585054_Efergusonii@YP_002381825	-MAYS	EKVID	HYENPRNVGS	F-DNNDE-NV	GSGMVGAPAC	GDVMKLOIKV
198214_Sflexneri@NP_708368	-MAYS	EKVID	HYENPRNVGS	F-DNNDE-NV	GSGMVGAPAC	GDVMKLOIKV
216599_Ssonnei@YP_005457544	-MAYS	EKVID	HYENPRNVGS	F-DNNDE-NV	GSGMVGAPAC	GDVMKLOIKV
300267_Sdysenteriae@YP_404261	-MAYS	EKVID	HYENPRNVGS	F-DNNDE-NV	GSGMVGAPAC	GDVMKLOIKV
716541_Ecloacae@YP_003614361	-MAYS	EKVID	HYENPRNVGS	F-DNSDE-SV	GSGMVGAPAC	GDVMKLOIKV
701347_Elignolyticus@YP_003940771	-MAYS	EKVID	HYENPRNVGS	F-DNSDE-NV	GSGMVGAPAC	GDVMKLOIKV
630626_Sblattae@YP_006318650	-MAYS	EKVID	HYENPRNVGS	F-DNSDE-NV	GSGMVGAPAC	GDVMKLOIKV
1028307_Eaerogenes@YP_004590373	-MAYS	EKVID	HYENPRNVGS	F-DNSDD-SV	GSGMVGAPAC	GDVMKLOIKV
557723_Hparasuis@YP_002474707	-MAYS	DKVID	HYENPRNVGS	F-DKKAS-DI	GTGMVGAPAC	GDVMQLOIKV
1005058_Ganatis@YP_004420698	-MAYS	EKVID	HYENPRNVGS	F-DKKDP-AV	GSGMVGAPAC	GDVMQLOIKV
1075089_Pmoltocida@YP_005176279	-MAYS	NKVID	HYENPRNVGS	L-DKKDA-NV	GTGMVGAPAC	GDVMQLOIKV
205914_Hsomnus@YP_718490	-MAYS	EKLLD	HYENPRNVGS	F-DKKDP-TV	GSGMVGAPAC	GDVMQLOIKV
1171377_Btrehalosi@YP_007548422	-----	-----	-----	-----	MVGAPAC	GDILRLOIKV
233412_Hducreyi@NP_873560	-MAYS	DKVID	HYENPRNVGT	F-DKEAT-DV	GTGMVGAPAC	GDILRLOIKV
416269_Apleuropneumoni@YP_001053631	-MAYS	EKVID	HYENPRNVGT	F-DKEAA-DI	GTGMVGAPAC	GDILRLOIKV
696748_Asuis@YP_006816777	-MAYS	EKVID	HYENPRNVGT	F-DKEAA-DI	GTGMVGAPAC	GDILRLOIKV
1366053_Mhaemolytica@YP_008338465	-MAYS	EKVID	HYENPRNVGT	F-DKEAS-DI	GTGMVGAPAC	GDILRLOIKV
1334187_Hinfluenzae@YP_008544790	MAYS	EKVID	HYENPRNVGT	L-DKKDS-NV	GTGMVGAPAC	GDVMQLOIKV
634176_Aaphrophilus@YP_003007650	-MTYS	NKVID	HYENPRNVGS	M-DKKDS-SV	GTGMVGAPAC	GDVMQLOIRV
694569_Aactinomycetemc@YP_006286355	-----	-----	-----	M-DRKDS-AV	GTGMVGAPAC	GDVMQLOIRV
862965_Hparainfluenzae@YP_004822800	-MAYS	EKVID	HYENPRNVGS	M-DKKDN-SV	GTGMVGAPAC	GDVMQLOIKV
221988_Msucciniciprodu@YP_088916	-MAYS	EKVID	HYENPRNVGS	F-DKKSS-DV	GTGMVGAPAC	GDVMQLOIKV
339671_Msuccinogenes@YP_001344170	-MAYS	EKVID	HYENPRNVGS	F-DKKAS-DV	GTGMVGAPAC	GDVMQLOIKV
550540_Fbalearica@YP_003914035	-MAYS	DKVID	HYENPRNVGS	F-DKNDP-NV	ATGMVGAPAC	GDVMKLOLKI
396595_Tsp@YP_003460082	-MAYS	DKVID	HYENPRNVGS	F-DKNDE-SV	GTGMVGAPAC	GDVMKLOIKV
413404_CRuthia@YP_903798	-MAY	EKQVMD	HYENPRNVGV	L-DKDAK-NV	GTGMVGAPAC	GDVMRLOIOV
412965_CVesicomysociu@YP_001219373	-MAY	GKQVMD	HYENPRNVGV	L-DKNAK-NV	GTGMVGAPAC	GDVMRLOIKI
1208921_CKinetoplastiba@YP_007448562	-MAYS	DKVLD	HYENPRNVGS	F-SKDDE-SV	GTGMVGAPAC	GDVMKLOIKV
561501_Baphidicola@YP_002468877	-MAYS	KKVID	HYENPRNVGS	F-SSTDL-NV	GSGLVGAPAC	GDVMKLOIKV
357244_Otsutsugamushi@YP_001248706	MAYS	SEVIX	YYEDRSNVGS	L-DETDK-SV	GTGLVGAPAC	GDVMKLOIKV
1003201_Rtyphi@YP_005427548	-MAYN	KKVID	HYENPRNVGS	L-DKNKK-NV	GTGLVGAPAC	GDVMKLOIEV
1105111_CRickettsia@YP_005365544	-MAYS	KKVID	HYENPRNVGS	L-DKENK-NV	GTGLVGAPAC	GDVMKLOIAV
272944_Rconorii@NP_360366	-MAYS	KKVID	HYENPRNVGS	L-DKENK-NV	GTGLVGAPAC	GDVMKLOIAV
452659_Rrickettsii@YP_001650107	-MAYS	KKVID	HYENPRNVGS	L-DKENK-NV	GTGLVGAPAC	GDVMKLOIAV
347255_Rafricae@YP_002845312	-MAYS	KKVID	HYENPRNVGS	L-DKENK-NV	GTGLVGAPAC	GDVMKLOIAV
562019_Rpeacockii@YP_002916645	-MAYS	KKVID	HYENPRNVGS	L-DKENK-NV	GTGLVGAPAC	GDVMKLOIAV
1105113_Rrhipicephali@YP_005390607	-MAYS	KKVID	HYENPRNVGS	L-DKENK-NV	GTGLVGAPAC	GDVMKLOIAV
416276_Rmassiliae@YP_001499486	MAYS	KKVID	HYENPRNVGS	L-DKENK-NV	GTGLVGAPAC	GDVMKLOIAV
1105108_Rparkeri@YP_005392983	-MAYS	KKVID	HYENPRNVGS	L-DKENK-NV	GTGLVGAPAC	GDVMKLOIAV
1105114_Rmontanensis@YP_005391246	-MAYS	KKVID	HYENPRNVGS	L-DKENK-NV	GTGLVGAPAC	GDVMKLOIAV
1032845_Rheilongjiangen@YP_004764467	-MAYS	KKVID	HYANPRNVGS	L-DKENK-NV	GTGLVGAPAC	GDVMKLOIAV
652620_Rjaponica@YP_004884928	-MAYS	KKVID	HYANPRNVGS	L-DKENK-NV	GTGLVGAPAC	GDVMKLOIAV
481009_Rphilipii@YP_005300823	-MAYS	KKVID	HYENPRNVGS	L-DKENK-NV	GTGLVGAPAC	GDVMKLOIAV
1105109_Rslovaca@YP_005426472	-MAYS	KKVID	HYENPRNVGS	L-DKENK-NV	GTGLVGAPAC	GDVMKLOIAV
1105107_Rcanadensis@YP_005299497	-MAYS	KKVID	HYENPRNVGS	L-NKESQ-NV	GTGLVGAPAC	GDVMKLOIEV
336407_Rbellii@YP_538116	-MAYS	KKVID	HYENPRNVGS	L-DKEKK-NV	GTGLVGAPAC	GDVMKLOIEV
315456_Rfelis@YP_246860	-MAYS	KKVID	HYENPRNVGS	L-DKEKK-NV	GTGLVGAPAC	GDVMKLOIEV
293614_Rakari@YP_001493572	-MAYS	TKVID	HYENPRNVGS	L-DKEKK-NV	GTGLVGAPAC	GDVMKLOIEV
1105110_Raustralis@YP_005414962	-MAYS	KKVID	HYENPRNVGS	L-DKEKK-NV	GTGLVGAPAC	GDVMKLOIEV
434131_Nristicii@YP_003081518	-MAYS	DSVLD	HYNNPRNVGT	I-DKNKK-NV	GTGLVGAPAC	GDVMRLOIEV
222891_Nsennetsu@YP_506192	-MAYS	DSVLD	HYNNPRNVGT	I-DKNKK-NV	GTGLVGAPAC	GDVMRLOIEV
330214_CNitrospira@YP_003799619	-MAYS	EKVVD	HFNNPRNMGS	F-KKEED-GV	GTGIVGAPEC	GDVMKLOIKV
984262_Sgrandis@YP_005322201	-MAYS	EKLLD	HFKNPRNVGT	L-DKNKN-TV	GTGLVGAPEC	GDVMRLOIEV
100901_Wendosymbiont@YP_006555868	-MSYN	KKILD	HYENPRNVGS	L-DKNDP-NV	GTGLVGAPEC	GDVMKLOIKV
66084_Wsp@YP_002727379	-MSYN	EKILD	HYENPRNVGS	L-DKNDP-NV	GTGLVGAPEC	GDVMKLOIKV

1423892_Emuris@YP_008929080	-MSYS	ESLLE	YKPNKPNVGT	L-SKEDY	-NV	GTGLVGAPSC	GDVMKLOIKV
574556_Acentrale@YP_003328545	-MSYS	DAVLD	RCKNPQNVGS	L-PKDDL	-NV	GTGLVGAPSC	GDVMKLOIKV
320483_Amarginal@YP_002563600	YMSYS	DAVLD	RCKNPQNVGS	L-PKDDL	-NV	GTGLVGAPSC	GDVMKLOIKV
1184253_Aphagocytophilum@YP_008332775	-MSYS	DAVLN	RCKAPQNVGS	L-PKDDI	-SV	GTGLVGAPSC	GDVMKLOIRV
205920_Echaffeensis@YP_507440	-MSYS	ESLLE	HYKNPKNVGT	L-PKEDY	-NV	GTGLVGAPSC	GDVMKLOIKV
254945_Eruminantium@YP_180281	-MSYS	ESLLE	HYKNPKNVGT	L-PKEDY	-NV	GTGLVGAPSC	GDVMKLOIKV
254945_Eruminantium@YP_197308	-MSYS	ESLLE	HYKNPKNVGT	L-PKEDY	-NV	GTGLVGAPSC	GDVMKLOIKV
269484_Ecanis@YP_303050	-MSYS	EVLLS	HYKNPKNVGT	L-PKDDY	-NV	GTGLVGAPSC	GDVMKLOIKV
517418_Cthalassium@YP_001997584	-MAYS	DKVMD	HYNNPRNVGS	L-DQKDE	-QV	GTGVVGAPEC	GDVMKLOIKV
485917_Pheparinus@YP_003091837	-MAYS	EKVII	HYTNPRNVGT	L-NKDSK	-SV	GTGLVGAPEC	GDVMRLOIEV
762903_Psaltans@YP_004273747	-MAYS	DKVID	HYSNPRNVGT	L-DKSKQ	-NV	GTGLVGAPEC	GDVMRLOIEV
929556_Scanadensis@YP_006255074	-MAYS	EKVID	HYTHPRNVGT	L-DKAKQ	-NV	GTGLVGAPEC	GDVMRLOIEV
760192_Hhydrossis@YP_004446110	-MAYS	DKVLE	HFQNPQNVGT	L-DKSKP	-TV	GTGLVGAPEC	GDVMRLOIEV
1162668_Lferrooxidans@YP_005469656	-MAYS	DKVID	HYNNPRNMGS	F-DKSDS	-NV	GTGIVGAPEC	GDVMKLOLKI
1048260_Lferriphilum@YP_006765680	-MAYS	DKVVD	HYNNPRNMGS	F-DKSEE	-NV	GTGIVGAPEC	GDVMKLOLKI
240015_Acapsulatum@YP_002755573	-MAYS	DKVID	HYNNPRNVGS	L-DKSSE	-AV	GTGLVGAPEC	GDVMRLOIRV
204669_Ckoribacter@YP_589562	-MAYS	EKVLD	HYSNPRNVGS	M-DKNSA	-EV	GTGLVGAPEC	GDVMKLOIKV
1198114_Gtundricola@YP_004219465	-MAYS	DKVVD	HYSNPRNVGS	M-DKSLD	-EV	GTGLVGAPEC	GDVMRLOIRV
926566_Troseus@YP_006423699	-MAYS	DKVVD	HYENPRNVGT	L-DKSSS	-EV	GTGLVGAPEC	GDVMRLOIKV
401053_Tsaanensis@YP_04180969	-MAYS	DKVVD	HYENPRNVGT	L-DKAST	-EV	GTGLVGAPEC	GDVMRLOIKV
682795_Gmallensis@YP_005055878	-MAYS	DKVVD	HYENPRNVGT	L-DKSSS	-EV	GTGLVGAPEC	GDVMRLOIKV
696127_Cmidichloria@YP_004679282	-MAYS	KKVID	HYENPQNVGS	F-AKDEE	-NV	GTGLVGAPSC	GDVMKLOIKV
871271_Czindieria@YP_003878048	MTFYS	KKLIK	YCEKPKNIGS	F-LKNNR	-KI	GTGITGSPSC	GDVMKLOIKI
657324_Bfibrisolvens@YP_007819038	MALYS	EKVID	HYNNPRNVGT	I-ENAD	----	GVGEVGNPVC	GDIMKIYLKI
768670_Cnitroreducens@YP_004051749	KGPYS	DKVMD	HFNNPRNMGE	I-EDAN	----	GVGEVGNPAC	GDVMKLOFKI
717231_Fsinusarabici@YP_004603876	KGPYS	EKVME	HFNNPRNMGE	I-EDAS	----	GVGEVGNPAC	GDVMKLOFLKI
639282_Ddesulfuricans@YP_003496772	KGPYS	EKVMD	HFNNPRNMGE	I-EDAN	----	AVGEVGNPAC	GDVMKLYMKI
522772_Dacetiphilus@YP_003503972	KGPYS	EKVMD	HFNNPRNMGE	I-EDAN	----	GIGEVGNPAC	GDVMKLOFLKI
693746_Ovalericigenes@YP_004880314	-MLYS	EKVMD	HFQNPQNVGT	M-DDAD	----	GVGEVGNAC	GDIMRMYIKV
657321_Rbromii@YP_007781362	-MAYS	EKVMD	HFANPRNVGE	I-ENAD	----	GIGEVGNPAC	GDIMRMYIKV
657322_Fprausnitzii@YP_007799942	ASMYS	AKVME	HFANPNVGE	L-PDAN	----	GVGEVGNPKC	GDIMRMYIKI
213810_Rchampanellensis@YP_007828576	-MLYS	EKVMD	HFANPRNVGE	I-PDAD	----	GVGEVGNAC	GDIMKMYIKV
657319_[siraeum@YP_007775950	-MIYS	EKVMD	HYANPRNVGE	I-EDAN	----	GVGEVGNAC	GDIMKMYLKI
293826_Ametalliredigen@YP_001320267	--MYS	EKVMD	HFANPRNVGE	I-ENAD	----	GVGEVGNPKC	GDIMKMYLKI
350688_Aoremlandii@YP_001513205	--MYS	EKVMD	HFANPRNVGE	I-EKAC	----	AVGEVGNAC	GDIMKMYLKI
546269_Falocis@YP_005054244	-MLY	TEKVM	HFNNPRNVGE	I-PDAD	----	GIGEVGNAC	GDIMRMYLKI
1511_[sticklandii@YP_003936518	-----	MD	HFANPRNVGE	I-EGAD	----	GVGEVGNAC	GDIMKIYLVK
699034_Pdifficile@YP_006198328	-MOYS	DKVME	HFNNPRNMGE	I-DNAS	----	GVGEVGNPAC	GDIMKIFLDI
1128398_[acidurici@YP_006788189	-MYS	EKVME	HFNNPRNVGE	I-ODAD	----	GIGEVGNAC	GDIMKMYLKI
572544_Ipolytropus@YP_003967871	-MOYS	EKVMD	HFNNPRNVGT	I-ENPD	----	GVGEVGNPAC	GDIMKIFLDI
469604_Fnucleatum@YP_008477745	-MOYT	EKVMD	HFNNPNVGT	I-ENPD	----	GVGEVGNPAC	GDIMEIFIKV
580340_Tlienii@YP_004932350	--MYS	EKVME	LFMHPKNAGK	I-EDAD	----	GIGEVGNPAC	GDIMKIYIKV
891968_Amobile@YP_006444325	--MYT	EKVME	LFMHPKNVGR	I-EDAD	----	GIGEVGNPVC	GDVMKIYLKI
525903_Tacidaminovorans@YP_003316727	-MAYS	EKVVQ	YFMNPVNVGE	L-PDED	----	GVGEVGNPKC	GDVMKIYLRV
697281_Maustraliensis@YP_004463371	--MYS	QKVM	HFANPRNVGE	I-PDAD	----	GVGEVGNPAC	GDIMKIFIKV
309799_Dthermophilum@YP_002251521	--MYS	EKVL	HFNNPRNVGE	I-ENAD	----	GVGEVGNPAC	GDVMKMYLKI
368407_Mmarisnigri@YP_001047821	--MYT	EKVII	EFNPNVGE	L-ADAD	----	AVGEAGSPTC	GDIMKIYLVK
903814_Elimosum@YP_003961665	MMEYT	DKVME	YKPNKPNVGT	M-EDAN	----	GIGEVGNPAC	GDIMKMYLKI
931626_Awoodii@YP_005268656	-MEYT	DVME	NFTCPKHVGE	L-EDAN	----	GIGEVGNPAC	GDIMKIFLDI
410358_Mlabreanus@YP_001029708	--MYS	EKVMD	HFANPRNVGM	I-EDPS	----	GVGEVGNPAC	GDIMKMYLKI
679926_Mpetreolarius@YP_003895855	--MYS	DKVMD	HFANPRNVGT	I-EDAD	----	GIGEVGNPAC	GDIMKIYIKV
86416_Cpasteurianum@YP_007940944	-MYS	EKVMD	HFANPRNVGT	I-ENAN	----	GVGEVGNPAC	GDIMKIYIKV
929506_Cbotulinum@YP_004396224	--MYS	EKVMD	HFANPRNVGT	I-ENPS	----	GVGEVGNPAC	GDIMKIYLEV
386415_Cnovyi@YP_878355	--MYS	EKVMD	HFANPRNVGT	I-ENPS	----	GVGEVGNPAC	GDIMKIYLDV
748727_Clungdahlii@YP_003779382	-MYS	EKVMD	HFANPRNVGT	I-PDAN	----	GVGEVGNPAC	GDIMKIYIKV
1341692_Cautoethanogenu@YP_008700753	-MYS	EKVMD	HFANPRNVGT	I-PDAN	----	GVGEVGNPAC	GDIMKIYIKV
747365_Tnarugense@YP_004437867	--MYS	EKVMD	HFANPRNVGT	I-SDAD	----	GIGEVGNPAC	GDIMKVIYIKV
651822_Ffastidiosum@YP_007827223	ALDYS	QKVM	HFANPRNVGT	L-KDAD	----	GVGEAGNPRC	GDIMKIYLVK
572547_Catolombiensis@YP_003553035	-MLYS	EIVMD	HFANPRNVGT	I-KDAD	----	GVGEAGNPRC	GDIMKIYIKV
212717_Acetani@NP_781697	MMEYS	DKVME	HFANPRNVGT	I-SDAN	----	GVGEVGNPKC	GDIMKIYLVK
431943_Ckluyveri@YP_001394709	-MYS	EKVMD	HFANPRNVGT	I-PDAN	----	GVGEVGNPKC	GDIMKMYIKV
573061_Ccellulovorans@YP_003843335	-MEYS	EKVME	HFANPRNVGT	I-ESAD	----	GIGEVGNPKC	GDIMKIYLVK
508767_Cbotulinum@YP_001920515	-MIYT	DKVMD	HFANPRNVGT	I-EDAN	----	GVGEVGNAC	GDIMKIYLVK
931276_Csaccharoperbut@YP_007454264	-MIYS	EKVME	HFANPRNVGT	I-ENAN	----	GVGEVGNAC	GDIMKIYLVK
290402_Cbeijerinckii@YP_001308237	-MIYS	EKVME	HFANPRNVGT	I-V DAN	----	GVGEVGNAC	GDIMKIYLVK
1345695_Csaccharobutyli@YP_008674363	-MIYS	EKVME	HFANPRNVGT	I-PDAN	----	GVGEVGNAC	GDIMKIYLVK
269797_Mbarkeri@YP_305925	-MDYS	LKVM	HFANPRNMGS	I-ENSD	----	GVGEVGNAC	GDIMKIYLVK
188937_Macetivorans@NP_617616	-MDYS	AKVLD	HFANPRNMGS	I-ANCD	----	GVGEVGNAC	GDIMKIFLDI
195103_Cperfringens@YP_696469	-MIYS	EKVMD	HFANPRNVGT	I-KDAN	----	GIGEVGNAC	GDIMKIYLKI
593750_Mformicica@YP_007249963	--MYS	DKVMD	HFANPRNVGT	I-ENPD	----	GVGEVGNPVC	GDIMKIYLKI
456442_Mboonei@YP_001405283	--MYS	EIVMD	HFANPRNVGT	I-ENPD	----	GVGEVGNPVC	GDIMKIFLDI
521011_Mpalustris@YP_002466865	--MYS	EKVMD	HFANPRNVGT	I-EDAD	----	GIGEVGNPKC	GDIMKIYLKI
323259_Mhungatei@YP_503638	--MYS	EKVMD	HFANPRNVGT	I-PDAD	----	GVGEVGNPAC	GDIMRIFLTV
547558_Mmahii@YP_003541558	-MYS	EKVME	HFANPNVGE	M-EDAD	----	GVGEVGNPAC	GDIMKIYLKI
644295_Mevestigatum@YP_003727500	MAMYS	KKVMD	HFANPRNVGT	M-ENPD	----	GVGEVGNPKC	GDIMRMYLKI
351627_Csaccharolyticum@YP_001181022	--MYS	EKVL	HFANPRNVGT	I-EDAD	----	GVGEVGNPKC	GDIMKMYLKI
521460_Cbescii@YP_002573580	--MYS	EKVL	HFANPRNVGT	I-ENAD	----	GVGEVGNPKC	GDIMKMYLKI
632292_Chydrothermalis@YP_003992133	--MYS	EKVL	HFANPRNVGT	I-ENAD	----	GVGEVGNPKC	GDIMKMYLKI
632348_Ckronotskyensis@YP_004023692	--MYS	EKVL	HFANPRNVGT	I-ENAD	----	GVGEVGNPKC	GDIMKMYLKI
632335_Ckristjanssonii@YP_004026829	--MYS	EKVL	HFANPRNVGT	I-ENAD	----	GVGEVGNPKC	GDIMKMYLKI
632516_Clactoaceticus@YP_004798736	--MYS	EKVL	HFANPRNVGT	I-ENAD	----	GVGEVGNPKC	GDIMKMYLKI
608506_Cobsidiansis@YP_003840166	--MYS	EKVL	HFANPRNVGT	I-ENAD	----	GVGEVGNPKC	GDIMKVIYLKI
632518_Cowensensis@YP_004002802	--MYS	EKVL	HFANPRNVGT	I-ENAD	----	GVGEVGNPKC	GDIMKMYLKI
1121335_[stercorarium@YP_007372524	-MYS	EKVMD	HFANPRNVGT	I-EDAD	----	GVGEVGNPKC	GDIMKMYLKI
1121335_[stercorarium@YP_007678972	-MYS	EKVMD	HFANPRNVGT	I-EDAD	----	GVGEVGNPKC	GDIMKMYLKI
755731_Csp@YP_005148252	--MYS	EKVMD	HFANPRNVGT	I-EDAN	----	GVGEVGNPKC	GDIMKMYLKI
394503_Ccellulolyticum@YP_002506259	--MYS	EKVMD	HFANPRNVGT	I-EDAN	----	GVGEVGNPKC	GDIMKMYLKI
720554_[clariflavum@YP_005046370	--MYS	EKVMD	HFANPRNVGT	I-ENAD	----	GVGEVGNAC	GDIMKIYLKI

203119_Rthermocellum@YP_001037149	-MMSYSEKVM	HFVNPRNVGE	I-ENAD----	GVGEVGNAC	GDIMKMYLKI	
642492_Clentocellum@YP_004309737	--MYSEKVM	HFVNPRNVGE	I-ENAS----	GVGTVGNAC	GDIMKVYLQI	
1384484_Aequolifaciens@YP_008663926	AMNYS	DKVME	HFVNPRNVGE	I-ENAS----	GCGTVGNAC	GDIMRVYLDI
515619_Erectale@YP_002936246	--MAYSEKVM	HFVNPRNVGE	M-ENPS----	GVGTVGNAC	GDIMRMYLDI	
718255_Rintestinalis@YP_007780168	--MYSEKVM	HFVNPRNVGE	M-ENPS----	GVGTVGNAC	GDIMRMYLDI	
657315_Rintestinalis@YP_007830593	--MYSEKVM	HFVNPRNVGE	M-ENPS----	GVGTVGNAC	GDIMRMYLDI	
357809_Lphytoferlytan@YP_001560003	--MYTEKVM	HFQHPNVGE	L-ENAS----	GVGTVGNAC	GDIMRMYLDI	
610130_[saccharolyticu@YP_003823446	--MYTEKVM	HFQHPNVGE	I-DNPS----	GMGTVGNAC	GDIMRIYLDI	
717608_[cf@YP_007849106	--MYSEKVM	HFQHPNVGE	I-ENPS----	GMGTVGNAC	GDIMRIYLDI	
245012_bproducing@YP_007810477	--MYSEKVM	HFQHPNVGE	I-ENPS----	GMGTVGNAC	GDIMRIYLDI	
657313_Rtorques@YP_007786815	--MYTEKVM	HFQHPNVGE	I-ENAS----	GVGTVGNAC	GDIMRIYLDI	
245018_bproducing@YP_007788847	--MYSEKVM	HFQHPNVGE	I-ENAS----	GVGTVGNAC	GDIMRIYLDI	
585394_Rhominis@YP_004837975	--MYSEKVM	HFQHPNVGE	I-EDAS----	GVGTVGNAC	GDIMRMYLDI	
1054217_Tarchaeon@YP_007688600	DGVYS	DKVVD	HFVNPRNVGE	I-ENAS----	GVGTVGNAC	GDIMRIFLDI
657323_Rsp@YP_007784833	--MYSEKVM	HFQHPNVGE	I-ENAS----	GVGTVGNAC	GDIMRIFLDI	
657314_Robeum@YP_007804234	--MYSEKVM	HFQHPNVGE	I-EDAS----	GVGTVGNAC	GDIMRMFLDI	
717962_Ccatus@YP_007770008	--MYSEKVM	HFQHPNVGE	I-ENAS----	GVGTVGNAC	GDIMRIYFDI	
552811_Dlykanthroporep@YP_003758020	PASYS	EQVIE	HFVNPRNVGE	L-ENPD----	GVGRVGNPVC	GDVMEIYIKV
246194_Chydrogenofoma@YP_361011	-MMSYSEKVM	HFVNPRNVGE	I-PDAD----	GVGEVGNPSC	GDIMRIYIKV	
696281_Druminis@YP_004546667	--MYSEKVM	HFQHPNVGE	I-ENAD----	GVGTVGNPSC	GDIMKISLKI	
868595_Dcarboxydivoran@YP_004497987	--MYSEKVM	HFVNPRNVGE	I-ENPD----	GVGOVGNPSC	GDIMKISLKI	
349161_Dreducens@YP_001112128	--MYTEKVM	HFVNPRNVGE	I-ENAD----	GIGOVGNPSC	GDIMKISLKI	
634498_Mruminantium@YP_003424309	--MYS	DKVME	HFVNPRNVGE	I-ENAS----	GEGTVGNPVC	GDLMTIYIDV
406327_Wmannielii@YP_001322697	--MYSEKVM	HFVNPRNVGE	I-ENPS----	GVGTVGNPSC	GDLMTIYIYV	
679901_Mzhilinae@YP_004616912	--MYS	KKVMD	HFVNPRNVGE	I-EDAD----	GVGEVGNPAC	GDMMTIYIKV
224719_Msp@YP_008075510	MEEYT	DKVLD	HFVNPRNVGE	I-EDAS----	GEATVGNPVC	GDLMTIYIDV
339860_Mstadthanae@YP_448034	-MOYS	DKVVD	HYTNPRNTGV	I-KNPD----	GEGTVGNPVC	GDIMTIYIKV
1295009_CMethanomassili@YP_008071572	-MOY	GPEVM	NIANPRNSGV	M-KDAD----	GVGOVGNPEC	DDVTIYIYIKV
420247_Msmithii@YP_001272836	--MYSEKVM	HFVNPRNVGE	M-ENPD----	GVGTVGNPVC	GDLMTIYIKV	
1041930_Mconradii@YP_005380864	-MMSY	PKVMQ	HFVNPRNVGE	I-SDAD----	GVGEVGNPVC	GDMMTIYIKV
304371_Mpaludicola@YP_003355464	-MMSY	PKVMQ	HFVNPRNVGE	I-PDAD----	GVGEVGNPVC	GDLMTIYIKV
1379702_Msp@YP_008915990	--MYSEKVM	HFVNPRNVGE	I-EDAS----	GVGTVGNPVC	GDLMTIYIKV	
351160_Marvoryzae@YP_686139	--MYS	PKVMT	HFVNPRNVGE	I-PDAD----	GVGTVGNPVC	GDMMTIYIKV
990316_Mconcilii@YP_004384883	QIGY	NETVMD	HFVNPRNVGE	I-ENPD----	GVGTVGNPVC	GDLMEIYIKV
521011_Mpalustris@YP_002466708	QIGY	TEKVM	HFVNPRNVGE	V-ADPD----	GVGOVGNPVC	GDLMEIYIKV
1201294_Mbourgensis@YP_006544991	QIGYS	QKVM	HFVNPRNVGE	I-ENPD----	GVGTVGNPVC	GDLMEIYIKV
368407_Mmarisnigri@YP_001048051	QIGYS	QKVM	HFVNPRNVGE	I-ENPD----	GVGTVGNPVC	GDLMEIYIKV
635013_Tpotens@YP_003640662	--MYNEKVM	HFVNPRNVGE	I-EEAS----	GIGEVGNPVC	GDIMRISIKV	
457570_Nthermophilus@YP_001916489	--MYNEKVM	HFQHPNVGE	V-ESPD----	GVGEVGNPVC	GDIMRISIKV	
574087_Aarabaticum@YP_003827335	--MYS	DKVMD	HFVNPRNVGE	I-EDAD----	GVGEVGNPVC	GDIMKMYIKV
748449_Hhalobius@YP_007315822	MKDYS	DEVMD	HFVNPRNVGE	I-EEAD----	GVGOVGNPVC	GDIMKMYIKV
338963_Pcarbinolicus@YP_006717600	--MYS	DKVID	HFVNPRNVGE	I-ENAD----	GVGEVGNPVC	GDIMKMYIKV
498761_Hmodesticaldum@YP_001680434	--MYTEKVM	HFVNPRNVGE	I-ENAS----	GVGEVGNAC	GDIMRIYLDI	
768704_Dmeridiei@YP_006620851	--MYTEKVM	HFVNPRNVGE	L-ENAD----	GVGEVGNAC	GDIMRIYLDI	
768706_Dorientis@YP_004969159	--MYTEKVM	HFVNPRNVGE	I-DNAD----	GVGEVGNAC	GDIMRIYLDI	
1147129_Dsp@YP_006909410	--MYSEKVM	HFVNPRNVGE	I-ENAN----	GVGOVGNAC	GDIMRISMVV	
138119_Dhafniense@YP_518658	SDMYT	EKVM	HFVNPRNVGE	I-EDAN----	GVGEVGNAC	GDIMRIYLDI
645991_Sglycolicus@YP_004266248	--MYS	DKVLD	HFVNPRNVGE	L-ENAN----	GVGTVGNAC	GDIMQIFLDI
646529_Dacidiphilus@YP_006467680	--MYTEKVM	HFVNPRNVGE	I-ENAD----	GVGEVGNAC	GDIMRIYLDI	
272564_Dhafniense@YP_002460033	--MYTEKVM	HFVNPRNVGE	I-EDAN----	GVGEVGNAC	GDIMRIYLDI	
756499_Ddehalogenans@YP_006431093	--MYTEKVM	HFVNPRNVGE	I-ENPD----	GVGEVGNAC	GDIMRIYLDI	
871963_Ddichloroelimin@YP_007221311	--MYSEKVM	HFVNPRNVGE	I-ENAD----	GVGEVGNAC	GDIMRIYLDI	
767817_Dgibsoniae@YP_007945765	--MYTEKVM	HFVNPRNVGE	I-SDAN----	GVGOVGNPVC	GDIMKIYIKV	
485916_Dacetoxidans@YP_003191710	--MYSEKVM	HFVNPRNVGE	I-ENAN----	GIGOVGNPVC	GDIMKIYIKV	
555079_Toceani@YP_003825515	--MYNEKVM	HFVNPRNVGE	I-PDAD----	GIGEVGNPVC	GDMMTIYIKV	
349307_Mthermophila@YP_843171	QIGYS	KKVME	HFVNPRNVGE	I-DDPD----	GVGTVGNPVC	GDLMEIYIKV
760568_Dkuznetsovii@YP_004517387	--MYS	EKVM	HFVNPRNVGE	I-PDAD----	GVGOVGNPVC	GDIMKIYIKV
373903_Horeni@YP_002508640	--MYSEKVM	HFVNPRNVGE	I-KDAD----	AVGEVGNPVC	GDIMKIYIKV	
370438_Pthermopropioni@YP_001211605	--MYS	EKVM	HFVNPRNVGE	I-PDAD----	GVGEVGNPVC	GDIMKIYIKV
264732_Mthermoacetica@YP_430496	--MYSEKVM	HFVNPRNVGE	I-ENAD----	GVGOVGNPVC	GDIMRIYIKV	
96561_Doleovorans@YP_001528642	-MIYS	KTVM	HFVNPRNVGE	I-ENAA----	GVGEVGNPVC	GDMMTIYLDI
471821_uTermite@YP_001956213	MAFYS	ERVMD	HFVNPRNVGE	I-KDAD----	GIGEVGNPVC	GDMMTIYIKV
429009_Adegensii@YP_003238425	--MYS	AKVME	HFVNPRNVGE	I-EDAD----	GVGEVGNPVC	GDVMTIYIKV
706587_Dtiedjei@YP_006449617	--MYS	DKVMD	HFVNPRNVGE	I-PDAD----	GVGEVGNPVC	GDVMTIYIKV
589924_Fplacidus@YP_003435557	--MYS	EKVM	HFVNPRNVGE	I-EDAD----	GVGTVGNPVC	GDMMTIYIKV
224325_Afulgidus@NP_069024	--MYS	DKVMD	HFQHPNVGE	I-EDAD----	GVGTVGNPVC	GDLMTIYIKV
224325_Afulgidus@NP_069399	--MYS	DKVMD	HFQHPNVGE	I-EDAD----	GVGTVGNPVC	GDLMTIYIKV
416591_Tlettingae@YP_001470347	MLKY	TELVD	HFVNPRNVGE	I-ENAD----	AEATEGS	GDIMTIYIKV
688269_Tthermarum@YP_004660083	MLKY	TELVD	HFVNPRNVGE	M-EDAD----	VTATEGS	GDIMTIYIKV
374847_CKorarchaeum@YP_001737319	PLPY	TPRVLE	LFVNPRNVGE	I-DDAD----	AFVAGS	GDVMTIYIKV
583356_Iaggregans@YP_003860035	PLPYS	PKVLE	IFVNPRNVGE	L-ENAT----	VVESAGS	GDVMTIYIKV
272947_Prowazekii@NP_220862	-MAYS	SKVID	HYENPRNVGS	L-DKDKK-NV	GTGLVGNPVC	GDVMTIYIKV
1282356_Ppoe@YP_007398800	-MAYS	EKVID	HYENPRNVGS	M-NAEDP-DV	GTGLVGNPVC	GDVMTIYIKV
994484_Pbrassicacearum@YP_004352099	-MAYS	EKVID	HYENPRNVGS	M-DAQDP-DV	GTGLVGNPVC	GDVMTIYIKV
882944_Languillarum@YP_008488748	-MAYS	EKVID	HYENPRNVGS	F-DKEDP-TI	GTGLVGNPVC	GDVMTIYIKV
1167634_Axylosoxidans@YP_008032542	-MAYS	SKVLD	HYENPRNVGS	F-DKSDS-SV	GTGLVGNPVC	GDVMTIYIKV
257311_Bparapertussis@NP_884287	-MAYS	SKVLD	HYENPRNVGS	F-DKSDS-SV	GTGLVGNPVC	GDVMTIYIKV
1017264_Bpertussis@YP_005589900	-MAYS	SKVLD	HYENPRNVGS	F-DKSDS-SV	GTGLVGNPVC	GDVMTIYIKV
284812_Spome@NP_592967	RRMYH	KNVLD	HYENPRNVGS	L-PKGDV-DV	GIGLVGNPVC	GDVMTIYIKV
559292_Scerevisiae@NP_014869	KRLYH	PKVID	HYENPRNVGS	M-DKSLA-NV	GTGLVGNPVC	GDVMTIYIKV
559292_Scerevisiae@NP_015190	KRLYH	PKVIE	HYENPRNVGS	L-DKSLA-NV	GTGLVGNPVC	GDVMTIYIKV
9606_Hsapiens@NP_998760	ARLYH	KKVVD	HYENPRNVGS	L-DKTSK-NV	GTGLVGNPVC	GDVMTIYIKV
9606_Hsapiens@NP_055116	SVDL	STQVVD	HYENPRNVGS	L-DKTSK-NV	GTGLVGNPVC	GDVMTIYIKV
3702_Athaliana@NP_193953	LRTYH	ENVID	HYENPRNVGS	F-DKNDP-NV	GTGLVGNPVC	GDVMTIYIKV
3702_Athaliana@NP_192317	SRLYH	PNVID	HYENPRNVGS	F-DKNDP-NV	GTGLVGNPVC	GDVMTIYIKV
3702_Athaliana@NP_186751	RRLYH	ENVID	HYENPRNVGS	F-DKNDP-NV	GTGLVGNPVC	GDVMTIYIKV
7227_Dmelanogaster@NP_649840	VALYH	ENVVE	HYENPRNVGS	L-DKNDV-TV	GTGLVGNPVC	GDVMTIYIKV
6239_Celegans@NP_502658	VALYH	EKVID	HYENPRNVGS	L-DKNDP-SV	GTGLVGNPVC	GDVMTIYIKV

243233_Mcapsulatus@YP_112782	N-E-E---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTVDQALAIK
458817_Shalfaxensis@YP_001673798	D-D-N---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTVAEALAIK
398579_Spealeana@YP_001501349	D-D-N---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTVAEALAIK
557598_Lhongkongensis@YP_002796852	N-E-N---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEALAIK
521006_Ngonorrhoeae@YP_002001906	N-D-E---G	--IIEDAKFK	TYGCGSAIAS	SSLITEWVKG	KSLDDALAIK
489653_Nlactamica@YP_004048810	N-D-E---G	--IIEDAKFK	TYGCGSAIAS	SSLITEWVKG	KSLDDALAIK
935589_Nmeningitidis@YP_005903962	N-D-E---G	--IIEDAKFK	TYGCGSAIAS	SSLITEWVKG	KSLDDALAIK
395495_Lcholodnii@YP_001790394	N-PLT---G	--MIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQALAIK
999541_Bgladioli@YP_004361365	G-S-D---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQALAIK
983917_Rgelatinosus@YP_005439140	DPS-T---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLEQALAIK
1416914_Bpnomenus@YP_008837319	N-E-A---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQALAIK
1380774_Psp@YP_008881415	N-E-A---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQALAIK
1249661_Bthailandensis@YP_007917844	G-E-N---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEALAIK
320388_Bmallei@YP_993528	G-A-D---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEALAIK
536230_Bpseudomallei@YP_002897469	G-A-D---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEALAIK
395019_Bmultivorans@YP_001579332	G-A-D---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEALAIK
626418_Bglumae@YP_002912250	G-T-D---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEALAIK
365044_Pnaphthalenivor@YP_981803	N-A-E---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVRG	RTLDEALAIK
266265_Bxenovorans@YP_553871	N-E-E---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVRG	RTLDEALAIR
269482_Bvietnamiensis@YP_001115172	N-A-D---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVRG	RTLDEALAIK
583345_Mmobilis@YP_003049105	N-D-S---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWLKG	RTIEEAYAIK
666681_Mversatilis@YP_003674921	N-D-S---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWLKG	RTIEEAYAIK
391038_Bphymatum@YP_001857685	G-A-D---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEALSIIK
398577_Bambifaria@YP_001808732	G-A-D---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEALSIIK
269482_Bvietnamiensis@YP_001120041	G-A-D---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEALSIIK
406425_Bcenocapacia@YP_001765425	G-A-D---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEALSIIK
1009846_Bcepacia@YP_006615433	G-A-D---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEALSIIK
482957_Blata@YP_369669	G-A-D---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEALSIIK
748280_Psp@YP_004848592	N-E-N---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEAMSIIK
1229205_Bphenoliruptrix@YP_006834626	G-A-D---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEAMSIIK
1163617_Sdenitrificans@YP_008546117	N-K-D---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEALTIK
266265_Bxenovorans@YP_559453	G-A-D---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQAMSIIK
398527_Bphytofirmans@YP_001896197	G-A-D---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQAMSIIK
375286_Bjsp@YP_001352943	G-A-D---G	--VIQDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQAMSIIK
204773_Harsenicoxydans@YP_001100494	G-A-D---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQALSIIK
580332_Slithotrophicus@YP_003524869	G-K-D---G	--LIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTVDQALAIK
159087_Daromatica@YP_285167	N-K-S---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTVDQALSIIK
882378_Brhizoxinica@YP_004029636	G-A-D---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQALSIIK
85643_Tsp@YP_002355840	G-K-D---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQALDIK
757424_Hseropedicae@YP_003776230	D-H-N---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWLKG	RTLDDALDIK
522306_Caccumulibacter@YP_003167247	G-K-G---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTIDQALDIK
76114_Aaromaticum@YP_160687	G-K-D---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTVDQALEIK
381666_Reutropha@YP_725668	N-E-A---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTVDQALEIK
977880_Ctaiwanensis@YP_002005171	N-E-A---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTVDQALEIK
1042878_Cnecator@YP_004684939	N-E-A---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTVDQALEIK
266264_Cmetallidurans@YP_583181	N-E-A---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTVDQALEIK
395494_Gcapsiferriiform@YP_003846450	G-K-D---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTVDQALQIK
859655_Rsolanacearum@YP_005996961	N-E-O---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQALEIR
402626_Rpickettii@YP_001898467	N-E-O---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQALEIR
543913_bproteobacteriu@YP_007502653	N-D-O---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQALEIR
62928_Asp@YP_933519	G-K-D---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQALEIK
640081_Dsuillum@YP_005028573	N-K-E---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KSLDQALEIK
452638_Pnecessarius@YP_001797351	N-D-O---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQAFEIK
292415_Tdenitrificans@YP_314923	G-K-D---G	--LIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQAMEIK
265072_Mflagellatus@YP_544916	N-D-O---G	--IIEDAKFK	TYGCGSAIAS	SSLVTELIK	SSLVTELIK
582744_Mglucosetrophus@YP_003051619	N-E-A---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWIKG	KTLDQVMEIK
887061_Msp@YP_004040241	N-E-A---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWIKG	KTLDQVMEIK
891398_CTremblaya@YP_004707015	R---H---G	--MVDEVRFQ	TYGCGSARAA	SSLVTEWIKG	RPLEEALVIR
426114_Tarsenitoxydans@YP_003623866	N-D-O---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQALEIR
75379_Tintermedia@YP_003642782	N-D-O---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQALEIR
937774_Tequigenitalis@YP_004130301	N-D-S---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KSLDQAMDIIK
1008459_Tasinigenitalis@YP_004874474	N-D-S---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLDQAMDIIK
634503_Eictaluri@YP_002934567	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAAEIK
718251_Etarda@YP_005700147	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAAEIK
259536_Parcticus@YP_264760	D-D-N---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWLKG	KSLDQAGEIK
335284_Pcryohalolentis@YP_580918	D-D-N---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWLKG	KSLDQAGEIK
571800_Psp@YP_008163576	N-D-N---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWLKG	KSLDQAGEIK
420662_Mpetroleiphilum@YP_001021452	NPA-T---G	--LIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KSLDEALTIK
243365_Cviolaceum@NP_900763	G-A-D---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KSLDEALAIK
1208919_CKinetoplastiba@YP_007459239	N-D-D---G	--FIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KSIDQALSIR
983545_Gsp@YP_004435367	G-A-T---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KSIDDAVKIS
342610_Patlantica@YP_660819	G-A-N---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KSIDDAVKIS
743299_Aferriivorans@YP_004783591	N-G-O---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEAMTIK
243159_Aferrooxidans@YP_002425162	N-G-O---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEAMTIK
1005048_Cfungivorans@YP_004753777	G-A-D---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQAMSIIK
669502_Cproffftella@YP_008343646	N-K-N---G	--VITDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEAMSIIK
757424_Hseropedicae@YP_003776535	G-A-D---G	--VIQDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEALSIIK
395495_Lcholodnii@YP_001790080	DPA-T---G	--KIADARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEALTIK
257310_Bbronchiseptica@NP_888820	N-E-A---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEAMNIR
990288_Acaldus@YP_004748177	N-A-Q---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEAMTIK
990288_Acaldus@YP_004748110	N-E-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEALTIK
983917_Rgelatinosus@YP_005436383	DPS-T---G	--LIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQALTIK
360910_Bavium@YP_786035	N-S-E---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQALSIR
1036672_Akashmirensis@YP_006379415	N-K-E---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQALDIR
340100_Bpetrii@YP_001631386	S-E-S---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDEALDIR
523791_Kkorensis@YP_003146685	N-E-O---G	--IIEDAKFK	TYGCGSAIAS	SSLITEWVKG	KTVDQALTIK
156889_Mmarinus@YP_866958	D-D-N---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWIKG	KTIDEALTIK

404589_Asp@YP_001377835	N-G-E---G	--VIEDAKFK	TFGCGSAIAS	SSLVTEWVKG	RTVDEALTIK
290397_Adehalogenans@YP_463806	S-D-D---G	--IIEDAKFK	TFGCGSAIAS	SSLVTEWVKG	RTVVEEALTIK
447217_Asp@YP_002132996	S-D-D---G	--VIEDAKFK	TFGCGSAIAS	SSLVTEWVKG	RTVVEEALTIK
455488_Adehalogenans@YP_002491042	S-D-D---G	--VIEDAKFK	TFGCGSAIAS	SSLVTEWVKG	RTVVEEALTIK
378806_Saurantiaca@YP_003955403	T-D-E---G	--VIEDAKFK	TFGCGSAIAS	SSLVTEWVKG	KTVDQAMTIS
246197_Mxanthus@YP_633158	S-E-D---G	--LIEDARFK	TFGCGSAIAS	SSLVTEWVKG	KTVDQAMTIS
483219_Mfulvus@YP_004669542	S-E-D---G	--LIEDARFK	TFGCGSAIAS	SSLVTEWVKG	KTVDQAMTIS
1144275_Ccoralloides@YP_005368444	S-D-T---G	--VIEDARFK	TFGCGSAIAS	SSLVTEWVKG	KTVDQAMTIS
1278073_Mstipitatus@YP_007362455	S-D-D---G	--LIEDARFK	TFGCGSAIAS	SSLVTEWVKG	KTVDQAMTIS
448385_Scellulosum@YP_001617979	G-E-G---G	--VIEDAKFK	TFGCGSAIAS	SSLATEWLKG	KTIDEAETIK
399739_Pmendocina@YP_001188990	N-E-S---G	--VIEDAKFK	TYGCGSAIAS	SSLATEWMKG	KTLDDEAESIK
1294143_Pdenitrificans@YP_007659193	N-E-O---G	--VIEDAKFK	TYGCGSAIAS	SSLATEWMKG	KTLDDEAESIK
208964_Paeruginosa@NP_252502	N-E-O---G	--VIEDAKFK	TYGCGSAIAS	SSLATEWMKG	KTLDDEAESIK
322710_Avinelandii@YP_002801150	N-E-O---G	--IIEDAKFK	TYGCGSAIAS	SSLATEWMKG	RTLEEAETIK
644801_Pstutzeri@YP_007239445	N-E-O---G	--VIEDAKFK	TYGCGSAIAS	SSLATEWMKG	KTLEEAETIK
1207075_Psp@YP_007027941	N-D-A---G	--IIEDAKFK	TYGCGSAIAS	SSLATEWMKG	KTLDDEAETIK
1114970_Pfluorescens@YP_005206437	N-E-O---G	--IIEDAKFK	TYGCGSAIAS	SSLATEWMKG	KTLDDEAETIK
220664_Pprotogens@YP_262044	N-E-O---G	--IIEDAKFK	TYGCGSAIAS	SSLATEWMKG	KTLDDEAETIK
351746_Pputida@YP_001266219	N-E-O---G	--VIEDAKFK	TYGCGSAIAS	SSLATEWMKG	KTLDDEAETIK
1435058_Pmonteilii@YP_008958359	N-E-O---G	--VIEDAKFK	TYGCGSAIAS	SSLATEWMKG	KTLDDEAETIK
743720_Pfulva@YP_004475358	N-E-O---G	--VIEDAKFK	TYGCGSAIAS	SSLATEWMKG	KTLDDEAETIK
264730_Psyringae@YP_273568	N-E-O---G	--VIEDAKFK	TYGCGSAIAS	SSLATEWMKG	KTLDDEAETIK
384676_Pentomophila@YP_606728	N-E-O---G	--VIEDAKFK	TYGCGSAIAS	SSLATEWMKG	KTLDDEAETIK
1430440_Mgryphiswaldens@YP_008937260	S-B-E---G	--IIEDAKFK	TFGCGSAIAS	SSLVTEWVKG	KTLDDEAAAIK
749219_Mcatarrhalis@YP_003626770	S-D-D---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWLKG	KTLDQAAAIK
62977_Asp@YP_046090	N-N-D---G	--VIEEARFK	TYGCGSAIAS	SSLVTEWLKG	KTLDQAQAIK
436717_Aoleivorans@YP_003732380	N-D-S---G	--VIEEARFK	TYGCGSAIAS	SSLVTEWLKG	KTLDDEAQAIK
400667_Abaumannii@YP_001084660	N-D-N---G	--VIEEARFK	TYGCGSAIAS	SSLVTEWLKG	KTLDDEAQAIK
871585_Acalcoaceticus@YP_004995269	N-D-S---G	--VIEEARFK	TYGCGSAIAS	SSLVTEWLKG	KTLDDEAQAIK
511062_Osp@YP_005091814	S-E-D---G	--IIEDAKFK	TYGCGSAIAS	SSLITEWVKG	KSLDEAASIK
318167_Sfrigidimarina@YP_751106	N-A-D---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KSVDEAAAIK
326297_Samazonensis@YP_927171	N-D-A---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KSIEEAAAIK
318161_Sdenitrificans@YP_562467	S-A-D---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KSVEQAGSIK
167879_Cpsychrerythrae@YP_267876	S-D-D---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KSIEEAGEIK
637905_Sviolacea@YP_003556341	D-D-K---G	--MIQDAKFK	TYGCGSAIAS	SSLITEWVKG	KSIEEAAAIK
225849_Spiezotolerans@YP_002311055	D-D-N---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTVEEAQAIK
323850_Sloihica@YP_001094441	D-D-N---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTIEEAQAIK
425104_Ssediminis@YP_001474605	D-K-D---G	--MIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTIEEAAAIK
392500_Swoodyi@YP_001760156	D-A-D---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTIEEAAAIK
60481_Ssp@YP_737869	G-A-D---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTIEQAAAIK
211586_Soneidensis@NP_717861	G-A-D---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTIEQAAAIK
693973_Sbaltica@YP_005273706	G-A-D---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTIEQAAAIK
399804_Sputrefaciens@YP_006009782	G-A-D---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTIEQAAAIK
298386_Pprofundum@YP_128966	S-D-E---G	--IIEDAKFK	TYGCGSAIAS	SSLITEWVKG	KSLEDEAAAIK
28173_Vnigripulchritu@YP_008621944	S-B-E---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KSIDEAAAIK
1219076_Valginolyticus@YP_008537102	T-P-E---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KSVDEAAAIK
150340_Vsp@YP_003286982	T-P-E---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KSVDEAAAIK
345073_Vcholerae@YP_001216234	S-B-E---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KSIDEAAAIK
223926_Vparahaemolytic@NP_796976	T-P-E---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KSIDEAAAIK
882102_Vanguillarum@YP_004566935	T-P-E---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KSIDEAAAIK
575788_Vsplendidus@YP_002416251	S-A-E---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KSIDEAAAIK
1129794_Gpsychrophila@YP_007545568	D-K-N---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	SSIDEASTIS
196600_Vvulnificus@NP_933549	T-P-E---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KSIEEAAAIK
903510_Vfurnissii@YP_004993913	S-P-E---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KSIDEAASIK
338187_Vcampbellii@YP_001444276	T-P-E---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KSIDEAASIK
338187_Vcampbellii@YP_008526292	T-P-E---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KSIDEAASIK
314282_Psp@YP_007639631	N-K-D---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLEEAQAIT
357804_Pingrahamii@YP_942749	G-E-N---G	--LIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLEQAGTIS
326442_Phaloplanktis@YP_341160	S-A-D---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLEQAATIK
234831_Psp@YP_004067531	S-A-E---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDDEAETIK
595494_Tauensis@YP_002893203	N-E-D---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLEFAAAAIK
396588_Tsulfidiphilus@YP_002513559	N-A-E---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDDEAAAIK
396588_Tsulfidiphilus@YP_002514125	N-A-E---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDDEAAAIK
998088_Averonii@YP_004393031	S-D-E---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDDEAAGIK
380703_Ahydrophila@YP_856284	S-D-D---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDDEAAGIK
382245_Asalmonicida@YP_001142383	S-D-D---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDDEAAGIK
342108_Mmagneticum@YP_422390	S-A-E---G	--IIEDAKFK	TFGCGSAIAS	SSLVTEWVKG	KTLDDEAASIK
1245471_Presinovorans@YP_008101472	N-E-O---G	--VIEDAKFK	TYGCGSAIAS	SSLATEWMKG	KTLDDEAASIK
365044_Pnaphthalenivor@YP_982518	NPI-T---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQAASIK
296591_Psp@YP_549004	NPA-T---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDDEAASIK
232721_Asp@YP_986388	NPD-T---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDDEAASIK
535289_Aebreus@YP_002553097	NPD-T---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDDEAASIK
365046_Rtataouinensis@YP_004618947	NPA-T---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDDEAASIK
946483_CSymbiobacter@YP_008681130	SPD-T---G	--KIEDARFK	TFGCGSAIAS	SSLVTEWVKG	KTLDDEAVALR
312309_Vfischeri@YP_204001	S-P-E---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDDEAAAIK
595537_Vparadoxus@YP_004156043	NPE-T---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDDEAAAIK
316275_Asalmonicida@YP_002262235	S-P-E---G	--IIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KTLDDEAAAIK
391735_Veiseniae@YP_997138	NPO-T---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDDEAAAVK
397945_Acitrulliae@YP_970793	NPE-T---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDDEAAAIK
643561_Aavenae@YP_004235248	NPE-T---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDDEAAAIK
398578_Dacidovorans@YP_001565014	NPE-T---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDDEAAAIK
742013_Dsp@YP_004488168	NPE-T---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDDEAAAIK
338969_Aferrireducens@YP_523433	NSE-T---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDQAALAK
596154_Adenitrificans@YP_004388278	NPE-T---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDDEAAAIK
688245_Ctestosteroni@YP_003278774	NPA-T---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDDEAAAIK
1266738_Pmirabilis@YP_008398502	D-D-N---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDDEAFAIK
1124991_Mmorganii@YP_007505117	D-D-N---G	--VIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KTLDDEAFAIK
406817_Xnemotophila@YP_003713469	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK

291112_Pasymbiotica@YP_003040200	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWMKG	KSLEQAEAIK
243265_Pluminescens@NP_930506	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWMKG	KSLEQAEAIK
406818_Xbovienii@YP_003468915	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWMKG	KSLEQAEAIK
273123_Ypseudotubercul@YP_071365	N-E-A---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWMKG	KSLEQAEAIK
393305_Yenterocolitica@YP_001005390	N-E-A---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWMKG	KSLEQAEAIK
1346614_Sliquefaciens@YP_008231656	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWMKG	KSLEQAEAIK
1348660_Splymuthica@YP_008160622	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWMKG	KSLEQAEAIK
399741_Sproteamaculans@YP_001479850	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWMKG	KSLEQAEAIK
1249634_Smarcescens@YP_007345780	N-D-A---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWMKG	KSLEQAEAIK
187410_Ypestis@NP_668657	N-E-A---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWMKG	KSLEQAEAIK
1157951_Pstuartii@YP_006215182	N-D-N---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWMKG	KSLEQAEAIK
344609_Sboydii@YP_001881320	N-D-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWMKG	KSLEQAEAIK
104623_Ssp@YP_008524031	N-N-D---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
561229_Dzeae@YP_003003456	N-E-O---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
590409_Ddadantii@YP_003334610	N-E-O---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
561230_Pcaratovorum@YP_003018589	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
561231_Pwasabiae@YP_003258666	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
1166016_Psp@YP_006282128	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
218491_Patrosepticum@YP_051325	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
99287_Senterica@NP_461477	N-D-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
218493_Sbongori@YP_004731144	N-D-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
290339_Csakazakii@YP_001436836	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
693216_Cturicensis@YP_003211492	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
399742_Esp@YP_001177741	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
640513_Easburiae@YP_004829762	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
693444_Ebacterium@YP_007339349	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
290338_Ckoseri@YP_001451852	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
484021_Kpneumoniae@YP_002920722	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
637910_Crodentium@YP_003366009	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
640131_Kvariicola@YP_003438138	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
1191061_Koxytoca@YP_006500071	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
1286170_Nornithinolytic@YP_007872306	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
511145_Ecoli@NP_417024	N-D-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
585054_Efergusonii@YP_002381825	N-D-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
198214_Sflexneri@NP_708368	N-D-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
216599_Ssonnei@YP_005457544	N-D-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
300267_Sdysenteriae@YP_404261	N-D-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
716541_Ecloacae@YP_003614361	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
701347_Elignolyticus@YP_003940771	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
630626_Sblattae@YP_006318650	N-N-D---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
1028307_Eaerogenes@YP_004590373	N-N-E---G	--IIEDARFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
557723_Hparasuis@YP_002474707	N-E-O---G	--IIEDARFK	TYGCGSAIAS	SSLITEWVKG	KSLEQAEAIK
1005058_Ganatis@YP_004420698	N-D-E---G	--IIEDARFK	TYGCGSAIAS	SSLITEWVKG	KSLEQAEAIK
1075089_Pmultocida@YP_005176279	S-E-E---G	--IIEDAKFK	TYGCGSAIAS	SSLITEWVKG	KSLEQAEAIK
205914_Hsomnus@YP_718490	N-D-E---G	--IIEDAKFK	TYGCGSAIAS	SSLITEWVKG	KSLEQAEAIK
1171377_Btrehalosi@YP_007548422	N-D-S---G	--IIEDARFK	AYGCGSAIAS	SSLITEWVKG	KSLEQAEAIK
233412_Hducreyi@NP_873560	N-D-D---G	--IIEDARFK	AYGCGSAIAS	SSLITEWVKG	KSLEQAEAIK
416269_Apleuropneumoni@YP_001053631	N-D-O---G	--IIEDARFK	AYGCGSAIAS	SSLITEWVKG	KSLEQAEAIK
696748_Asuis@YP_006816777	N-D-O---G	--IIEDARFK	AYGCGSAIAS	SSLITEWVKG	KSLEQAEAIK
1366053_Mhaemolytica@YP_008338465	N-D-O---G	--IIEDARFK	AYGCGSAIAS	SSLITEWVKG	KSLEQAEAIK
1334187_Hinfluenzae@YP_008544790	N-D-N---G	--IIEDAKFK	TYGCGSAIAS	SSLITEWVKG	KSLEQAEAIK
634176_Aaphrophilus@YP_003007650	N-D-E---G	--IIEDAKFK	TYGCGSAIAS	SSLITEWVKG	KSLEQAEAIK
694569_Aactinomycetemc@YP_006286355	N-D-D---G	--IIEDAKFK	TYGCGSAIAS	SSLITEWVKG	KSLEQAEAIK
862965_Hparainfluenzae@YP_004822800	N-D-S---G	--IIEDAKFK	TYGCGSAIAS	SSLITEWVKG	KSLEQAEAIK
221988_Msucciniciprodu@YP_088916	N-E-E---G	--IIEDAKFK	TYGCGSAIAS	SSLITEWVKG	KSLEQAEAIK
339671_Asuccinogenes@YP_001344170	N-D-N---G	--IIEDAKFK	TYGCGSAIAS	SSLITEWVKG	KSLEQAEAIK
550540_Fbalearica@YP_003914035	S-E-G---G	--VIEDAKFK	TYGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
396595_Tsp@YP_003460082	N-D-D---G	--VIEDAKFK	TYGCGSAIAS	SSLITEWVKG	KSLEQAEAIK
413404_CRuthia@YP_903798	D-D-N---G	--VIEDAKFK	TYGCGSAIAS	SSLITEWVKG	KSLEQAEAIK
412965_Cvesicomysociu@YP_001219373	D-D-N---G	--VIEDAKFK	TYGCGSAIAS	SSLITEWVKG	KSLEQAEAIK
1208921_CKinetoplastiba@YP_007448562	N-G-D---G	--IIEDACFK	TYGCGSAIAS	SSLVTEWIKG	KSLEQAEAIK
561501_Baphidicola@YP_002468877	N-E-K---G	--IIEDACFK	TYGCGSAIAS	SSLVTEWIKG	KSLEQAEAIK
357244_Otsutsugamushi@YP_001248706	N-D-H---G	--IIEDAKFK	TFGCGSAIAS	SALVTEWIKS	KSLEQAEAIK
1003201_Rtyphi@YP_005427548	D-D-D---E	--IITDAKFK	TFGCGSAIAS	SSLVTELVKG	KSLEQAEAIK
1105111_CRickettsia@YP_005365544	D-D-D---G	--IITDAKFK	TFGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
272944_Rconorii@NP_360366	D-D-D---G	--IITDAKFK	TFGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
452659_Rrickettsii@YP_001650107	D-D-D---G	--IITDAKFK	TFGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
347255_Rafricae@YP_002845312	D-D-D---G	--IITDAKFK	TFGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
562019_Rpeacockii@YP_002916645	D-D-D---G	--IITDAKFK	TFGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
1105113_Rrhipicephali@YP_005390607	D-D-D---G	--IITDAKFK	TFGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
416276_Rmassiliae@YP_001499486	D-D-D---G	--IITDAKFK	TFGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
1105108_Rparkerii@YP_005392983	D-D-N---G	--IITDAKFK	TFGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
1105114_Rmontanensis@YP_005391246	D-D-D---G	--IITDAKFK	TFGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
1032845_Rheilongjiangen@YP_004764467	D-D-D---G	--IITDAKFK	TFGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
652620_Rjaponica@YP_004884928	D-D-D---G	--IITDAKFK	TFGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
481009_Rphilipii@YP_005300823	D-D-D---G	--IITDAKFK	TFGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
1105109_Rslovaca@YP_005426472	D-D-D---G	--IITDAKFK	TFGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
1105107_Rcanadensis@YP_005299497	D-D-N---G	--IITDAKFK	TFGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
336407_Rbellii@YP_538116	D-D-N---G	--IITDAKFK	TFGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
315456_Rfelis@YP_246860	D-D-D---G	--IITDAKFK	TFGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
293614_Rakari@YP_001493572	D-D-D---G	--IITDAKFK	TFGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
1105110_Raustralis@YP_005414962	D-D-D---G	--IITDAKFK	TFGCGSAIAS	SSLVTEWVKG	KSLEQAEAIK
434131_Nristicii@YP_003081518	D-N-N---G	--CIVDAKFK	TFGCGSAIAS	SSLATEYLIG	KSLEQAEAIK
222891_Nsennetsu@YP_506192	D-N-N---G	--CIVDAKFK	TFGCGSAIAS	SSLATEYLIG	KSLEQAEAIK
330214_CNitrospira@YP_003799619	E-N-D---T	--IV-DAKFK	TFGCGSAIAS	SSLATEWLKG	KSLEQAEAIK
984262_Sgrandis@YP_005322201	S-E-D---G	--IIQEAQFK	TFGCGSAIAS	SSLATEWLKG	KSLEQAEAIK
100901_Wendosymbiont@YP_006555868	N-D-K---G	--VIEDAKFK	TFGCGSAIAS	SSLITEMIKG	KSLEQAEAIK
66084_Wsp@YP_002727379	N-D-K---G	--VIEDAKFK	TFGCGSAIAS	SSLITEMIKG	KSLEQAEAIK

1423892_Emuris@YP_008929080	D-D-N---G	--RIIDAKFK	TFGCGAAIAA	SSLATELIK	KTIDEAQLK
574556_Acentrale@YP_003328545	D-E-N---G	--TIVDAKFK	TFGCGAAIAA	SSLATERIK	KTIFEEACMLK
320483_Amarginal@YP_002563600	D-E-N---G	--TIVDAKFK	TFGCGAAIAA	SSLATERIK	KTIFEEACMLK
1184253_Aphagocytophilu@YP_008332775	D-E-N---G	--KIVDAKFK	TFGCGAAIAA	SSLATERIM	KTIDEASLLK
205920_Echaffeensis@YP_507440	D-D-N---G	--KIIDAKFK	TFGCGAAIAA	SSLATELIK	KTIDEAHLK
254945_Eruminantium@YP_180281	D-D-N---G	--KIIDAKFK	TFGCGAAIAA	SSLATELIK	KTVDEAHELK
254945_Eruminantium@YP_197308	D-D-N---G	--KIIDAKFK	TFGCGAAIAA	SSLATELIK	KTVDEAHELK
269484_Ecanis@YP_303050	D-N-N---G	--RIIDAKFK	TFGCGAAIAA	SSLATELIK	KTVDEAHLK
517418_Cthalassium@YP_001997584	D-EKT---G	--IIEDARFK	TFGCGSAIAS	SSLATEMLK	KTIDEASEIK
485917_Pheparinus@YP_003091837	D-E-N---N	--VITDAKFK	TFGCGSAIAS	SSLATEWLK	KSIDEALTID
762903_Psaltans@YP_004273747	D-E-N---N	--LITDAKFK	TFGCGSAIAS	SSLATEWLK	KTIDEAVTID
929556_Scanadensis@YP_006255074	D-E-N---N	--VITDAKFK	TFGCGSAIAS	SSLATEWLK	KTIDQALEID
760192_Hhydrossis@YP_004446110	DPA-T---S	--TIVDAKFK	TFGCGSAIAS	SSLATEWLK	KTIDQALTID
1162668_Lferrooxidans@YP_005469656	N-D-D---G	--LIEEAKFK	TFGCGSAIAS	SSLATEWVK	KTIDEALKIK
1048260_Lferriphilum@YP_006765680	N-D-A---G	--VIEEAKFK	TFGCGSAIAS	SSLATEWVK	KTVEEALQIK
240015_Acapsulatum@YP_002755573	NPE-T---G	--VIEEAKFK	TFGCGSAIAS	SSLATEWVK	KTVEEALQIK
204669_Ckoribacter@YP_589562	NPE-T---N	--IIEDAKFK	TFGCGSAIAS	SSLATEWVK	KTVDEALGIK
1198114_Gtundricola@YP_004219465	NPE-T---O	--VIEDAKFK	TFGCGSAIAS	SSLATEWVK	KTVAEALQIS
926566_Troseus@YP_006423699	NPD-T---O	--VIEDAKFK	TFGCGSAIAS	SSLATEWVK	KTVAEALAIS
401053_Tsaanensis@YP_04180969	NPE-T---O	--IIEDAKFK	TFGCGSAIAS	SSLATEWVK	KTVAEALAIS
682795_Gmallensis@YP_005055878	NPE-T---O	--VIEDAKFK	TFGCGSAIAS	SSLATEWVK	KTVAEALTIS
696127_Cmidichloria@YP_004679282	N-PKT---O	--IIEDVKFK	TFGCLSAIAS	SSLATERVK	KTLEEAARIK
871271_Czindieria@YP_003878048	Y---K---G	--IINKIRFK	TYGCGSAIAS	SYLTTKIIK	RTIEETLLIK
657324_Bfibrisolvans@YP_007819038	N---D---E	--IIEDVKFE	TFGCGSAIAS	SSLATELIM	KPVSEALQLT
768670_Cnitroreducens@YP_004051749	D---D---N	--GVIDVKFK	TFGCGAAIAS	SSMATELLK	KTVEEVLELT
717231_Fsinusarabici@YP_004603876	N---D---D	--GVVEDVKFK	TFGCGAAIAS	SSMATELLK	KTVEEILELT
639282_Ddesulfuricans@YP_003496772	N---D---E	--GIVEDVKFK	TFGCGAAIAS	SSMATELIK	KRVEDVLRIT
522772_Dacetiphilus@YP_003503972	N---D---D	--MIVEDVKFK	TFGCGAAIAS	SSMATELMIG	KSVSEALQLT
693746_Ovalericigenes@YP_004880314	D---K---D	TCITIRDVKFN	TFGCGSAIAT	SSMATEMIK	KPVKDALALS
657322_Rbromii@YP_007781362	D---N---D	--IITDVKFK	TFGCGAAIAT	SSMATELIK	KSINDALKLT
657322_Fprausnitzii@YP_007799942	E---N---N	--VIVDVKFL	TFGCGAAIAT	SSMATELIK	KTVDEALKLT
213810_Rchampanellensii@YP_007828576	Q---N---G	--IITDVKFK	TFGCGAAVAT	SSMATELIK	KPIFEALQLT
657319_[siraeum@YP_007775950	E---D---N	--TIKDVKFK	TFGCGAAIAT	SSIMATEMIK	KPLSEALKLT
293826_Ametalliredigen@YP_001320267	D---N---D	--MITDVKFK	TFGCGSAIAT	SSMATEMIQ	KTVKEVLQLT
350688_Aorelandii@YP_001513205	E---N---D	--RIVDVKFK	TFGCGSAIAT	SSMATEMIK	KTVKEALQLT
546269_Falocis@YP_005054244	K---D---N	--RIEDVKFK	TYGCGSAIAS	SSMATEMIK	KTIDEVLEVT
1511_[sticklandii@YP_003936518	E---D---N	--VIDVKFK	TYGCGSAIAS	SSMATEMIK	KTVQEALNLT
699034_Pdifficile@YP_006198328	D---G---D	--VIKDVKFK	TFGCGSAIAS	SSMATEMIK	KTIKDALELT
1128398_[acidurici@YP_006788189	D---N---D	--VITDVKFK	TFGCGSAIAS	SSMATEMIK	KTIKEALEFT
572544_Ipolytropus@YP_003967871	E---N---D	--IITDVKFR	TFGCASAIAT	SSIISTEMILN	KNVSEALQLT
469604_Fnucleatum@YP_008477745	D---N---D	--IITDVKFR	TFGCASAIAS	SSIISTDMIIG	KTVEDALKVT
580340_Tlienii@YP_004932350	E---N---D	--VITDIKFE	TFGCASAIAS	SSMVTEMVK	KTLDALKIT
891968_Amobile@YP_006444325	K---D---D	--RIVDVKFE	TFGCAAAIAT	SSMVTEMVK	KTLDALKVT
525903_Tacidaminovorans@YP_003316727	R---D---G	--KIEDVRFQ	TFGCAAAIAT	SSMATEMIK	KTIDEALNVT
697281_Maustraliensis@YP_004463371	D---G---D	--IITDVKFQ	TFGCAAAIAT	SSMATELIK	KTLDALAIT
309799_Dthermophilum@YP_002251521	E---N---G	--VIVDVKFK	TLGCGAAIAT	SSIATEMIK	KTIEEALKIT
368407_Mmarisnigri@YP_001047821	E---G---D	--RIVDARFQ	TFGCAAAIAS	SSMATEMIL	MTIAEAWNLS
903814_Elimosum@YP_003961665	S---D---D	--GIVEDASFQ	TFGCGAAIAT	SSMATEMIK	KTIEEAAALK
931626_Awoodii@YP_005268656	N---D---D	--GVIDASFQ	TFGCGAAVAS	SSMATEMIK	KTIEEAGKFK
410358_Mlabreanum@YP_001029708	E---N---D	--IIVDAKFK	TFGCGAAIAS	SSMATEMIK	KTLEEAWTLS
679926_Mpetrolearius@YP_003895855	R---D---D	--IIEDVKFK	TFGCGAAIAS	SSMATEMIK	KTVKEAWDLS
86416_Cpasteurianum@YP_007940944	E---D---N	--KIEDVKFK	TFGCGSAIAS	SSMATELIK	KTIEEAWDLT
929506_Cbotulinum@YP_004396224	E---D---N	--IIKDVKFK	TFGCGSAIAS	SSMATELVK	KTLEDAWKLT
386415_Cnovyi@YP_878355	E---D---N	--IIKDVKFK	TFGCGSAIAS	SSMATELVK	KTLEEAWKLT
748727_Clungdahlii@YP_003779382	E---D---D	--VIKDVKFK	TFGCGSAIAS	SSMATELIK	KTLEDAWELT
1341692_Ccautoethanogenu@YP_008700753	E---D---D	--VIKDVKFK	TFGCGSAIAS	SSMATELIK	KTLEDAWELT
747365_Tnarugense@YP_004437867	K---D---N	--IIEDVKFE	TYGCASAIAS	SSIASELIK	KTLEEAWKIT
651822_Ffastidiosum@YP_007827223	N---D---RN	--VIEDVKFK	TFGCASAIAS	SSMATELIK	KTIDEAWDMT
572547_Acolombiensis@YP_003553035	E---N---D	--HIVDIKFK	TFGCASAIAS	SSMATELMV	KTIEEAWNIT
212717_Ctetani@NP_781697	E---D---N	--IIKDVKFK	TFGCGSAIAS	SSMATELIK	KTLEEAWEELS
431943_Ckluveri@YP_001394709	E---D---N	--IIKDVKFK	TFGCGSAIAS	SSMATELIK	KTLEEAWSLT
573061_Ccellulovorans@YP_003843335	E---N---D	--IIVDVKFK	TFGCGSAIAS	SSMATELIK	KTLDIAWQLS
508767_Cbotulinum@YP_001920515	E---D---N	--IIKDVKFK	TFGCGSAIAS	SSMATEMIK	KTLDIAWELS
931276_Csaccharoperbut@YP_007454264	E---D---N	--IIKDVKFK	TFGCGSAIAS	SSMATELIK	KTLDIAWELT
290402_Cbeijerinckii@YP_001308237	E---D---N	--IIKDVKFK	TFGCGSAIAS	SSMATELIK	KTLDIAWELT
1345695_Csaccharobutyli@YP_008674363	E---D---N	--IIKDVKFK	TFGCGSAIAS	SSMATELIK	KTLDIAWELT
269797_Mbarkeri@YP_305925	E---D---N	--RIADVFKQ	TFGCGAAIAS	SSMATEMIK	KTLEEAWSLS
188937_Macetivorans@NP_617616	E---G---D	--RIVDVKFQ	TFGCGAAIAS	SSMATELIK	KTIKEAWELS
195103_Cperfringens@YP_696469	E---N---N	--IIVDVKFE	TYGCGSAIAS	SSMATELIK	KTVEEAWELS
593750_Mformicica@YP_007249963	E---N---N	--IITDAKFK	TFGCGAAIAS	SSMATELVK	KTLEEAWDVS
456442_Mboonei@YP_001405283	E---N---N	--IIVDAKFK	TFGCGAAIAS	SSMATELVK	KTLEEAQWLS
521011_Mpalustris@YP_002466865	R---E---N	--RIEDVKFQ	TFGCGAAVAS	SSIATELIK	KTLDIAWETT
323259_Mhungatei@YP_503638	K---D---N	--IITDVKFQ	TFGCGAAVAS	SSMATELIK	KTLEEAWEVS
547558_Mmahii@YP_003541558	E---D---N	--VIADAKFM	TFGCGAAIAS	SSMATELIK	KTLEQAWKVT
644295_Mevestigatum@YP_003727500	E---N---G	--IIOADAKFM	TFGCGAAIAS	SSMATELIK	KTLEEAQWVS
351627_Csaccharolyticu@YP_001181022	E---N---G	--IIVDAKFK	TFGCGAAVAT	SSMATEMIK	KTIEEALQIT
521460_Cbescii@YP_002573580	E---N---G	--IIVDAKFK	TFGCGAAVAT	SSMATEMIK	KTIEEALQIT
632292_Chydrothermalis@YP_003992133	E---N---G	--IIVDAKFK	TFGCGAAVAT	SSMATEMIK	KTIEEALQIT
632348_Ckronotskyensis@YP_004023692	E---N---G	--IIVDAKFK	TFGCGAAVAT	SSMATEMIK	KTIEEALQIT
632335_Ckristjanssonii@YP_004026829	E---N---G	--IIVDAKFK	TFGCGAAVAT	SSMATEMIK	KTIEEALQIT
632516_Clactoaceticus@YP_004798736	E---N---G	--IIVDAKFK	TFGCGAAVAT	SSMATEMIK	KTIEEALQIT
608506_Cobsidiansis@YP_003840166	E---N---G	--IIVDAKFK	TFGCGAAVAT	SSMATEMIK	KTIEEALQIT
632518_Cowensensis@YP_004002802	E---N---G	--IIVDAKFK	TFGCGAAVAT	SSIATEMIK	KTIEEALQIT
1121335_[stercorarium@YP_007372524	E---N---N	--VIVDAKFK	TFGCGAAVAT	SSIATELIK	KTIDEALKVT
1121335_[stercorarium@YP_007678972	E---N---N	--VIVDAKFK	TFGCGAAVAT	SSIATELIK	KTIDEALKVT
755731_Csp@YP_005148252	E---D---N	--IIVDAKFK	TFGCGAAVAT	SSMATELVK	KTVEEAMKIT
394503_Ccellulolyticu@YP_002506259	E---D---N	--IIVDAKFK	TFGCGAAVAT	SSMATELVK	KTVEEAMKIT
720554_[clariflavum@YP_005046370	E---N---D	--IINKDAKFK	TFGCGAAVAT	SSMATELVIG	KTIDEALKIT

203119_Rthermocellum@YP_001037149	E	N	D	VI	DAKFK	TF	GCGAAVAT	SS	MATELVKG	KT	IEEALKIT	
642492_Clentocellum@YP_004309737	E	D	G	II	KDAKFK	TF	GCGAAVAT	SS	MATELVIG	KT	IEEALKIT	
1384484_Aequolifaciens@YP_008663926	D	E	NN	VI	QDAKFK	TF	GCGAAIAT	SS	MATVVLVKG	KT	VQEALKVT	
515619_Erectale@YP_002936246	D	D	NG	II	QEAFFK	TF	GCGAAVAT	SS	MATELVKG	KT	IQEALEVT	
718255_Rintestinalis@YP_007780168	D	D	NG	II	QEAFFK	TF	GCGAAVAT	SS	MATELVKG	KT	IQEALEVT	
657315_Rintestinalis@YP_007830593	D	D	NG	II	QEAFFK	TF	GCGAAVAT	SS	MATELVKG	KT	IQEALEVT	
357809_Lphytofermentan@YP_001560003	D	D	NO	VI	QDVKFK	TF	GCGAAVAT	SS	MATELVKG	LT	VQEALTVT	
610130_[saccharolyticu@YP_003823446	D	D	NO	II	RDVFKF	TF	GCGAAVAT	SS	MATEVMKG	KS	VQEAMAVT	
717608_[cf@YP_007849106	D	E	NO	II	RDVFKF	TF	GCGAAVAT	SS	MATELVKG	KS	IKEAMQVT	
245012_bproducing@YP_007810477	D	E	NO	II	RDVFKF	TF	GCGAAVAT	SS	MATELVKG	KS	IKEAMQVT	
657313_Rtorques@YP_007786815	D	E	NO	II	RDVFKF	TF	GCGAAVAT	SS	MATEVMKG	KS	IQEAEMVT	
245018_bproducing@YP_007788847	D	D	NG	II	QDVKFK	TF	GCGAAVAT	SS	MATELVKG	KN	IQEALQVT	
585394_Rhominis@YP_004837975	D	E	NO	VI	RDCKFK	TF	GCGAAVAT	SS	MATELVKG	KT	IYEALQIT	
1054217_Tarchaeon@YP_007688600	D	E	NG	II	RDCKFK	TF	GCGAAIAS	SS	MATEVMKG	KS	IHEALEIT	
657323_Rsp@YP_007784833	D	D	ETH	II	KDCKFK	TF	GCGAAVAT	SS	MATELVMG	KT	IEEAMQVT	
657314_Robeum@YP_007804234	D	D	ETH	II	KDCKFK	TF	GCGAAVAT	SS	MATEVMKG	KT	IEEAMQVT	
717962_Ccatus@YP_007770008	D	E	NO	VI	RDVFKF	TF	GCGAAVAT	SS	MATELVKG	KT	IYEALEVT	
552811_Dlykanthroporep@YP_003758020	K	D	G	II	TDSSFK	TF	GCGAAIAT	SS	MVTEVMKG	KT	IKEALEIS	
246194_Chydrogenoforma@YP_361011	E	G	D	KI	TDVFKF	TF	GCGAAIAT	SS	MVTEVMKG	KT	IEEAMKIT	
696281_Druminis@YP_004546667	D	D	N	II	KDVKFK	TF	GCGAAVAT	SS	MATELVKG	KT	IEEALQIT	
868595_Dcarboxydivoran@YP_004497987	E	D	N	VI	KDVKFK	TF	GCGAAVAT	SS	MVTEVMKG	KT	IEEALQIT	
349161_Dreducens@YP_001112128	E	D	N	II	KDVKFK	TF	GCGAAVAT	SS	MVTEVMKG	KT	IEEALQIT	
634498_Mruminantium@YP_003424309	D	D	D	E	VI	QDKFK	TF	GCGAAIAT	SS	MITEIAKG	MA	VDEALKIT
406327_Mvanniellii@YP_001322697	E	D	E	II	KDVKFK	TF	GCGAAIAT	SS	MITEIAKG	KN	IIEALKIT	
679901_Mzhilinae@YP_004616912	K	D	D	II	EDVKFK	TF	GCGAAIAT	SS	MITEIAKG	KT	IEEALRIT	
224719_Msp@YP_008075510	D	D	ND	VI	RDVFKF	TF	GCGAAIAT	SS	MITEIAIG	KT	VDEAYNIT	
339860_Mstadthanae@YP_448034	D	D	DN	KL	SDVKFS	TF	GCGAAIAT	SS	MITEIAIG	MD	VDEAYNIT	
1295009_CMethanomassili@YP_008071572	K	D	D	II	TDVFKF	TF	GCGAAIAS	SS	MITEIAIG	GN	IIEALQIT	
420247_Msmithii@YP_001272836	K	D	D	VI	TDVFKF	TF	GCGAAIAT	SS	MITEIAIG	KT	IEEALQIT	
1041930_Mconradii@YP_005380864	K	D	N	VI	TDVFKF	TF	GCGAAIAT	SS	IITTEIAIG	MT	LEDAEKIG	
304371_Mpaludicola@YP_003355464	K	D	N	KL	SDVFKF	TF	GCGAAIAT	SS	IITTEIAIG	MT	LEDAEKIG	
1379702_Msp@YP_008915990	E	D	D	VI	TDVFKF	TF	GCGAAIAT	SS	MITEIAIG	KT	IEEALQIT	
351160_Marvoryzae@YP_686139	K	D	D	RI	EDVKFK	TF	GCGAAIAT	SS	MVTEVMKG	KT	IEEALQIT	
990316_Mconradii@YP_004384883	K	D	D	RI	DDVKFK	TF	GCGAAIAT	SS	MVTEVMKG	KT	IEEALQIT	
521011_Mpalustris@YP_002466708	E	K	D	VI	TDVFKF	TF	GCGAAIAT	AS	MVTEVMKG	KT	IEEALQIT	
1201294_Mbourgensis@YP_006544991	R	E	N	VI	EDIRFR	TF	GCGAAIAT	SS	MVTEVMKG	KT	IEEALQIT	
368407_Mmarisnigri@YP_001048051	K	D	N	VI	EDIRFR	TF	GCGAAIAT	SS	MVTEVMKG	KT	IEEALQIT	
635013_Tpotens@YP_003640662	E	D	N	II	KDVKFK	TF	GCGAAIAT	SS	MVTEVMKG	KT	IEEALQIT	
457570_Nthermophilus@YP_001916489	N	N	D	E	IE	EDVKFK	TF	GCGAAIAT	SS	IVTEVMKG	KN	IIEALQIT
574087_Aarabaticum@YP_003827335	E	D	D	VI	TDVFKF	TF	GCGAAIAT	SS	IITTEIAIG	KT	IEEALQIT	
748449_Hhalobius@YP_007315822	N	D	G	KI	NDVKFK	TF	GCGAAIAT	SS	IATELVKG	KS	IEEALQIT	
338963_Pcarbinolicus@YP_006717600	E	N	D	II	EDVKFK	TF	GCGAAIAS	SS	MSELVIG	KT	IQEALQIT	
498761_Hmodesticaldum@YP_001680434	E	D	N	II	KDVKFK	TF	GCGAAIAT	SS	MTELVKG	KT	IEEALQIT	
768704_Dmeridiei@YP_006620851	E	G	D	II	KDVKFK	TF	GCGAAVAT	SS	MTELVKG	KT	IEEALQIT	
768706_Dorientis@YP_004969159	E	G	D	II	KDVKFK	TF	GCGAAVAT	SS	MTELVKG	KT	IEEALQIT	
1147129_Dsp@YP_006909410	E	N	D	II	KDVKFK	TF	GCGAAVAT	SS	MTELVKG	KS	VNEALQIT	
138119_Dhafniense@YP_518658	E	G	D	II	KDVKFK	TF	GCGAAVAT	SS	MTELVKG	KS	IEEALQIT	
645991_Sglycolicus@YP_004266248	E	D	D	II	KDVKFK	TF	GCGAAVAT	SS	MTELVKG	KT	IEEAMNVT	
646529_Dacidiphilus@YP_006467680	E	G	D	II	KDVKFK	TF	GCGAAVAT	SS	MTELVKG	KT	IEEALQIT	
272564_Dhafniense@YP_002460033	E	G	D	II	KDVKFK	TF	GCGAAVAT	SS	MTELVKG	KT	IEEALQIT	
756499_Ddehalogenans@YP_006431093	D	G	D	II	KDVKFK	TF	GCGAAVAT	SS	MTELVKG	KT	IEEALQIT	
871963_Ddichloroelimin@YP_007221311	E	G	D	II	KDVKFK	TF	GCGAAVAT	SS	MTELVKG	KT	IEEALQIT	
767817_Dgibsoniae@YP_007945765	D	N	E	VI	TDVFKF	TF	GCGAAIAT	SS	MTEMAKG	KT	IEEALQIS	
485916_Dacetoxidans@YP_003191710	E	D	N	II	KDVKFK	TF	GCGAAVAT	SS	MTEMAKG	KT	IEEALQIS	
555079_Toceani@YP_003825515	K	D	D	VI	EDVKFK	TF	GCGAAIAT	SS	MTEMAKG	KT	IEEALQIS	
349307_Mthermophila@YP_843171	G	D	E	KI	EDVKFK	TF	GCGAAIAT	SS	MTEMAKG	KS	IEEALQIS	
760568_Dkuznetsovii@YP_004517387	K	D	N	II	EDVKFK	TF	GCGAAIAT	SS	MTELVKG	KT	IEEAMQVS	
373903_Horeni@YP_002508640	K	D	D	II	EDVKFK	TF	GCGAAVAT	SS	MTELVKG	KT	IEEALQIS	
370438_Pthermopropioni@YP_001211605	E	D	N	VI	KDVKFK	TF	GCGAAIAS	SS	MTEMAKG	KT	IEEALQIS	
264732_Mthermoacetica@YP_430496	E	D	G	II	KDVKFK	TF	GCGAAIAT	SS	MTELVKG	KT	IEEALQIS	
96561_Doleovorans@YP_001528642	O	D	D	RI	ADVKFK	TF	GCGAAIAT	SS	MTELVKG	KT	IEEALQIS	
471821_uTermite@YP_001956213	K	D	N	KI	EDVKFK	TF	GCGAAIAT	SS	MSEVMKG	KT	IEEALQIS	
429009_Adegensii@YP_003238425	K	E	D	RI	AEVKFK	TF	GCGAAIAT	AS	MSEVMKG	KT	IEEALQIS	
706587_Tdiedjei@YP_006449617	N	N	D	VI	EDVKFK	TF	GCGAAIAT	SS	MSEVMKG	KT	IEEALQIS	
589924_Fplacidus@YP_003435557	K	D	D	KI	VDVKFK	TF	GCGAAIAT	SS	MATELVKG	KT	IEEALQIS	
224325_Afulgidus@NP_069024	K	D	N	RI	EDVKFK	TF	GCGAAIAT	SS	MATELVKG	KT	IEEALQIS	
224325_Afulgidus@NP_069399	K	D	N	RI	EDVKFK	TF	GCGAAIAT	SS	MATELVKG	KT	IEEALQIS	
416591_Tlettingae@YP_001470347	E	D	D	RI	TDVKFK	TF	GCGAAIAT	AS	MTEVVKG	LT	IEEAKLKN	
688269_Tthermarum@YP_004660083	E	N	D	RI	VDVKFK	TF	GCGAAIAT	AS	MTEVVKG	MT	IEEAKLKN	
374847_CKorarchaeum@YP_001737319	E	D	G	VI	EDVKFK	TF	GCGAAIAT	AS	VTEVVKG	KR	IEEALQIS	
583356_Iaggregans@YP_003860035	R	D	N	VI	EDVKFK	TF	GCGAAIAT	AS	VTEVVKG	KR	IEEALQIS	
272947_Rprowazekii@NP_220862	G	D	E	II	TDVFKF	TF	GCGAAIAS	SS	IVTEVVKG	KS	VDEAKQIS	
1282356_Ppoe@YP_007398800	N	D	A	VI	EDVKFK	TF	GCGAAIAS	SS	LATEVVKG	KT	IEEALQIS	
994484_Pbrassicacearum@YP_004352099	N	E	G	II	EDVKFK	TF	GCGAAIAS	SS	LATEVVKG	KT	IEEALQIS	
882944_Languillarum@YP_008488748	T	P	E	II	EDVKFK	TF	GCGAAIAS	SS	LATEVVKG	KS	IEEALQIS	
1167634_Axylosoxidans@YP_008032542	N	E	A	VI	EDARFK	TF	GCGAAIAS	SS	LVTEVVKG	KT	IEEALQIS	
257311_Bparapertussis@NP_884287	N	E	A	VI	EDARFK	TF	GCGAAIAS	SS	LVTEVVKG	KT	IEEALQIS	
1017264_Bpertussis@YP_005589900	N	E	A	VI	EDARFK	TF	GCGAAIAS	SS	LVTEVVKG	KT	IEEALQIS	
284812_Spombe@NP_592967	N	K	D	VI	EDVKFK	TF	GCGAAIAS	SS	VTEVVKG	MT	IEEALQIS	
559292_Scerevisiae@NP_014869	N	D	S	II	ENVKFK	TF	GCGAAIAS	SS	YTEVVKG	SS	IEEALQIS	
559292_Scerevisiae@NP_015190	N	D	S	VI	EDVKFK	TF	GCGAAIAS	SS	YTEVVKG	MT	IEEALQIS	
9606_Hsapiens@NP_998760	D	E	K	KI	VDARFK	TF	GCGAAIAS	SS	LATEVVKG	KT	IEEALQIS	
9606_Hsapiens@NP_055116	D	E	K	KI	VDARFK	TF	GCGAAIAS	SS	LATEVVKG	KT	IEEALQIS	
3702_Athaliana@NP_193953	D	E	K	QI	VDARFK	TF	GCGAAIAS	SS	VATEVVKG	KT	IEEALQIS	
3702_Athaliana@NP_192317	D	E	K	QI	VDARFK	TF	GCGAAIAS	SS	VATEVVKG	KT	IEEALQIS	
3702_Athaliana@NP_186751	D	E	S	QI	VDARFK	TF	GCGAAIAS	SS	VATEVVKG	KT	IEEALQIS	
7227_Dmelanogaster@NP_649840	D	E	N	KI	VDARFK	TF	GCGAAIAS	SS	LATEVVKG	KT	IEEALQIS	
6239_Celegans@NP_502658	D	D	N	KI	IEAKFK	TF	GCGAAIAS	SS	LATEVVKG	KT	IEEALQIS	

	NSDIAEAL	-A	LPPVKIHCSI	LAEDAIRAAV	SDYKAKLQVA	DD-GYEIRKS
243233_Mcapsulatus@YP_112782	NSDIAEAL	-A	LPPVKIHCSI	LAEDAIRAAV	SDYKAKLQVA	DD-GYEIRKS
458817_Shalfaxensis@YP_001673798	NTDIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	EYKTKQSK	-----
398579_Spealeana@YP_001501349	NTDIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	DEYKTKQSK	-----
557598_Lhongkongensis@YP_002796852	NTAIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	KDYREKHGSO	E-----
521006_Ngonorrhoeae@YP_002001906	NSEIAEEL	-E	LPPVKIHCSI	LAEDAVKAAV	ADYRKRQENR	-----
489653_Nlactamica@YP_004048810	NSEIAEEL	-E	LPPVKIHCSI	LAEDAVKAAV	ADYRKRQENR	-----
935589_Nmeningitidis@YP_005903962	NSEIAEEL	-E	LPPVKIHCSI	LAEDAVKAAV	ADYRKRQENR	-----
395495_Lcholodnii@YP_001790394	NTAIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYRHRHDAH	IE-CPACSPA
999541_Bgladioli@YP_004361365	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYRKRHDAT	AE-DGCAA-
983917_Rgelatinosus@YP_005439140	NTAIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYRQRHAGP	GG-LIEERAC
1416914_Bpnomenus@YP_008837319	NTAIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYRKRHDAT	AD-AA-----
1380774_Psp@YP_008881415	NTEIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKQKHGOT	AD-AA-----
1249661_Bthailandensis@YP_007917844	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKRRHETA	ED-GKAAA-
320388_Bmallei@YP_993528	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKRRHETA	ED-GKAAA-
536230_Bpseudomallei@YP_002897469	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKRRHETA	ED-GKAAA-
395019_Bmultivorans@YP_001579332	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKRRHDTK	QD-DQAAA-
626418_Bglumae@YP_002912250	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYRKRHDAT	AE-DGCAA-
365044_Pnaphthalenivor@YP_981803	NSDIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADFRARHPAG	SG-AATILTE
266265_Bxenovorans@YP_553871	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYRKRHDAT	GT-AADSLQL
269482_Bvietnamiensis@YP_001115172	NTDIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADFRSRHPGA	GG-ETLAEQP
583345_Mmobilis@YP_003049105	NSEIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADIKAKQAAK	EN-A-----
666681_Mversatilis@YP_003674921	NSEIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADIKAKQAAK	VT-A-----
391038_Bphymatum@YP_001857685	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKQRHGET	AK-AGCSA-
398577_Bambifaria@YP_001808732	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKRRHDTT	EG-DQAAA-
269482_Bvietnamiensis@YP_001120041	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKRRHDTT	EG-DQAAA-
406425_Bcenocepacia@YP_001765425	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKRRHDTT	ES-DQAAA-
1009846_Bcepacia@YP_006615433	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKRRHDTT	EG-DQAAA-
482957_Blata@YP_369669	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKRRHDTT	EG-DQAAA-
748280_Psp@YP_004848592	NTEIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	SDYKQKHGK	-----
1229205_Bphenoliruptrix@YP_006834626	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKQRHGEA	VA-ESDKOHA
1163617_Sdenitrificans@YP_008546117	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKSKHGAM	VE-TAACTGS
266265_Bxenovorans@YP_559453	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKQRHGEA	VV-ADEKQHA
398527_Bphytofirmans@YP_001896197	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKQRHGEA	ASVEGDKOHA
375286_Jsp@YP_001352943	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	LDYKTKHGVA	ES-KEAA-
204773_Harsenicoxydans@YP_001100494	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	LDYKTKHGVA	EA-EKAV---
580332_Slithotrophicus@YP_003524869	NTHIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKAKNGAT	LE-TAACNGN
159087_Daromatica@YP_285167	NTEIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKQKHGGE	-----
882378_Brhizoxinica@YP_004029636	NSQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKRRHVAV	AG-EPAVOAG
85643_Tsp@YP_002355840	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKRRHVAV	-----
757424_Hseropedicae@YP_003776230	NTAIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYRHRHDAV	PE-VQCAAPA
522306_Caccumulibacter@YP_003167247	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYRKRHAAV	V-----
76114_Aaromaticum@YP_160687	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKQKHGK	-----
381666_Reutropha@YP_725668	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	EDYKQKHGAE	QK-AA-----
977880_Ctaiwanensis@YP_002005171	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	EDYKQKHGAE	QK-AA-----
1042878_Cnecator@YP_004684939	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	EDYKQKHGAE	QK-AA-----
266264_Cmetallidurans@YP_583181	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	DDYKQKHGPA	EQ-KAA---
395494_Gcapsiferiform@YP_003846450	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKSKHGEN	VE-TSACTGS
859655_Rsolanacearum@YP_005996961	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKQKHGTA	EQ-KAA---
402626_Rpickettii@YP_001898467	NTAIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKQKHGSA	EQ-KAA---
543913_bproteobacteriu@YP_007502653	NSLIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKQKHGPA	-----
62928_Asp@YP_933519	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKQKHGPA	-----
640081_Dsuillum@YP_005028573	NTDIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKQKHGDN	-----
452638_Pnecessarius@YP_001797351	NSLIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKQKHGPA	-----
292415_Tdenitrificans@YP_314923	NTAIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKQKHGLE	-----
265072_Mflagellatus@YP_544916	NSDIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADLAKAQGAK	DG-CVA----
582744_Mglucosetrophus@YP_003051619	NSDIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADLAKAQGNT	QE-AA-----
887061_Msp@YP_004040241	NSDIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADLAKAQGNT	QE-AA-----
891398_CTremblaya@YP_004707015	NSAIAEEL	-G	LPPVKIHCSI	LAEDAIRAAV	ADYRQKHGSO	CG-G-----
426114_Tarsenitoxydans@YP_003623866	NSQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	SDYQQRHGRN	AG-CALATEQ
75379_Tintermedia@YP_003642782	NSQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	SDYQQRHGRN	AG-CALATEQ
937774_Tequigenitalis@YP_004130301	NTDIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	SDYRKKKEGK	V-----
1008459_Tasinigenitalis@YP_004874474	NTDIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	NDYRKKKEGK	S-----
634503_Eictaluri@YP_002934567	NTDIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKQKHSAE	-----
718251_Etarda@YP_005700147	NTDIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	ADYKQKHSAE	-----
259536_Parcticus@YP_264760	NSDIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	SDYKQKHIPA	-----
335284_Pcryohalolentis@YP_580918	NSHIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	SDYKQKHVPA	-----
571800_Psp@YP_008163576	NSHIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	SDYKQKHVPA	-----
420662_Mpetroleiphilum@YP_001021452	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	SDYKQKHGNA	QP-AAATATH
243365_Cviolaceum@NP_900763	NTAIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	EDYKQKHGK	-----
1208919_Ckinetoplastiba@YP_007459239	NVDIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	EDYRQKHGSA	-----
983545_Gsp@YP_004435367	NTDIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	EDYKQKHHL	-----
342610_Patlantica@YP_660819	NMDIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	EDYKQKHQ	-----
743299_Aferriivorans@YP_004783591	NSHIAEEL	-E	LPPVKIHCSI	LAEDAIRAAV	EDYRQKHGGA	QV-AAAPEMA
243159_Aferrooxidans@YP_002425162	NSQIAEEL	-E	LPPVKIHCSI	LAEDAIRAAV	EDYRQKHGGA	ST-AAQPEMA
1005048_Cfungivorans@YP_004753777	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	EDYKQKHGEO	KO-AA-----
669502_Cproffftella@YP_008343646	NTDIAEEL	-V	LPLKIHCSI	LAEDAIRAAV	ESYKDKQKNI	KN-K-----
757424_Hseropedicae@YP_003776535	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	QDYKAKHGAE	QK-AA-----
395495_Lcholodnii@YP_001790080	NTHIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	DDYKAKHQA	-----
257310_Bbronchiseptica@NP_888820	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	QDYKTKHGAE	TP-EAFAAN
990288_Acaldus@YP_004748177	NSQIAEEL	-E	LPPVKIHCSI	LAEDAIRAAV	QDYKQKHGSA	AG-EAKVAAE
990288_Acaldus@YP_004748110	NRQIAEEL	-E	LPPVKIHCSI	LAEDAIRAAV	QDYRKRHGGK	SG-SEAD---
983917_Rgelatinosus@YP_005436383	NTDIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	QDYKQKHGSA	VA-TQH---
360910_Bavium@YP_786035	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	QDYKTKHGAA	EA-VTAD---
1036672_Akashmirensis@YP_006379415	NKQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	QDYKDKHTG	-----
340100_Bpetrii@YP_001631386	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	KDYKDKHAAV	AD-AQCETAA
523791_Kkorensis@YP_003146685	NTQIAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	KDYKQKHGQ	-----
156889_Mmarinus@YP_866958	NKDVAEEL	-A	LPPVKIHCSI	LAEDAIRAAV	KDYRQKHQK	GA-----

404589_Asp@YP_001377835	NTDVANEL-N	LPPVKIHCSV	LAEDAIIKAAV	ADWQKKRGVA	PT-VKPDTVQ
290397_Adehalogenans@YP_463806	NTDVANEL-N	LPPVKIHCSV	LAEDAIIKAAV	ADWQKKHGRE	PS-VKPNTVQ
447217_Asp@YP_002132996	NTDVANEL-N	LPPVKIHCSV	LAEDAIIKAAV	ADWQKKHGRE	PS-VKPNTVQ
455488_Adehalogenans@YP_002491042	NTDVANEL-N	LPPVKIHCSV	LAEDAIIKAAV	ADWQKKHGRE	PS-VKPNTVQ
378806_Saurantiaca@YP_003955403	NKDVAREL-S	LPPVKIHCSV	LAEDAIIKAAI	EDFKKKKRQGR	AP-KOTA---
246197_Mxanthus@YP_633158	NKDVAREL-S	LPPVKIHCSV	LAEDAIIKAAI	EDFKKKKRAAR	CA-KAS----
483219_Mfulvus@YP_004669542	NKDVAREL-S	LPPVKIHCSV	LAEDAIIKAAI	EDFKKKKRAAR	CA-KAS----
1144275_Ccoralloides@YP_005368444	NKDVAREL-S	LPPVKIHCSV	LAEDAIIKAAI	EDFKKKKRASR	CA-----
1278073_Mstipitatus@YP_007362455	NKDVAREL-A	LPPVKIHCSV	LAEDAIIKAAI	EDFKKKKRAAR	KA-CAS----
448385_Scellulosum@YP_001617979	NSMIAEEL-H	LPPVKIHCSV	LAEDAIIKSAI	ADFRAKCQAK	RE-LAGAAPS
399739_Pmendocina@YP_001188990	NTQLAEEL-A	LPPVKIHCSV	LAEDAIIKAAV	RDYKQKKGLL	-----
1294143_Pdenitrificans@YP_007659193	NTQLAEEL-A	LPPVKIHCSV	LAEDAIIKAAV	RDYKQKKGLL	-----
208964_Paeruginosa@NP_252502	NTQLAEEL-A	LPPVKIHCSV	LAEDAIIKAAV	RDYKQKKGLL	-----
322710_Avinelandii@YP_002801150	NTQLAEEL-A	LPPVKIHCSV	LAEDAIIKAAV	RDYKQKKGLV	-----
644801_Pstutzeri@YP_007239445	NTQLAEEL-A	LPPVKIHCSV	LAEDAIIKAAV	RDYREKKGLL	-----
1207075_Psp@YP_007027941	NTQLAEEL-A	LPPVKIHCSV	LAEDAIIKAAV	RDYKQKKGLI	-----
1114970_Pfluorescens@YP_005206437	NTQLAEEL-A	LPPVKIHCSV	LAEDAIIKAAV	RDYKQKKGLI	-----
220664_Pprotogens@YP_262044	NTQLAEEL-A	LPPVKIHCSV	LAEDAIIKAAV	RDYKQKKGLI	-----
351746_Pputida@YP_001266219	NTQLAEEL-A	LPPVKIHCSV	LAEDAIIKAAV	RDYKQKKGLI	-----
1435058_Pmonteilii@YP_008958359	NTQLAEEL-A	LPPVKIHCSV	LAEDAIIKAAV	RDYKQKKGLI	-----
743720_Pfulva@YP_004475358	NTQLAEEL-A	LPPVKIHCSV	LAEDAIIKAAV	RDYKQKKGLL	-----
264730_Psyringae@YP_273568	NTQLAEEL-A	LPPVKIHCSV	LAEDAIIKAAV	RDYKQKKGLL	-----
384676_Pentomophila@YP_606728	NTQLAEEL-A	LPPVKIHCSV	LAEDAIIKAAV	RDYKQKKGLI	-----
1430440_Mgryphiswaldens@YP_008937260	NTDIANEL-A	LPPVKIHCSV	LAEDAIIKAAI	KDYKSKSGQT	ED-EKAAG--
749219_Mcatarrhalis@YP_003626770	NKDIANEL-A	LPPVKVHCSV	LAEDAIIKAAI	EDYQTKAQA-	-----
62977_Asp@YP_046090	NIDIANEL-A	LPPVKVHCSV	LAEDAIIKAAI	EDYRNKFSKA	-----
436717_Aoleivorans@YP_003732380	NIDIATEL-A	LPPVKVHCSV	LAEDAIIKAAI	EDYRSTKSKA	-----
400667_Abaumannii@YP_001084660	NIDIATEL-A	LPPVKVHCSV	LAEDAIIKAAI	EDYRSTKSKA	-----
871585_Acalcoaceticus@YP_004995269	NIDIATEL-A	LPPVKVHCSV	LAEDAIIKAAI	DDYRSKKSKA	-----
511062_Osp@YP_005091814	NTDIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	DDYKQKKNLA	-----
318167_Sfrigidimarina@YP_751106	NADIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	EYKSKQAK	-----
326297_Samazonensis@YP_927171	NTDIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	EYKSKQAK	-----
318161_Sdenitrificans@YP_562467	NADIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	DEYKSKQAK	-----
167879_Cpsychrerythrae@YP_267876	NTDIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	EDYKSKQAK	-----
637905_Sviolacea@YP_003556341	NTDIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	EDYKSKQAK	-----
225849_Spiezotolerans@YP_002311055	NTDIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	DEYKTKQSK	-----
323850_Sloihica@YP_001094441	NTDIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	DEYKAKHEK	-----
425104_Ssediminis@YP_001474605	NTDIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	DDYKSKQTK	-----
392500_Swoodyi@YP_001760156	NTDIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	DDYKSKQDK	-----
60481_Ssp@YP_737869	NTDIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	DEYKSKQAK	-----
211586_Soneidensis@NP_717861	NTDIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	DEYKSKQAK	-----
693973_Sbaltica@YP_005273706	NTDIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	DEYKSKQAK	-----
399804_Sputrefaciens@YP_006009782	NTDIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	DEYKSKQAK	-----
298386_Sprofundum@YP_128966	NSDIAEEL-E	LPPVKIHCSI	LAEDAIIKAAV	SDYKSKQAK	-----
28173_Vnigripulchritu@YP_008621944	NAEIAEEL-E	LPPVKVHCSI	LAEDAIIKAAV	SDYKSKHDS	-----
1219076_Valginolyticus@YP_008537102	NSEIAEEL-E	LPPVKVHCSI	LAEDAIIKAAV	ADYKSKHQE	-----
150340_Vsp@YP_003286982	NSEIAEEL-E	LPPVKVHCSI	LAEDAIIKAAV	ADYKSKHQE	-----
345073_Vcholerae@YP_001216234	NSEIAEEL-E	LPPVKIHCSI	LAEDAIIKAAV	ADYKSKHQE	-----
223926_Vparahaemolytic@NP_796976	NSEIAEEL-E	LPPVKVHCSI	LAEDAIIKAAV	ADYKSKHQE	-----
882102_Vanguillarum@YP_004566935	NSEIAEEL-E	LPPVKVHCSI	LAEDAIIKAAV	ADYKSKHQE	-----
575788_Vsplendidus@YP_002416251	NSEIAEEL-E	LPPVKVHCSI	LAEDAIIKAAV	ADYKSKHQE	-----
1129794_Gpsychrophila@YP_007545568	NMDIAEEL-A	LPPVKIHCSI	LAEDAIIKAAV	ADYKSKRCV	-----
196600_Vvulnificus@NP_933549	NSEIAEEL-E	LPPVKVHCSI	LAEDAIIKAAV	ADYKSKHQE	-----
903510_Vfurnissii@YP_004993913	NSEIAEEL-E	LPPVKVHCSI	LAEDAIIKAAV	ADYKSKHEL	-----
338187_Vcampbellii@YP_001444276	NSEIAEEL-E	LPPVKVHCSI	LAEDAIIKAAV	ADYKSKHQE	-----
338187_Vcampbellii@YP_008526292	NSEIAEEL-E	LPPVKVHCSI	LAEDAIIKAAV	ADYKSKHQE	-----
314282_Psp@YP_007639631	NTEITAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	ADYRSKNS	-----
357804_Pingrahamii@YP_942749	NTDIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKHPNA	-----
326442_Phaloplanktis@YP_341160	NTDIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ANYKSKQAK	-----
234831_Psp@YP_004067531	NTDIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKHTN	-----
595494_Tauensis@YP_002893203	NTDIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKKGLN	-----
396588_Tsulfidiphilus@YP_002513559	NTDIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	ADFKQKSGAE	DE-RKIA---
396588_Tsulfidiphilus@YP_002514125	NTDIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	ADFKQKSGAE	EP-AKTA---
998088_Averonii@YP_004393031	NTDIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	ADYKQKKGL	-----
380703_Ahydrophila@YP_856284	NTDIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	ADYKQKKGL	-----
382245_Asalmonicida@YP_001142383	NTDIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	ADYKQKKGL	-----
342108_Mmagnetium@YP_422390	NTDIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKSG	-----
1245471_Presinovorans@YP_008101472	NTDIAEEL-A	LPPVKIHCSI	LAEDAIIKAAV	HDYKQKKGLL	-----
365044_Pnaphthalenivor@YP_982518	NSAIAEEL-A	LPPVKIHCSI	LAEDAIIKAAV	NDYKQKHSIA	EA-AH----
296591_Psp@YP_549004	NSAIAEEL-A	LPPVKIHCSI	LAEDAIIKAAV	NDYKQKHAH	-----
232721_Asp@YP_986388	NSQIAEEL-A	LPPVKIHCSI	LAEDAIIKAAV	NDYKAKHGAA	VE-AA----
535289_Aebreus@YP_002553097	NSQIAEEL-A	LPPVKIHCSI	LAEDAIIKAAV	NDYKAKHGAA	VE-AA----
365046_Rtataouinensis@YP_004618947	NSQIAEEL-A	LPPVKIHCSI	LAEDAIIKAAV	EDYKSKRTH	-----
946483_CSymbiobacter@YP_008681130	NSDIAEEL-E	LPPVKVHCSI	LAEDAIIKAAV	SDYRNKHGDT	PA-CPDTP--
312309_Vfischeri@YP_204001	NAEIAEEL-E	LPPVKVHCSI	LAEDAIIKAAV	SDYRNKHQD	-----
595537_Vparadoxus@YP_004156043	NAEIAEEL-E	LPPVKIHCSI	LAEDAIIKAAV	SDYKAKHGAK	TA-ESAAEAV
316275_Asalmonicida@YP_002262235	NAEIAEEL-E	LPPVKVHCSI	LAEDAIIKAAV	LDYRNKH	-----
391735_Veiseniae@YP_997138	NSEIAEEL-A	LPPVKIHCSI	LAEDAIIKAAV	LDYKTKRMAA	AA-VA----
397945_Acitrullii@YP_970793	NAEIAEEL-A	LPPVKIHCSI	LAEDAIIKAAV	QDYKAKHSAL	AG-A-----
643561_Aavenae@YP_004235248	NAEIAEEL-A	LPPVKIHCSI	LAEDAIIKAAV	QDYKAKHSAL	AG-A-----
398578_Dacidovorans@YP_001565014	NSQIAEEL-A	LPPVKVHCSI	LAEDAIIKAAV	DDYRAKRTAV	VA-A-----
742013_Dsp@YP_004488168	NSQIAEEL-A	LPPVKVHCSI	LAEDAIIKAAV	DDYRAKRTAV	VA-A-----
338969_Aferrireducens@YP_523433	NSQIAEEL-A	LPPVKIHCSI	LAEDAIIKAAV	DDYRKRKHVAA	LT-N-----
596154_Adenitrificans@YP_004388278	NSQIAEEL-A	LPPVKIHCSI	LAEDAIIKAAV	NDYKAKHEAA	VE-AA----
688245_Ctestosteroni@YP_003278774	NSQIAEEL-A	LPPVKVHCSI	LAEDAIIKAAV	NDYRAKRTAT	EA-----
1266738_Pmirabilis@YP_008398502	NTDIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKROGK	-----
1124991_Mmorganii@YP_007505117	NTDIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKROGK	-----
406817_Xnemotophila@YP_003713469	NTDIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKROAK	-----

291112_Pasymbiotica@YP_003040200	NTEIADEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKROGK	----
243265_Pluminescens@NP_930506	NTEIADEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKROGR	----
406818_Xbovienii@YP_003468915	NTAIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
273123_Ypseudotubercula@YP_071365	NTQIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKHTAK	----
393305_Yenterocolitica@YP_001005390	NTQIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKHTAK	----
1346614_Sliquefaciens@YP_008231656	NTQIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKHNAK	----
1348660_Splymthica@YP_008160622	NTQIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKHSAK	----
399741_Sproteamaculans@YP_001479850	NTQIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKHSAK	----
1249634_Smarcescens@YP_007345780	NTEIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKHDAK	----
187410_Ypestis@NP_668657	NTQIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKHTAK	----
1157951_Pstuartii@YP_006215182	NTAIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKROGK	----
344609_Sboydii@YP_001881320	NTQIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
104623_Ssp@YP_008524031	NTQIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKHDAN	----
561229_Dzeae@YP_003003456	NTQIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKRGDK	----
590409_Ddadantii@YP_003334610	NTQIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKRSDK	----
561230_Pcarotovorum@YP_003018589	NTQIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKRDAQ	----
561231_Pwasabiae@YP_003258666	NTQIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKRDAQ	----
1166016_Psp@YP_006282128	NTQIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKRDAQ	----
218491_Patrosepticum@YP_051325	NTQIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKRDAQ	----
99287_Senterica@NP_461477	NTDIADEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
218493_Sbongori@YP_004731144	NTDIADEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
290339_Csakazakii@YP_001436836	NTDIADEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
693216_Cturicensis@YP_003211492	NTDIADEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
399742_Esp@YP_001177741	NTDIADEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
640513_Easburiae@YP_004829762	NTDIADEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
693444_Ebacterium@YP_007339349	NTDIADEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
290338_Ckoseri@YP_001451852	NTDIADEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
484021_Kpneumoniae@YP_002920722	NTDIADEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
637910_Crodentium@YP_003366009	NTDIADEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
640131_Kvariicola@YP_003438138	NTDIADEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
1191061_Koxytoca@YP_006500071	NTDIADEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
1286170_Norithinolytic@YP_007872306	NTDIADEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
511145_Ecoli@NP_417024	NTDIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
585054_Efergusonii@YP_002381825	NTDIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
198214_Sflexneri@NP_708368	NTDIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
216599_Ssonnei@YP_005457544	NTDIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
300267_Sdysenteriae@YP_404261	NTDIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
716541_Ecloacae@YP_003614361	NTDIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
701347_Elignolyticus@YP_003940771	NTDIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
630626_Sblattae@YP_006318650	NTDIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
1028307_Eaerogenes@YP_004590373	NTDIAEEL-E	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKREAK	----
557723_Hparasuis@YP_002474707	NSDIAEEL-E	LPPVKVHCSI	LAEDAIIKAAI	ADYKEKNGK	----
1005058_Ganatis@YP_004420698	NSDIAEEL-E	LPPVKVHCSI	LAEDAIIKAAI	ADYKAKNSK	----
1075089_Pmultocida@YP_005176279	NSQIAEEL-E	LPPVKVHCSI	LAEDAIIKAAI	ADYKAKKEAK	----
205914_Hsomnus@YP_718490	NSQIAEEL-E	LPPVKVHCSI	LAEDAIIKAAI	ADYKAKKAE	----
1171377_Btrehalosi@YP_007548422	NSDIAEEL-E	LPPVKVHCSI	LAEDAIIKAAI	ADYKEKCGK	----
233412_Hducreyi@NP_873560	NSDIAEEL-E	LPPVKVHCSI	LAEDAIIKAAI	ADYKEKQAK	----
416269_Apleuropneumoni@YP_001053631	NSDIAEEL-E	LPPVKVHCSI	LAEDAIIKAAI	ADYKEKQAK	----
696748_Asuis@YP_006816777	NSDIAEEL-E	LPPVKVHCSI	LAEDAIIKAAI	ADYKEKQAK	----
1366053_Mhaemolytica@YP_008338465	NSDIAEEL-E	LPPVKVHCSI	LAEDAIIKAAI	ADYKEKQAK	----
1334187_Hinfluenzae@YP_008544790	NSQIAEEL-E	LPPVKVHCSI	LAEDAIIKAAI	ADYKAKGGE	----
634176_Aaphrophilus@YP_003007650	NSQIAEEL-E	LPPVKVHCSI	LAEDAIIKAAI	ADYKAKKGS	----
694569_Aactinomycetemc@YP_006286355	NSQIAEEL-E	LPPVKVHCSI	LAEDAIIKAAI	ADYKAKKGS	----
862965_Hparainfluenzae@YP_004822800	NSQIAEEL-E	LPPVKVHCSI	LAEDAIIKAAI	ADYKAKKGS	----
221988_Msucciniciprodu@YP_088916	NSQIAEEL-E	LPPVKVHCSI	LAEDAIIKAAI	ADYKAKKGS	----
339671_Asuccinogenes@YP_001344170	NSQIAEEL-E	LPPVKVHCSI	LAEDAIIKAAI	ADYKAKKGE	----
550540_Fbalearica@YP_003914035	NTAIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	ADYKSKQDK	----
396595_Tsp@YP_003460082	NTQIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	SNYOERHGON	EG-KTA----
413404_CRuthia@YP_903798	NSDIAEEL-S	LPPVKIHCSI	LAEDAIIKAAI	NDIKSKA	----
412965_Cvesicomysociu@YP_001219373	NSDIAEEL-S	LPPVKIHCSI	LAEDAIIKAAI	NDIKSKI	----
1208921_CKinetoplastiba@YP_007448562	NMQIAEEL-A	LPPVKIHCSI	LAEDAIIKAAI	SDYKLNKID	----
561501_Baphidicola@YP_002468877	NTIIVEEL-D	LPPVKIHCSI	LAEDAIIKAAI	SDYKRKIN	----
357244_Otsutsugamushi@YP_001248706	NSKIAEHL-A	LLPIKMHCMS	LAEDAIIKAAI	VDYKSKONKT	----
1003201_Rtyphi@YP_005427548	NTEIAKEL-S	LPPVKLHCSSL	LAEDAIIKAAI	ADYKQKKGK	KD-S----
1105111_CRickettsia@YP_005365544	NTEIAKEL-S	LPPVKLHCSSL	LAEDAIIKAAI	ADYKQKKEK	KD-S----
272944_Rconorii@NP_360366	NTEIAKEL-S	LPPVKLHCSSL	LAEDAIIKAAI	ADYKQKKEK	KD-S----
452659_Rrickettsii@YP_001650107	NTEIAKEL-S	LPPVKLHCSSL	LAEDAIIKAAI	ADYKQKKEK	KD-S----
347255_Rafricae@YP_002845312	NTEIAKEL-S	LPPVKLHCSSL	LAEDAIIKAAI	ADYKQKKEK	KD-S----
562019_Rpeacockii@YP_002916645	NTEIAKEL-S	LPPVKLHCSSL	LAEDAIIKAAI	ADYKQKKEK	KD-S----
1105113_Rrhipicephali@YP_005390607	NTEIAKEL-S	LPPVKLHCSSL	LAEDAIIKAAI	ADYKQKKEK	KD-S----
416276_Rmassiliae@YP_001499486	NTEIAKEL-S	LPPVKLHCSSL	LAEDAIIKAAI	ADYKQKKEK	KD-S----
1105108_Rparkeri@YP_005392983	NTEIAKEL-S	LPPVKLHCSSL	LAEDAIIKAAI	ADYKQKKEK	KD-S----
1105114_Rmontanensis@YP_005391246	NTEIAKEL-S	LPPVKLHCSSL	LAEDAIIKAAI	ADYKQKKEK	KD-S----
1032845_Rheilongjiangen@YP_004764467	NTEIAKEL-S	LPPVKLHCSSL	LAEDAIIKAAI	ADYKQKKEK	KD-S----
652620_Rjaponica@YP_004884928	NTEIAKEL-S	LPPVKLHCSSL	LAEDAIIKAAI	ADYKQKKEK	KD-S----
481009_Rphilipii@YP_005300823	NTEIAOEL-S	LPPVKLHCSSL	LAEDAIIKAAI	ADYKQKKEK	KD-S----
1105109_Rslovaca@YP_005426472	NTEIAKEL-S	LPPVKLHCSSL	LAEDAIIKAAI	ADYKQKKEK	KD-S----
1105107_Rcanadensis@YP_005299497	NTEIAKEL-S	LPPVKLHCSSL	LAEDAIIKAAI	ADYKQKQAK	KT-LKT----
336407_Rbellii@YP_538116	NTEIAKEL-S	LPPVKLHCSSL	LAEDAIIKAAI	ADYKLLKENK	KD-S----
315456_Rfelis@YP_246860	NTEIAKEL-S	LPPVKLHCSSL	LAEDAIIKAAI	ADYKQKKEK	KD-S----
293614_Rakari@YP_001493572	NTEIAKEL-S	LPPVKLHCSSL	LAEDAIIKAAI	ADYKQKKEK	KD-S----
1105110_Raustralis@YP_005414962	NTEIAEEL-S	LPPVKLHCSSL	LAEDAIIKAAI	ADYKQKKEK	KD-S----
434131_Nristicii@YP_003081518	NTEIASTL-C	LPPIKMHCSM	LAEDAIIKAAI	KDFREKQAS	ST-EEANNEN
222891_Nsennetsu@YP_506192	NTEIASTL-C	LPPIKMHCSM	LAEDAIIKAAI	KDFREKQVTS	ST-EEAGNEN
330214_CNitrospira@YP_003799619	NTDIVOEL-N	LPPVKIHCSI	LAEDAIIKAAI	ADYKQKADSK	----
984262_Sgrandis@YP_005322201	NMAIVEEL-E	LPPVKIHCSI	LAEDAIIKAAI	KDYQEKNAK	----
100901_Wendosymbiont@YP_006555868	NTQIVKEL-S	LPPVKIHCSI	LAEDAIIKAAI	HDYQSKQSK	NN-----
66084_Wsp@YP_002727379	NTQIVEEL-S	LPPVKIHCSI	LAEDAIIKAAI	HDYQSKQKN	----

1423892_Emuris@YP_008929080	NTVLVKEL-S	LPPVKIHCSL	LAEDAVKAAI	NDYNMKQANK	KD-KLSSLSSE
574556_Acentrale@YP_003328545	NTVLAKEL-S	LPPVKIHCSL	LAEDAVKAAV	HDYKSKQOIA	KG-DKC----
320483_Amaginace@YP_002563600	NTVLAKEL-S	LPPVKIHCSL	LAEDAVKAAV	HDYKSKQOIA	KG-DKC----
1184253_Aphagocytophilu@YP_008332775	NTVLAKEL-S	LPPVKIHCSI	LAEDAVKAAI	NDYRKKQOEV	GN-----
205920_Echaffeensis@YP_507440	NTVLAKEL-S	LPPVKIHCSL	LAEDAVKAAI	KDYNMKQATK	KD-KLSSSSNE
254945_Eruminantium@YP_180281	NTVLAKEL-S	LPPVKIHCSL	LAEDAVKAAI	NDYHMKQANK	KN-ATKNPNE
254945_Eruminantium@YP_197308	NTVLAKEL-S	LPPVKIHCSL	LAEDAVKAAI	NDYHMKQANK	KN-ATKNPNE
269484_Ecanis@YP_303050	NTVLAKEL-S	LPPVKIHCSL	LAEDAIIKAAI	NDYNMKQENR	KS-NTAFSSD
517418_Cthalassium@YP_001997584	NTALVSEL-S	LPPVKIHCSV	LAEDAIIKAAI	DDFRKKQAAK	HA-KSETASAS
485917_Pheparinus@YP_003091837	NMDIVEEL-A	LPPVKIHCSV	LAEDAIIKSAI	NDYRVKNGME	PF-ELAKSHH
762903_Psaltans@YP_004273747	NMDIVEEL-A	LPPVKIHCSV	LAEDAIIKSAI	NDYRVKNGLP	AL-EIEKSHH
929556_Scanadensis@YP_006255074	NMDIVEEL-A	LPPVKIHCSV	LAEDAIIKSAI	NDYRVKNGME	PI-ALEKSHH
760192_Hhydrossis@YP_004446110	NMTIVEEL-A	LPPVKIHCSV	LAEDAIRGAI	ADYQCKNGIE	VA-VAEKAH-
1162668_Lferrooxidans@YP_005469656	NTDIVQEL-N	LPPVKIHCSV	LAEDAIIKSAI	QDYQDKKSR-	-----
1048260_Lferriphilum@YP_006765680	NTDIVQEL-N	LPPVKIHCSV	LAEDAIIKSAI	NDYRAKKTOT	SE-KSEKANV
240015_Acapsulatum@YP_002755573	NTDIVKEL-A	LPPVKIHCSV	LAEDAIRAAI	GDWKKKNGVA	ET-EAAQOTV
204669_Akoribacter@YP_589562	NTDIVKEL-S	LPPVKIHCSV	LAEDAIRAAI	GDWKKKNNQ-	-----
1198114_Gtundricola@YP_004219465	NTDIVKEL-A	LPPVKIHCSV	LAEDAIRAAI	GDWKKKNNVA	ET-EGAAVAV
926566_Troseus@YP_006423699	NTEIVKEL-A	LPPVKIHCSV	LAEDAIRAAI	GDWKKKNNVA	ET-EPALVGA
401053_Tsaanensis@YP_04180969	NTDIVKEL-A	LPPVKIHCSV	LAEDAIRAAI	GDWKKKNGQP	ES-EPALVGA
682795_Gmallensis@YP_005055878	NTDIVKEL-A	LPPVKIHCSV	LAEDAIRAAI	GDWKKKNGVA	EE-AGVAVAA
696127_Cmidichloria@YP_004679282	NSEIAQEL-S	LPPVKIHCSV	LAEDAIISSAI	RDYKEKWEIG	DK-----
871271_Czindieria@YP_003878048	NLDIANFL-L	LSPKIHCSI	LAEEVIKFSI	KNYYYKNNYK	YD-Y-----
657324_Bfibrisolvens@YP_007819038	NKAVTEALDG	LPAHKLHCSV	LAEEAIKSAV	LDYVYDNGIE	YD-PKDFPDP
768670_Cnitroreducens@YP_004051749	NNAIVEALDG	LPPAKIHCSV	MAEEAIEAAL	KDYKRIKIGD	PS-IVDEMKA
717231_Fsinusarabici@YP_004603876	NNAIVEALEG	LPPAKIHCSV	MAEEAIEAAL	KDYERYVGKD	PK-IVDEIKE
639282_Ddesulfuricans@YP_003496772	NEAIVEALDG	LPPAKIHCSV	MAEEAIEAAL	KDYQRIKIGD	PK-IVDEMKA
522772_Dacetiphilus@YP_003503972	NDAIVEALGG	LPPAKIHCSV	MAEEAIEEAL	KDYKSKGQED	PS-VVDDMKA
693746_Ovalericigenes@YP_004880314	NKAVVEALDG	LPAVKLHCSV	LAEOAVKAAV	KDYDDKNGIP	YG-KDLTICN
657321_Rbromii@YP_007781362	NKAVMEALDG	LPPVKVHCSV	LAEOAIKAAV	SDYKRRGVD	PE-PIVGNVP
657322_Fprausnitzii@YP_007799942	NKAVVEALEG	LPPVKVHCSV	LAEOAVKAAI	SDYRRQGIT	PE-PIVGLKE
213810_Rchampanellensii@YP_007828576	NKAVVEALDG	LPAVKLHCSV	LAEOAIKAAI	SDYRRQGIT	PG-PIVGEVH
657319_[siraeum@YP_007775950	NKAVVEALDG	LPPAKLHCSV	LAEOAIKAAI	ADYITRQGIT	PT-PFVGEIK
293826_Ametalliredigen@YP_001320267	NKAVAEALDG	LPPVKMHCSV	LAEOAVKAAI	YDYACKNNLH	YE-DLDDFNP
350688_Aorelandii@YP_001513205	NKAVAEALDG	LPPVKMHCSV	LAEOAVKAAI	YDYAKENNVE	YE-ELEGFVP
546269_Falocis@YP_005054244	NKAVAEALDG	LPPVKMHCSV	LAEEAVVAAL	QDYAKNNLH	IE-GITDRVL
1511_[sticklandii@YP_003936518	NKAVAEALDG	LPPVKMHCSV	LAEOAIKKAAL	QDYALKNNLT	IE-GLTDVEF
699034_Pdifficile@YP_006198328	NKAVAEALDG	LPPVKMHCSV	LAEOAVKAAI	IDYACKNNIH	IE-ELDGYVI
1128398_[acidurici@YP_006788189	NKAVVEALDG	LPPAKIHCSV	LAEOAVKSAI	IDYAKNNID	IE-ELEKFEL
572544_Ipolytropus@YP_003967871	NKAVAEALDG	LPPAKMHCSV	LAEEGIKAAI	EDYMGK----	-----
469604_Fnucleatum@YP_008477745	NKAVVEALGG	LPAVKMHCSV	LAEEAIKMAI	EDYIAKRDGK	KA-Q-----
580340_Tlienii@YP_004932350	NKDVLEELGG	LPPVKIHCSL	LAEEGIKAAI	EDYRRRKEGK	K-----
891968_Amobile@YP_006444325	NKDVAEALGG	LPPQKLHCSL	LAEEGIKAAI	EDYLAKRQND	NK-KESGKQD
525903_Tacidaminovorana@YP_003316727	NKDVAEALGG	LPPQKLHCSL	LAEOGIRAAI	EDYLRRQRGE	SP-EPTGGSC
697281_Maustraliensis@YP_004463371	NKTVDALDG	LPAIKMHCSV	LAEDGLRAAI	EDYKRRKGLI	TE-DEMAKPH
309799_Dthermophilum@YP_002251521	NKAVTEALDG	LPPNKLHCSV	LAEEAIKAAI	EDYLKCKKCK	-----
368407_Mmarisnigri@YP_001047821	NTDVEDALGG	LPPQKLHCSL	LAEDAIRAAI	DDFRTRRGLP	PI-ERGSGCC
903814_Elimosum@YP_003961665	NSEVVEALGG	LPTKIHCSV	LAEEAIQAAI	EDYKSKHNA-	-----
931626_Awoodii@YP_005268656	NSDVEDALGG	LPSKIHCSV	LAEEAIQAAI	ADYQNNKA--	-----
410358_Mlabreanum@YP_001029708	NKAVAEALDG	LPPNKMHCVS	LAEEIHKAI	NDYLKSSGRE	PW-GDEECSS
679926_Mpetrolearius@YP_003895855	NKAVAEALDG	LPPQKLHCSL	LAEEAIHKA	NDYRAKNGLE	PW-EKGGHQ
86416_Cpasteurianum@YP_007940944	NKAVAEALDG	LPPVKMHCSV	LAEEAIHKA	NAYRESVGLE	AW-EMKTHSE
929506_Cbotulinum@YP_004396224	NKAVAEALEG	LPPVKMHCSV	LAEEAIHTAI	NDYRVKQGLE	PW-KMKVHSD
386415_Cnovyi@YP_878355	NKAVAEALEG	LPPVKMHCSV	LAEEAIHTAI	NDYRVKQGLE	PW-DMKVHSD
748727_Clungdahlii@YP_003779382	NKAVAEALDG	LPPVKMHCSV	LAEEAIHKA	NDYRESQGLE	PW-ATKNHSE
1341692_Cautoethanogenu@YP_008700753	NKAVAEALDG	LPPVKMHCSV	LAEEAIHKA	NDYRESQGLE	PW-ATKNHSE
747365_Tnarugense@YP_004437867	NKAVAEALDG	LPPVKMHCSV	LAEEAIHKA	NDYRKSNNLE	LW-EERTHAE
651822_Ffastidiosum@YP_007827223	NQAVAEALDG	LPPVKMHCSV	LAEEAIHAAL	NDYRTKHGMA	AI-PMEKHDD
572547_Acolombiensis@YP_003553035	NSAVAKALDG	LPPVKMHCSV	LAEEAIHGAI	NDYRRQGLE	PW-EDKSHDE
212717_Ctetani@NP_781697	NKAVADALDG	LPPVKMHCSV	LAEEAIHKA	NDYRESIGLE	PW-EMKVHSD
431943_Ckluveri@YP_001394709	NKAVADALDG	LPPVKMHCSV	LAEEAIHKA	NDYRESQGLE	PW-KICTHSE
573061_Ccellulovorans@YP_003843335	NKAVAEALDG	LPPVKMHCSV	LAEEAIHKA	NDYRVKNGLE	PI-ATEHSHD
508767_Cbotulinum@YP_001920515	NKAVAEALDG	LPPVKMHCSV	LAEEAIHKA	NDYRANGLD	VI-PMKEHSD
931276_Csaccharoperbut@YP_007454264	NKAVAEALDG	LPPVKMHCSV	LAEEAIHKA	NDYRANGLD	VI-PMKEHSD
290402_Cbeijerinckii@YP_001308237	NKAVAEALDG	LPPVKMHCSV	LAEEAIHKA	NDYRAKNGLE	VI-PMKEHSD
1345695_Csaccharobutyli@YP_008674363	NKAVAEALDG	LPPVKMHCSV	LAEEAIHKA	NDYRVNNGLE	AK-PMKEHSD
269797_Mbarkeri@YP_305925	NKAVAEALDG	LPPVKMHCSV	LAEEAIHKA	NDYLKCKGLE	PW-TE-----
188937_Macetivorans@NP_617616	NKAVAEALDG	LPPVKMHCSV	LAEEAIHKA	NDYROROGLE	PW-D-----
195103_Cperfringens@YP_696469	NKAVAEALDG	LPPVKMHCSV	LAEEAIHKA	NDYROROGLE	PW-DMKEHSH
593750_Mformicica@YP_007249963	NKAVADALEG	LPPVKMHCSV	LAEEGIHKA	NNYRKKQGLP	EW-EEKNHPS
456442_Mboonei@YP_001405283	NKAVAEALNG	LPPVKMHCSV	LAEEGIHKA	NDYRVKNGLE	PW-QETSSHA
521011_Mpalustris@YP_002466865	NKAVAEALGG	LPPVKMHCSV	LAEEGIHKA	NDYRVKNGLE	PI-PDPHAHA
323259_Mhungatei@YP_503638	NKAVAEALEG	LPPVKMHCSV	LAEEGIHKA	NDYRIKNGLE	PW-EKGGHT
547558_Mmahii@YP_003541558	NKAVAEALEG	LPPVKMHCSV	LAEEGIHKA	NDYREKQGLK	PI-EKPPDAE
644295_Mevestigatum@YP_003727500	NKAVADALEG	LPSIKMHCSV	LAEEAIHKA	NDYRQKONLP	LW-GEKEEEK
351627_Csaccharolyticu@YP_001181022	NKAVAEALDG	LPAVKLHCSV	LAEEAIKAAI	EDYLKCKQOQ	TO-N-----
521460_Cbescii@YP_002573580	NKAVAEALDG	LPAVKLHCSV	LAEEAIKAAI	EDYLSKQKSK	NT-N-----
632292_Chydrothermalis@YP_003992133	NKAVAEALDG	LPAVKLHCSV	LAEEAIKAAI	EDYLSKQKSK	NT-N-----
632348_Ckronotskyensis@YP_004023692	NKAVAEALDG	LPAVKLHCSV	LAEEAIKAAI	EDYLSKQKSK	NT-N-----
632335_Ckristjanssonii@YP_004026829	NKAVAEALDG	LPAVKLHCSV	LAEEAIKAAI	EDYLSKQKSK	NT-N-----
632516_Clactoaceticus@YP_004798736	NKAVAEALDG	LPAVKLHCSV	LAEEAIKAAI	EDYLSKQKSK	NT-N-----
608506_Cobsidiansis@YP_003840166	NKAVAEALDG	LPAVKLHCSV	LAEEAIKAAI	EDYLSKQKSK	NT-N-----
632518_Cowensensis@YP_004002802	NKAVAEALDG	LPAVKLHCSV	LAEEAIKAAI	EDYLSKQKSK	NT-N-----
1121335_[stercorarium@YP_007372524	NKAVVEALDG	LPPAKLHCSV	LAEEAIAAAI	ADYKRRHGLD	VE-NSECQGC
1121335_[stercorarium@YP_007678972	NKAVVEALDG	LPPAKLHCSV	LAEEAIAAAI	ADYKRRHGLD	VE-NSECQGC
755731_Csp@YP_005148252	NKAVAEALDG	LPPAKMHCSV	LAEEAIAAAL	TDYKRRNGLI	DP-NEGEDCT
394503_Ccellulolyticu@YP_002506259	NKAVAEALDG	LPPAKMHCSV	LAEEAIAAAL	TDYKRRNGLI	DS-NEGEDCT
720554_[clariflavum@YP_005046370	NKAVAEALDG	LPPVKMHCSN	LAEEGIKAAI	EDYLKKTGRL	SK-ECSEVC

203119_Rthermocellum@YP_001037149	NKAVAEALDG	LPPVKMHCSN	LAEEAIRAAI	DDYRRKNGLL	PE-GSENNAC
642492_Clentocellum@YP_004309737	NKSVAEALDG	LPPVKMHCSL	LAEE S LHAAL	WDYAKKNNIT	TE-GLKEPVA
1384484_Aequolifaciens@YP_008663926	NKAVMEALDG	LPPVKVHCSL	LAEEAIHAAL	WDYAEKNGIV	TE-GLEKPVV
515619_Erectale@YP_002936246	NKAVMEALDG	LPPVKVHCSL	LAEEAIHAAL	WDYAEKNGIK	TE-GLEKPVN
718255_Rintestinalis@YP_007780168	NKAVMEALDG	LPPVKVHCSL	LAEEAIHAAL	WDYAEKNGIK	TE-GLERPVN
657315_Rintestinalis@YP_007830593	NKAVMEALDG	LPPVKVHCSL	LAEEAIHAAL	WDYAEKNGIK	TE-GLERPVN
357809_Lpythofermentan@YP_001560003	NKAVMEALDG	LPPVKVHCSL	LAEEAIHAAL	WDYAEKNGIO	TE-GLKKPKN
610130_[saccharolyticu@YP_003823446	NGAVCEALDG	LPPVKVHCSL	LAEEAIHAAL	WDYAEKNGIE	ID-GLKKPKS
717608_[cf@YP_007849106	NKAVMEALDG	LPPVKVHCSL	LAEEAIHAAL	WDYAEKNGIK	TE-GLEKPKS
245012_bproducing@YP_007810477	NKAVMEALDG	LPPVKVHCSL	LAEEAIHAAL	WDYAEKNGIK	TE-GLEKPKS
657313_Rtorques@YP_007786815	NKAVMEALDG	LPPVKVHCSL	LAEEAIHAAL	WDYAEKHDIK	TE-GLKKPKS
245018_bproducing@YP_007788847	NKAVMEALDG	LPPVKVHCSL	LAEEAIHAAL	WDYAEKNGIK	TE-GLEKPKT
585394_Rhominis@YP_004837975	NKAVMEALDG	LPPVKVHCSL	LAEEAIHAAL	WDYAEKHNIK	TE-GLEKPKN
1054217_Tarchaeon@YP_007688600	NKAVMEALGG	LPPVKIHCSL	LAEEAIHAAL	WDYACKNGIV	TE-GLKAPKH
657323_Rsp@YP_007784833	NKAVMEALDG	LPPVKIHCSL	LAEEAIHAAL	WDYAEKHHIK	TE-GLSKPKS
657314_Robeum@YP_007804234	NKAVMEALDG	LPPVKVHCSL	LAEEAIHAAL	WDYACKHGIV	TE-GLDKPKS
717962_Ccatus@YP_007770008	NKAVMEALDG	LPPVKVHCSL	LAEEAIHAAL	WDYAEKNGIK	TE-GLDKPKN
552811_Dlykanthroporep@YP_003758020	NKAVADALGG	LPPVKMHCSV	LAEEALKKAI	ENYYERQGEK	PP-FETTPSS
246194_Chydrogenofoma@YP_361011	NKAVADALDG	LPPQKMHCNS	LAADALKVAI	EDYLKKKQK	-----
696281_Druminis@YP_004546667	NKSVAEALEG	LPPAKMHCSN	LAADALKAAI	EDYLKKKQDR	-----
868595_Dcarboxydivoran@YP_004497987	NKAVAEALDG	LPPVKMHCSN	LAADALKAAI	EDYLKKKQAA	-----
349161_Dreducens@YP_001112128	NKAVAEALEG	LPPAKMHCSN	LAADALKVAI	EDYLKKKQNV	-----
634498_Mruminantium@YP_003424309	RNDVADALDG	LPPIKMHCSN	LAADALAEAI	KDYKEKQEE	-----
406327_Mvanniellii@YP_001322697	KSDVADALDG	LPPVKMHCSN	LAADALHAAI	ADYLEKCKIN	P-----
679901_Mzhilinae@YP_004616912	RDEVADELEG	LPPVKMHCSN	LAADGLHAAI	EDYLKKKNDQ	-----
224719_Msp@YP_008075510	RKDVADELEG	LPPIKMHCSN	LAADALRAAI	EDYRKKQDNT	-----
339860_Mstadthanae@YP_448034	RNDVADELDG	LPPIKLHCSN	LAADALQAAI	ENYREKKEK	EL-----
1295009_CMethanomassili@YP_008071572	RNDVAGLGG	LPEKKLHCSN	MAADALKAAI	EDYKNKSA	-----
420247_Msmithii@YP_001272836	RNDVAEELDG	LPPVKMHCSN	LAADALKAAI	DNYYEKSN	-----
1041930_Mconradii@YP_005380864	RKDVADELEG	LPPQKMHCNS	LAADGLKLA	ENYRRKLQGL	PP-KSGVTSG
304371_Mpaludicola@YP_003355464	RNDVAKELEG	LPPQKMHCNS	LAADALKLA	ENYRRKLQGL	PP-RTGVTEG
1379702_Msp@YP_008915990	RDDVAEELGG	LPPVKMHCSN	LAADALRAAI	ADYKMKQAEK	ET-ENSSSEK
351160_Marvoryzae@YP_686139	RDDVAEELDG	LPPQKMHCNS	LAEEALTAAI	EDYRKKQAAK	K-----
990316_Mconcilii@YP_004384883	RDDVAGELGG	LPPQKLHCSN	LGADALRAAI	KDYWVVKIGKI	SP-CEAAVEE
521011_Mpalustris@YP_002466708	RDDVADELDG	LPPRKMHCNS	LAADALHAAI	EDYRKKTEG	-----
1201294_Mbourgensis@YP_006544991	RDDVAELEG	LPPRKMHCNS	LAADALHAAI	RDYLEKCKKA	-----
368407_Mmarisnigri@YP_001048051	RDDVAEELDG	LPPRKMHCNS	LAADALHAAI	EDYREKQKKE	-----
635013_Tpotens@YP_003640662	NKAVAEALGG	LPPQKMHCNS	LAADALHAAI	EDYKNKAAGG	Q-----
457570_Nthermophilus@YP_001916489	NKDVAEELDG	LPPKMLHCSN	LAADALTKAI	KNYLGEEDDE	EQ-EHEDESN
574087_Aarabaticum@YP_003827335	NSEVAEALDG	LPEKMHCSN	LAADALONAI	NNYKGIEDDD	VC-THCEDIS
748449_Hhalobius@YP_007315822	NEAVAEALGG	LPAQKMHCNS	LAADALQKAI	DDYLGIEREY	EE-----
338963_Pcarbinolicum@YP_006717600	NDDVADALGG	LPAQKLHCSN	LAADALHEAI	KNYQETNA	-----
498761_Hmodesticulum@YP_001680434	NRAVADALGG	LPPQKMHCNS	LAADALHAAI	ADYKAKQEA	R-----
768704_Dmeridiei@YP_006620851	NKAVAEALGG	LPEKMHCSN	LAADALHAAI	ENYRDNHOKK	E-----
768706_Dorientis@YP_004969159	NAVAEALGG	LPPAKMHCSN	LAADALHEAI	KNYRDKQKKE	-----
1147129_Dsp@YP_006909410	NAVAEALGG	LPEAKLHCSN	LAADAVHEAI	KDYICCKTKV	-----
138119_Dhafniense@YP_518658	NAVAEALDG	LPPAKMHCSN	LAADALHAAI	KDYKEKTLV	-----
645991_Sglycolicus@YP_004266248	NAVAEALDG	LPPVKMHCSN	LAADAVHAAI	KDYHEKQKTKV	-----
646529_Dacidiphilus@YP_006467680	NAVAEALGG	LPPAKMHCSN	LAADALHAAI	KDYHEKQKKE	E-----
272564_Dhafniense@YP_002460033	NAVAEALDG	LPPAKMHCSN	LAADALHEAI	KNYHEKTLKV	-----
756499_Ddehalogenans@YP_006431093	NAVAEALDG	LPPAKMHCSN	LAADALHEAI	KDYHCKTLKV	-----
871963_Ddichloroelimin@YP_007221311	NAVAEALDG	LPPAKMHCSN	LAADALHEAI	KDYHEKHKAK	-----
767817_Dgibsoniae@YP_007945765	NKAVAEALGG	LPPKMLHCSN	LAADALHAAI	EDYRSKQK	-----
485916_Dacetoxidans@YP_003191710	NAVAEALDG	LPPKMHCSN	LAADALHAAI	KDYQEKHKSA	-----
555079_Toceani@YP_003825515	NKAVADALGG	LPPVKMHCSN	LAADALHAAI	EDYKMKKESK	NVVEQK-----
349307_Mthermophila@YP_843171	RNDVADALDG	LPPQKMHCNS	LAADALHAAI	NDYLSKCKKH	-----
760568_Dkuznetsovii@YP_004517387	NKQVAEALDG	LPPQKMHCNS	LAADALHAAI	QDYLSKCKKKE	A-----
373903_Horenii@YP_002508640	KETVAEALDG	LPSNKMHCNS	LAADALHAAI	KSYNKKDNSD	NS-GKENDTL
370438_Pthermopropioni@YP_001211605	NKHVADMLGG	LPPQKMHCNS	LAADALYKAI	EDYKSRQAG	-----
264732_Mthermoacetica@YP_430496	NKAVAEALDG	LPPQKMHCNS	LAADALHAAI	EDYONRNKKA	S-----
96561_Doleovorans@YP_001528642	NKDVAEALGG	LPPKMLHCSN	LGADALQMAI	KDYEDRCKAGK	VR-PELKRKE
471821_uTermite@YP_001956213	NADVAKALGG	LPSNKMHCNS	LGADALHAAI	ENYNSKQV	-----
429009_Adegensii@YP_003238425	NKDVAEALGG	LPPQKLHCSN	LGADALHAAI	EDYLARKKEX	EA-GDDGNKP
706587_Dtiedjei@YP_006449617	NKVIDALNG	LPPKMLHCSN	LGADALHAAI	EDYRSKCKGK	TA-ERPLDGP
589924_Fplacidus@YP_003435557	KKTVAEALGG	LPPQKMHCNS	LAEEALKRAI	ADYLKCKQRI	DE-LKRLGLD
224325_Afulgidus@NP_069024	RDAVAEALGG	LPPQKMHCNS	LAADALRAAI	VDFYRKNKGI	DK-IKELGLE
224325_Afulgidus@NP_069399	RDAVAEALGG	LPPQKMHCNS	LAADALRAAI	VDFYRKNKGI	DK-IKELGLE
416591_Tlettingae@YP_001470347	WKDIVERLGG	LPPVKYHCSN	LAVDTLRKA	KEYEESLARK	-----
688269_Tthermarum@YP_004660083	WKDIVERLGG	LPPVKYHCSN	LAVDTLRKA	EYKSLARK	-----
374847_CKorarchaeum@YP_001737319	WQVIAEALGG	LPPVKKHCSI	LAVGALRAAI	RRYFGD--NL	PE-WLPKDLT
583356_Iaggregans@YP_003860035	WQVIAEALGG	LPPVKKHCSI	LAVGALRAAI	RAYKCKIGEH	PE-WLPKELV
272947_Rprowazekii@NP_220862	NTEIAKEL-S	LPPVKLHCSL	LAEDAIIKAAI	ADYKCKRENK	KD-S-----
1282356_Ppoeae@YP_007398800	NTQIAEEL-A	LPPVKIHCSV	LAEDAIIKAAV	RDYKCKKGLI	-----
994484_Pbrassicacearum@YP_004352099	NTQIAEEL-A	LPPVKIHCSV	LAEDAIIKAAV	RDYKCKKGLI	-----
882944_Languillarum@YP_008488748	NSEIAEEL-E	LPPVKVHCSI	LAEDAIIKAAV	ADYKCKHQ	-----
1167634_Axylosoxidans@YP_008032542	NTQIAEEL-A	LPPVKVHCSI	LAEDAIIKAAV	QNYKEKHSVP	AE-AVAS---
257311_Bparapertussis@NP_884287	NTQIAEEL-A	LPPVKIHCSI	LAEDAIIKAAV	QDYKTKHGAE	TP-EAFAAN-
1017264_Bpertussis@YP_005589900	NTQIAEEL-A	LPPVKIHCSI	LAEDAIIKAAV	QDYKTKHGAE	TP-EAFAAN-
284812_Spombe@NP_592967	NTQIAKEL-C	LPPVKLHCSM	LAEDAIIKAAV	KHYRKKGLTP	VG-TTAGAIE
559292_Scerevisiae@NP_014869	NTEIAKEL-S	LPPVKLHCSM	LAEDAIIKAAI	KDYKTKRNPS	VILH-----
559292_Scerevisiae@NP_015190	NTEIAKEL-S	LPPVKLHCSM	LAEDAIIKAAI	KDYKSKRNTP	TM-LS-----
9606_Hsapiens@NP_998760	NTDIAKEL-C	LPPVKLHCSM	LAEDAIIKAAI	ADYKLLQEPK	KG-EAEKK--
9606_Hsapiens@NP_055116	NTDIAKEL-C	LPPVKLHCSM	LAEDAIIKAAI	ADYKLLQEPK	KG-EAEKK--
3702_Athaliana@NP_193953	NTEIAKHL-S	LPPVKLHCSM	LAEDAIIKAAV	KDYKEKRVKT	NG-AAAAGET
3702_Athaliana@NP_192317	NSQIAKHL-S	LPPVKLHCSM	LAEDAIIKAAI	KNYKEKQDKA	NG-ETVETID
3702_Athaliana@NP_186751	NTEIAKHL-R	LPPVKLHCSM	LAEDAIIKAAV	RDYKEKQAKT	NA-AAAEEIV
7227_Dmelanogaster@NP_649840	NTDIAKEL-R	LPPVKLHCSM	LAEDAIIKAAI	KDYKVKQCKK	VA-N-----
6239_Celegans@NP_502658	NDEIAKEL-C	LPPVKLHCSM	LAQDAIQAAI	ADYKCKQTKK	A-----

243233_Mcapsulatus@YP_112782	-AA	-----	-----	-----
458817_Shelifaxensis@YP_001673798		-----	-----	-----
398579_Spealeana@YP_001501349		-----	-----	-----
557598_Lhongkongensis@YP_002796852		-----	-----	-----
521006_Ngonorrhoeae@YP_002001906		-----	-----	-----
489653_Nlactamica@YP_004048810		-----	-----	-----
935589_Nmeningitidis@YP_005903962		-----	-----	-----
395495_Lcholodnii@YP_001790394	-KAAA	-----	-----	-----
999541_Bgladioli@YP_004361365		-----	-----	-----
983917_Rgelatinosus@YP_005439140	-SPSSPDQQH SEAA	-----	-----	-----
1416914_Ppnomenusa@YP_008837319		-----	-----	-----
1380774_Psp@YP_008881415		-----	-----	-----
1249661_Bthailandensis@YP_007917844		-----	-----	-----
320388_Bmallei@YP_993528		-----	-----	-----
536230_Bpseudomallei@YP_002897469		-----	-----	-----
395019_Bmultivorans@YP_001579332		-----	-----	-----
626418_Bglumae@YP_002912250		-----	-----	-----
365044_Pnaphthalenivor@YP_981803	-QPVCASSTP APTL	-----	-----	-----
266265_Bxenovorans@YP_553871	-ADQPVCSN PN	-----	-----	-----
269482_Bvietnamiensis@YP_001115172	-VCTSTPN	-----	-----	-----
583345_Mmobilis@YP_003049105		-----	-----	-----
666681_Mversatilis@YP_003674921		-----	-----	-----
391038_Bphymatum@YP_001857685		-----	-----	-----
398577_Bambifaria@YP_001808732		-----	-----	-----
269482_Bvietnamiensis@YP_001120041		-----	-----	-----
406425_Bcenocepacia@YP_001765425		-----	-----	-----
1009846_Bcepacia@YP_006615433		-----	-----	-----
482957_Blata@YP_369669		-----	-----	-----
748280_Psp@YP_004848592		-----	-----	-----
1229205_Bphenoliruptrix@YP_006834626		-----	-----	-----
1163617_Sdenitrificans@YP_008546117	-DCSK	-----	-----	-----
266265_Bxenovorans@YP_559453		-----	-----	-----
398527_Bphytofirmans@YP_001896197		-----	-----	-----
375286_Jsp@YP_001352943		-----	-----	-----
204773_Harsenicoxydans@YP_001100494		-----	-----	-----
580332_Slithotrophicus@YP_003524869	-K	-----	-----	-----
159087_Daromatica@YP_285167		-----	-----	-----
882378_Brhizoxinica@YP_004029636	-EAAA	-----	-----	-----
85643_Tsp@YP_002355840		-----	-----	-----
757424_Hseropedicae@YP_003776230	-PKOYPICAP IAD	-----	-----	-----
522306_Caccumulibacter@YP_003167247		-----	-----	-----
76114_Aaromaticum@YP_160687		-----	-----	-----
381666_Reutropha@YP_725668		-----	-----	-----
977880_Ctaiwanensis@YP_002005171		-----	-----	-----
1042878_Cnecator@YP_004684939		-----	-----	-----
266264_Cmetallidurans@YP_583181		-----	-----	-----
395494_Gcapsiferiform@YP_003846450	-C	-----	-----	-----
859655_Rsolanacearum@YP_005996961		-----	-----	-----
402626_Rpickettii@YP_001898467		-----	-----	-----
543913_bproteobacteriu@YP_007502653		-----	-----	-----
62928_Asp@YP_933519		-----	-----	-----
640081_Dsuillum@YP_005028573		-----	-----	-----
452638_Pnecessarius@YP_001797351		-----	-----	-----
292415_Tdenitrificans@YP_314923		-----	-----	-----
265072_Mflagellatus@YP_544916		-----	-----	-----
582744_Mglucosetrophus@YP_003051619		-----	-----	-----
887061_Msp@YP_004040241		-----	-----	-----
891398_CTremblaya@YP_004707015		-----	-----	-----
426114_Tarsenitoxydans@YP_003623866	-AQAA	-----	-----	-----
75379_Tintermedia@YP_003642782	-AQAA	-----	-----	-----
937774_Tequigenitalis@YP_004130301		-----	-----	-----
1008459_Tasinigenitalis@YP_004874474		-----	-----	-----
634503_Eictaluri@YP_002934567		-----	-----	-----
718251_Etarda@YP_005700147		-----	-----	-----
259536_Parcticus@YP_264760		-----	-----	-----
335284_Pcryohalolentis@YP_580918		-----	-----	-----
571800_Psp@YP_008163576		-----	-----	-----
420662_Mpetroleiphilum@YP_001021452		-----	-----	-----
243365_Cviolaceum@NP_900763		-----	-----	-----
1208919_CKinetoplastiba@YP_007459239		-----	-----	-----
983545_Gsp@YP_004435367		-----	-----	-----
342610_Patlantica@YP_660819		-----	-----	-----
743299_Aferrivorans@YP_004783591	-SAQAAH	-----	-----	-----
243159_Aferrooxidans@YP_002425162	-CAQAAH	-----	-----	-----
1005048_Cfungivorans@YP_004753777		-----	-----	-----
669502_CProffftella@YP_008343646		-----	-----	-----
757424_Hseropedicae@YP_003776535		-----	-----	-----
395495_Lcholodnii@YP_001790080		-----	-----	-----
257310_Bbronchiseptica@NP_888820		-----	-----	-----
990288_Acaldus@YP_004748177	-AASH	-----	-----	-----
990288_Acaldus@YP_004748110		-----	-----	-----
983917_Rgelatinosus@YP_005436383		-----	-----	-----
360910_Bavium@YP_786035		-----	-----	-----
1036672_Akashmirensis@YP_006379415		-----	-----	-----
340100_Bpetrii@YP_001631386	-AAVAN	-----	-----	-----
523791_Kkoreensis@YP_003146685		-----	-----	-----
156889_Mmarinus@YP_866958		-----	-----	-----

404589_Asp@YP_001377835	-GDR	AELLER	GVLK	SGI	---	---	---	---
290397_Adehalogenans@YP_463806	-GDR	SALIEK	GVLK	SGI	---	---	---	---
447217_Asp@YP_002132996	-GDR	SALIEK	GVLK	SGI	---	---	---	---
455488_Adehalogenans@YP_002491042	-GDR	SALIEK	GVLK	SGI	---	---	---	---
378806_Saurantiaca@YP_003955403					---	---	---	---
246197_Mxanthus@YP_633158					---	---	---	---
483219_Mfulvus@YP_004669542					---	---	---	---
1144275_Ccoralloides@YP_005368444					---	---	---	---
1278073_Mstipitatus@YP_007362455					---	---	---	---
448385_Scellulosum@YP_001617979	-VP	AAAAATA	SAE		---	---	---	---
399739_Pmendocina@YP_001188990					---	---	---	---
1294143_Pdenitrificans@YP_007659193					---	---	---	---
208964_Paeruginosa@NP_252502					---	---	---	---
322710_Avinelandii@YP_002801150					---	---	---	---
644801_Pstutzeri@YP_007239445					---	---	---	---
1207075_Psp@YP_007027941					---	---	---	---
1114970_Pfluorescens@YP_005206437					---	---	---	---
220664_Pprotogens@YP_262044					---	---	---	---
351746_Pputida@YP_001266219					---	---	---	---
1435058_Pmonteilii@YP_008958359					---	---	---	---
743720_Pfulva@YP_004475358					---	---	---	---
264730_Psyringae@YP_273568					---	---	---	---
384676_Pentomophila@YP_606728					---	---	---	---
1430440_Mgryphiswaldens@YP_008937260					---	---	---	---
749219_Mcatarrhalis@YP_003626770					---	---	---	---
62977_Asp@YP_046090					---	---	---	---
436717_Aoleivorans@YP_003732380					---	---	---	---
400667_Abaumannii@YP_001084660					---	---	---	---
871585_Acalcoaceticus@YP_004995269					---	---	---	---
511062_Osp@YP_005091814					---	---	---	---
318167_Sfrigidimarina@YP_751106					---	---	---	---
326297_Samazonensis@YP_927171					---	---	---	---
318161_Sdenitrificans@YP_562467					---	---	---	---
167879_Cpsychrerythrae@YP_267876					---	---	---	---
637905_Sviolacea@YP_003556341					---	---	---	---
225849_Spiezotolerans@YP_002311055					---	---	---	---
323850_Sloihica@YP_001094441					---	---	---	---
425104_Ssediminis@YP_001474605					---	---	---	---
392500_Swoodyi@YP_001760156					---	---	---	---
60481_Ssp@YP_737869					---	---	---	---
211586_Soneidensis@NP_717861					---	---	---	---
693973_Sbaltica@YP_005273706					---	---	---	---
399804_Sputrefaciens@YP_006009782					---	---	---	---
298386_Sprofundum@YP_128966					---	---	---	---
28173_Vnigripulchritu@YP_008621944					---	---	---	---
1219076_Valginolyticus@YP_008537102					---	---	---	---
150340_Vsp@YP_003286982					---	---	---	---
345073_Vcholerae@YP_001216234					---	---	---	---
223926_Vparahaemolytic@NP_796976					---	---	---	---
882102_Vanguillarum@YP_004566935					---	---	---	---
575788_Vsplendidus@YP_002416251					---	---	---	---
1129794_Vpsychrophila@YP_007545568					---	---	---	---
196600_Vvulnificus@NP_933549					---	---	---	---
903510_Vfurnissii@YP_004993913					---	---	---	---
338187_Vcampbellii@YP_001444276					---	---	---	---
338187_Vcampbellii@YP_008526292					---	---	---	---
314282_Psp@YP_007639631					---	---	---	---
357804_Pingrahamii@YP_942749					---	---	---	---
326442_Phaloplanktis@YP_341160					---	---	---	---
234831_Psp@YP_004067531					---	---	---	---
595494_Tauensis@YP_002893203					---	---	---	---
396588_Tsulfidiphilus@YP_002513559					---	---	---	---
396588_Tsulfidiphilus@YP_002514125					---	---	---	---
998088_Averonii@YP_004393031					---	---	---	---
380703_Ahydrophila@YP_856284					---	---	---	---
382245_Asalmonicida@YP_001142383					---	---	---	---
342108_Mmagneticum@YP_422390					---	---	---	---
1245471_Presinovorans@YP_008101472					---	---	---	---
365044_Pnaphthalenivor@YP_982518					---	---	---	---
296591_Psp@YP_549004					---	---	---	---
232721_Asp@YP_986388					---	---	---	---
535289_Aebreus@YP_002553097					---	---	---	---
365046_Rtataouinensis@YP_004618947					---	---	---	---
946483_CSymbiobacter@YP_008681130					---	---	---	---
312309_Vfischeri@YP_204001					---	---	---	---
595537_Vparadoxus@YP_004156043	-H				---	---	---	---
316275_Asalmonicida@YP_002262235					---	---	---	---
391735_Veiseniae@YP_997138					---	---	---	---
397945_Acitrullii@YP_970793					---	---	---	---
643561_Aavenae@YP_004235248					---	---	---	---
398578_Dacidovorans@YP_001565014					---	---	---	---
742013_Dsp@YP_004488168					---	---	---	---
338969_Aferrireducens@YP_523433					---	---	---	---
596154_Adenitrificans@YP_004388278					---	---	---	---
688245_Ctestosteroni@YP_003278774					---	---	---	---
1266738_Pmirabilis@YP_008398502					---	---	---	---
1124991_Mmorganii@YP_007505117					---	---	---	---
406817_Xnematophila@YP_003713469					---	---	---	---

291112_Pasymbiotica@YP_003040200	----	----	----	----
243265_Pluminescens@NP_930506	----	----	----	----
406818_Xbovienii@YP_003468915	----	----	----	----
273123_Ypseudotubercul@YP_071365	----	----	----	----
393305_Yenterocolitica@YP_001005390	----	----	----	----
1346614_Sliquefaciens@YP_008231656	----	----	----	----
1348660_Splymuthica@YP_008160622	----	----	----	----
399741_Sproteamaculans@YP_001479850	----	----	----	----
1249634_Smarcescens@YP_007345780	----	----	----	----
187410_Ypestis@NP_668657	----	----	----	----
1157951_Pstuartii@YP_006215182	----	----	----	----
344609_Sboydii@YP_001881320	----	----	----	----
104623_Ssp@YP_008524031	----	----	----	----
561229_Dzeae@YP_003003456	----	----	----	----
590409_Ddadantii@YP_003334610	----	----	----	----
561230_Pcarotovorum@YP_003018589	----	----	----	----
561231_Pwasabiae@YP_003258666	----	----	----	----
1166016_Psp@YP_006282128	----	----	----	----
218491_Patrosepticum@YP_051325	----	----	----	----
99287_Senterica@NP_461477	----	----	----	----
218493_Sbongori@YP_004731144	----	----	----	----
290339_Csakazakii@YP_001436836	----	----	----	----
693216_Cturicensis@YP_003211492	----	----	----	----
399742_Esp@YP_001177741	----	----	----	----
640513_Easburiae@YP_004829762	----	----	----	----
693444_Ebacterium@YP_007339349	----	----	----	----
290338_Ckoseri@YP_001451852	----	----	----	----
484021_Kpneumoniae@YP_002920722	----	----	----	----
637910_Crodentium@YP_003366009	----	----	----	----
640131_Kvariicola@YP_003438138	----	----	----	----
1191061_Koxytoca@YP_006500071	----	----	----	----
1286170_Rornithinolytic@YP_007872306	----	----	----	----
511145_Ecoli@NP_417024	----	----	----	----
585054_Efergusonii@YP_002381825	----	----	----	----
198214_Sflexneri@NP_708368	----	----	----	----
216599_Ssonnei@YP_005457544	----	----	----	----
300267_Sdysenteriae@YP_404261	----	----	----	----
716541_Ecloacae@YP_003614361	----	----	----	----
701347_Elignolyticus@YP_003940771	----	----	----	----
630626_Sblattae@YP_006318650	----	----	----	----
1028307_Eaerogenes@YP_004590373	----	----	----	----
557723_Hparasuis@YP_002474707	----	----	----	----
1005058_Ganatis@YP_004420698	----	----	----	----
1075089_Pmultocida@YP_005176279	----	----	----	----
205914_Hsomnus@YP_718490	----	----	----	----
1171377_Btrehalosi@YP_007548422	----	----	----	----
233412_Hducreyi@NP_873560	----	----	----	----
416269_Apleuropneumoni@YP_001053631	----	----	----	----
696748_Asuis@YP_006816777	----	----	----	----
1366053_Mhaemolytica@YP_008338465	----	----	----	----
1334187_Hinfluenzae@YP_008544790	----	----	----	----
634176_Aaphrophilus@YP_003007650	----	----	----	----
694569_Aactinomycetemc@YP_006286355	----	----	----	----
862965_Hparainfluenzae@YP_004822800	----	----	----	----
221988_Msucciniciprodu@YP_088916	----	----	----	----
339671_Asuccinogenes@YP_001344170	----	----	----	----
550540_Fbalearica@YP_003914035	----	----	----	----
396595_Tsp@YP_003460082	----	----	----	----
413404_CRuthia@YP_903798	----	----	----	----
412965_CVesicomysociu@YP_001219373	----	----	----	----
1208921_CKinetoplastiba@YP_007448562	----	----	----	----
561501_Baphidicola@YP_002468877	----	----	----	----
357244_Otsutsugamushi@YP_001248706	----	----	----	----
1003201_Rtyphi@YP_005427548	----	----	----	----
1105111_CRickettsia@YP_005365544	----	----	----	----
272944_Rconorii@NP_360366	----	----	----	----
452659_Rrickettsii@YP_001650107	----	----	----	----
347255_Rafricae@YP_002845312	----	----	----	----
562019_Rpeacockii@YP_002916645	----	----	----	----
1105113_Rrhipicephali@YP_005390607	----	----	----	----
416276_Rmassiliae@YP_001499486	----	----	----	----
1105108_Rparkeri@YP_005392983	----	----	----	----
1105114_Rmontanensis@YP_005391246	----	----	----	----
1032845_Rheilongjiangen@YP_004764467	----	----	----	----
652620_Rjaponica@YP_004884928	----	----	----	----
481009_Rphilipii@YP_005300823	----	----	----	----
1105109_Rslovaca@YP_005426472	----	----	----	----
1105107_Rcanadensis@YP_005299497	----	----	----	----
336407_Rbellii@YP_538116	----	----	----	----
315456_Rfelis@YP_246860	----	----	----	----
293614_Rakari@YP_001493572	----	----	----	----
1105110_Raustralis@YP_005414962	----	----	----	----
434131_Nristicii@YP_003081518	----	----	----	----
222891_Nsennetsu@YP_506192	----	----	----	----
330214_CNitrospira@YP_003799619	----	----	----	----
984262_Sgrandis@YP_005322201	----	----	----	----
100901_Wendosymbiont@YP_006555868	----	----	----	----
66084_Wsp@YP_002727379	----	----	----	----

TDNKS
TENKS

1423892_Emuris@YP_008929080	----	----	----	----
574556_Acentrale@YP_003328545	----	----	----	----
320483_Amarginale@YP_002563600	----	----	----	----
1184253_Aphagocytophilu@YP_008332775	----	----	----	----
205920_Echaffeensis@YP_507440	----	----	----	----
254945_Eruminantium@YP_180281	----	----	----	----
254945_Eruminantium@YP_197308	----	----	----	----
269484_Ecanis@YP_303050	-E-	----	----	----
517418_Cthalassium@YP_001997584	----	----	----	----
485917_Pheparinus@YP_003091837	----	----	----	----
762903_Psaltans@YP_004273747	----	----	----	----
929556_Scanadensis@YP_006255074	----	----	----	----
760192_Hhydrossis@YP_004446110	----	----	----	----
1162668_Lferrooxidans@YP_005469656	----	----	----	----
1048260_Lferriphilum@YP_006765680	----	----	----	----
240015_Acapsulatum@YP_002755573	-AAC-	----	----	----
204669_CKoribacter@YP_589562	----	----	----	----
1198114_Gtundricola@YP_004219465	-AH-	----	----	----
926566_Troseus@YP_006423699	-SA-	----	----	----
401053_Tsaanensis@YP_004180969	-AVN-	----	----	----
682795_Gmallensis@YP_005055878	-H-	----	----	----
696127_CMidichloria@YP_004679282	----	----	----	----
871271_CZindieria@YP_003878048	----	----	----	----
657324_Bfibrisolvens@YP_007819038	-EVE SCHMH-	----	----	----
768670_Cnitroreducens@YP_004051749	-KIKNRVKS-	----	----	----
717231_Fsinusarabici@YP_004603876	-KIKNKETNC-	EV	----	----
639282_Ddesulfuricans@YP_003496772	-KIKTEIAS-	----	----	----
522772_Dacetiphilus@YP_003503972	-KVKKDN-	----	----	----
693746_Ovalericigenes@YP_004880314	-DCEHCAGE-	----	----	----
657321_Rbromii@YP_007781362	-ECDSCGCEG-	----	----	----
657322_Fprausnitzii@YP_007799942	-EDCEHCESC-	GN	----	----
213810_Rchampanellensi@YP_007828576	-ECGCGCEG-	----	----	----
657319_[siraeum@YP_007775950	-DDHCDSCCG-	I	----	----
293826_Ametalliredigen@YP_001320267	-NDDHDDHDD-	IEEE	----	----
350688_Aoremlandii@YP_001513205	-DEDHDDHDE-	EEEE	----	----
546269_Falocis@YP_005054244	-EDHEHDHE-	----	----	----
1511_[sticklandii@YP_003936518	-DDDHDHDD-	IEED	----	----
699034_Pdifficile@YP_006198328	-DDAHDDVE-	EEE	----	----
1128398_[acidurici@YP_006788189	-DDEDLHAH-	GHDEE	----	----
572544_Ipolytropus@YP_003967871	----	----	----	----
469604_Fnucleatum@YP_008477745	----	----	----	----
580340_Tlienii@YP_004932350	----	----	----	----
891968_Amobile@YP_006444325	-CAKA-	----	----	----
525903_Tacidaminovorana@YP_003316727	-FSHHEDEEG-	MESRAAD	----	----
697281_Maustraliensis@YP_004463371	-EHIHDCADD-	EAANG	----	----
309799_Dthermophilum@YP_002251521	----	----	----	----
368407_Mmarisnigri@YP_001047821	-CSGEGGCDS-	CPGND	----	----
903814_Elimosum@YP_003961665	----	----	----	----
931626_Awoodii@YP_005268656	----	----	----	----
410358_Mlabreanum@YP_001029708	-CCHDCDTCE-	L	----	----
679926_Mpetrolearius@YP_003895855	-EHHH-	----	----	----
86416_Cpasteurianum@YP_007940944	-AIHEHVHGN-	----	----	----
929506_Cbotulinum@YP_004396224	-HIHDEVHGX-	----	----	----
386415_Cnovyi@YP_878355	-HIHDEVHGX-	----	----	----
748727_Cljungdahlii@YP_003779382	-TIHEHVHGN-	----	----	----
1341692_Ccautoethanogenu@YP_008700753	-TIHEHVHGN-	----	----	----
747365_Tnarugense@YP_004437867	-VIEKHQCNN-	----	----	----
651822_Ffastidiosum@YP_007827223	----	----	----	----
572547_Acolombiense@YP_003553035	-LVDEHSHHF-	HHQG	----	----
212717_Ctetani@NP_781697	-HIHDEVHGC-	----	----	----
431943_Ckluveri@YP_001394709	-TIHEHVHGO-	----	----	----
573061_Ccellulovorans@YP_003843335	-HIHEEVHGH-	----	----	----
508767_Cbotulinum@YP_001920515	-DELHNMVHGE-	E	----	----
931276_Csaccharoperbut@YP_007454264	-EDLHAAVHGE-	E	----	----
290402_Cbeijerinckii@YP_001308237	-EDLHAAVHGE-	E	----	----
1345695_Csaccharobutyli@YP_008674363	-DLHDMVHGE-	----	----	----
269797_Mbarkeri@YP_305925	----	----	----	----
188937_Macetivorans@NP_617616	----	----	----	----
195103_Cperfringens@YP_696469	-DIHEHVHC-	----	----	----
593750_Mformicica@YP_007249963	-HEHEDVTCE-	H	----	----
456442_Mboonei@YP_001405283	-HEHEEGIEC-	OH	----	----
521011_Mpalustris@YP_002466865	-HEADACDIP-	PSE	----	----
323259_Mhungatei@YP_503638	-HSHDDLACE-	E	----	----
547558_Mmahii@YP_003541558	----	----	----	----
644295_Mvestigatum@YP_003727500	-PE-	----	----	----
351627_Csaccharolyticu@YP_001181022	----	----	----	----
521460_Cbescii@YP_002573580	----	----	----	----
632292_Chydrothermalis@YP_003992133	----	----	----	----
632348_Ckronotskyensis@YP_004023692	----	----	----	----
632335_Ckristjanssonii@YP_004026829	----	----	----	----
632516_Clactoaceticus@YP_004798736	----	----	----	----
608506_Cobsidiensis@YP_003840166	----	----	----	----
632518_Cowensensis@YP_004002802	----	----	----	----
1121335_[stercorarium@YP_007372524	-CCKCETESE-	DSEE	----	----
1121335_[stercorarium@YP_007678972	-CCKCETESE-	DSEE	----	----
755731_Csp@YP_005148252	-GECSCCHHS-	HGREEDFEDE	E	----
394503_Ccellulolyticum@YP_002506259	-GECSCCHHS-	HGREENFEDE	E	----
720554_[clariflavum@YP_005046370	-GRRCDLHH-	HLDEEDD	----	----

