附录 A 样本根瘤菌菌株数据

Strain	Accession	Genome Size(bp)	Assembly level
Aminobacter aminovorans DSM10368	GCA_014195595.1	6811076	Scaffold
Aminobacter aminovorans DSM7048	GCA_004341645.1	5848363	Scaffold
Aminobacter aminovorans KCTC2477	GCA_001605015.1	6890726	Complete
Aminobacter ciceronei DSM17455	GCA_014138635.1	6776230	Scaffold
Aminobacter ciceronei DSM15910	GCA_014138625.1	6774758	Scaffold
Aminobacter lissarensis DSM17454	GCA_014207495.1	6541127	Scaffold
Aminobacter sp. SR38	GCA_014843375.1	7367353	Complete
Aminobacter sp. AP02	GCA_003148805.1	5603683	Scaffold
Aminobacter sp. MSH1	GCA_003071665.1	5763649	Complete
Aminobacter sp. Root100	GCA_001424795.1	5239945	Scaffold
Aminobacter sp. J44	GCA_007829415.1	4186064	Scaffold
Aminobacter sp. J15	GCA_007829635.1	4216557	Scaffold
Azorhizobium caulinodans ORS571	GCA_000010525.1	5369772	Complete
Azorhizobium oxalatiphilum CCM7897	GCA_014635325.1	6396426	Scaffold
Azorhizobium sp. AG788	GCA_004364705.1	5474804	Scaffold
Azorhizobium sp. 12-66-6	GCA_002279595.1	1884067	Scaffold
Azorhizobium sp. 32-67-21	GCA_002280795.1	3919686	Scaffold
Azorhizobium sp. 35-67-5	GCA_002280945.1	1224050	Scaffold
Azorhizobium sp. 35-67-15	GCA_002281175.1	849782	Scaffold
Azorhizobium sp. 39-67-5	GCA_002282175.1	1811738	Scaffold
Bradyrhizobium amphicarpaeae 39S1MB	GCA_002266435.2	7068339	Complete
Bradyrhizobium arachidis CB756	GCA_021052265.1	9825352	Complete
Bradyrhizobium arachidis LMG26795	GCA_900116675.1	9793799	Scaffold
Bradyrhizobium arachidis CCBAU51107	GCA_015291705.1	9865973	Complete
Bradyrhizobium betae PL7HG1	GCA_008932115.1	7419402	Complete
Bradyrhizobium brasilense UFLA0613	GCA_012689435.1	9178787	Scaffold
Bradyrhizobium brasilense R5	GCA_900101405.1	9444915	Scaffold
Bradyrhizobium campsiandrae INPA384B	GCA_014530645.1	8871850	Scaffold
Bradyrhizobium campsiandrae INPA394B	GCA_014529705.1	9084813	Scaffold
Bradyrhizobium canariense WSM471	GCA_021052245.1	7785529	Complete
Bradyrhizobium canariense WU425	GCA_021052305.1	7868972	Complete
Bradyrhizobium canariense BTA-1	GCA_019402665.1	8561472	Scaffold
Bradyrhizobium canariense GAS369	GCA_900105125.1	7842044	Chromosome
Bradyrhizobium centrolobii BR10245	GCA_001641635.1	10111113	Scaffold
Bradyrhizobium cosmicum 58S1	GCA_007290395.1	7304136	Complete
Bradyrhizobium cosmicum S23321	GCA_000284275.1	7231841	Complete
Bradyrhizobium daqingense CCBAU15774	GCA_021044685.1	7998085	Complete
Bradyrhizobium daqingense CGMCC1.10947	GCA_007830205.1	7889191	Scaffold
Bradyrhizobium diazoefficiens CB1809	GCA_021052285.1	9136715	Complete
Bradyrhizobium diazoefficiens 36_1	GCA_016616885.1	8085095	Complete
Bradyrhizobium diazoefficiens 65_7	GCA_016599855.1	7100878	Complete
Bradyrhizobium diazoefficiens 38_8	GCA_016616235.1	7668734	Complete
Bradyrhizobium diazoefficiens 41_2	GCA_016616425.1	7144346	Complete
Bradyrhizobium diazoefficiens 113-2	GCA_013390305.1	8995154	Complete
Bradyrhizobium diazoefficiens 172S4	GCA_011604625.1	9157024	Complete
Bradyrhizobium diazoefficiens 110spc4	GCA_004359355.1	8910608	Complete

Strain	Accession	Genome Size(bp)	Assembly level
Bradyrhizobium diazoefficiens XF7	GCA_003183845.2	9269701	Complete
Bradyrhizobium diazoefficiens USDA122	GCA_001908315.1	9136536	Complete
Bradyrhizobium diazoefficiens F07S3	GCA_014163475.1	9432644	Complete
Bradyrhizobium diazoefficiens HF08	GCA_014163455.1	9109292	Complete
Bradyrhizobium diazoefficiens H12S4	GCA_014163435.1	9535585	Complete
Bradyrhizobium diazoefficiens HH15	GCA_014163415.1	9177979	Complete
Bradyrhizobium diazoefficiens NK6	GCA_001549695.1	10475157	Complete
Bradyrhizobium elkanii TnphoA33	GCA_001868735.1	9529806	Scaffold
Bradyrhizobium elkanii BLY3-8	GCA_001718205.1	9198916	Scaffold
Bradyrhizobium elkanii BLY6-1	GCA_001718185.1	9202572	Scaffold
Bradyrhizobium elkanii USDA61	GCA_012871055.1	9649995	Complete
Bradyrhizobium erythrophlei GAS401	GCA_900142985.1	7525217	Chromosome
Bradyrhizobium erythrophlei GAS242	GCA_900129505.1	9184751	Chromosome
Bradyrhizobium erythrophlei GAS138	GCA_900129425.1	9092136	Chromosome
Bradyrhizobium forestalis INPA54B	GCA_002795245.1	8252029	Scaffold
Bradyrhizobium genosp. BDV5419	GCA_015624485.1	7401610	Complete
Bradyrhizobium genosp. BDV5040	GCA_015624505.1	7622528	Complete
Bradyrhizobium guangdongense CCBAU51658	GCA_015291685.1	8436603	Complete
Bradyrhizobium guangdongense CCBAU51649	GCA_004114975.1	8437991	Complete
Bradyrhizobium guangdongense CGMCC1.15034	GCA_014640515.1	8371096	Scaffold
Bradyrhizobium guangzhouense CCBAU53426	GCA_004114445.1	8295279	Scaffold
Bradyrhizobium guangzhouense CCBAU53424	GCA_004114475.1	8281579	Scaffold
Bradyrhizobium guangzhouense CCBAU51670	GCA_004114955.1	8138177	Complete
Bradyrhizobium hipponense aSej3	GCA_008123965.1	8826946	Scaffold
Bradyrhizobium huanghuaihaiense CGMCC1.10948	GCA_007830635.1	9226856	Scaffold
Bradyrhizobium icense S2_003_000_R3_21	GCA_005768645.1	4907126	Scaffold
Bradyrhizobium icense LMTR13	GCA_001693385.1	8322773	Complete
Bradyrhizobium japonicum 5873	GCA_009864815.1	9160231	Scaffold
Bradyrhizobium japonicum J5	GCA_001887695.1	10138651	Complete
Bradyrhizobium japonicum E109	GCA_000807315.1	9224208	Complete
Bradyrhizobium japonicum Is-34	GCA_000773865.1	10326597	Scaffold
Bradyrhizobium japonicum SEMIA5079	GCA_000661935.1	9583027	Chromosome
Bradyrhizobium japonicum FN1	GCA_001038185.1	9138496	Scaffold
Bradyrhizobium japonicum USDA6	GCA_000284375.1	9207384	Complete
Bradyrhizobium jicamae PAC68	GCA_001440395.1	8738846	Scaffold
Bradyrhizobium lablabi MT34	GCA_900142345.1	8150968	Chromosome
Bradyrhizobium lablabi GAS499	GCA_900141755.1	7910099	Chromosome
Bradyrhizobium lablabi CCBAU23086	GCA_001440475.1	8817291	Scaffold
Bradyrhizobium macuxiense BR10355	GCA_007993935.1	8820234	Scaffold
Bradyrhizobium macuxiense BR10303	GCA_001542415.1	8722143	Scaffold
Bradyrhizobium manausense BR3351	GCA_001440035.1	9145311	Scaffold
Bradyrhizobium nanningense CCBAU51757	GCA_004114545.1	8226587	Scaffold
Bradyrhizobium nanningense CCBAU53390	GCA_004114535.1	8290088	Scaffold
Bradyrhizobium neotropicale BR10247	GCA_001641695.1	8679329	Scaffold
Bradyrhizobium nitroreducens TSA1	GCA_002776695.1	8199267	Scaffold
Bradyrhizobium oligotrophicum S58	GCA_000344805.1	8264165	Complete
Bradyrhizobium ottawaense OO99	GCA_002278135.2	8677102	Complete
Bradyrhizobium ottawaense GAS524	GCA_900099825.1	8339215	Chromosome
Bradyrhizobium pachyrhizi BR3262	GCA_001440015.1	8965178	Scaffold

Strain	Accession	Genome Size(bp)	Assembly level
Bradyrhizobium quebecense 12S5	GCA_017493175.3	8736748	Complete
Bradyrhizobium quebecense 66S1MB	GCA_013373795.3	9032145	Complete
Bradyrhizobium rifense CTAW71	GCA_008123425.1	9952932	Scaffold
Bradyrhizobium sacchari BR10556	GCA_007828095.1	8530034	Scaffold
Bradyrhizobium sacchari BR10555	GCA_007828015.1	8528547	Scaffold
Bradyrhizobium sacchari p9-20	GCA_002068095.1	8698798	Scaffold
Bradyrhizobium septentrionale 162S2	GCA_013373785.3	10733150	Complete
Bradyrhizobium septentrionale 1S1	GCA_011516645.4	10618843	Complete
Bradyrhizobium shewense ERR11	GCA_900094605.1	9163226	Scaffold
Bradyrhizobium sp bin51	GCA_020350345.1	5518564	Chromosome
Bradyrhizobium sp BF49_genome1	GCA_900011245.1	7547693	Complete
Bradyrhizobium sp. A19	GCA_021088345.1	8435845	Complete
Bradyrhizobium sp. S2-11-4	GCA_018736125.1	5477950	Complete
Bradyrhizobium sp. S2-11-2	GCA_018736105.1	5450494	Complete
Bradyrhizobium sp. S2-20-1	GCA_018736085.1	5554208	Complete
Bradyrhizobium sp. 144S4	GCA_017565645.3	11379120	Complete
Bradyrhizobium sp. 41S5	GCA_011516665.3	8493505	Complete
Bradyrhizobium sp. 63S1MB	GCA_011602485.1	7857137	Complete
Bradyrhizobium sp. PSBB068	GCA_016839165.1	7670478	Complete
Bradyrhizobium sp. 323S2	GCA_011068405.5	11527136	Complete
Bradyrhizobium sp. 1S3	GCA_011058295.1	10014235	Complete
Bradyrhizobium sp. I71	GCA_022354745.1	7832041	Complete
Bradyrhizobium sp. KBS0727	GCA_005937885.2	7315270	Complete
Bradyrhizobium sp. KBS0725	GCA_005937905.2	7319299	Complete
Bradyrhizobium sp. LCT2	GCA_009931255.1	9652610	Complete
Bradyrhizobium sp. SK17	GCA_002831585.1	8288568	Complete
Bradyrhizobium sp. CCBAU21365	GCA_015291305.1	9482549	Complete
Bradyrhizobium sp. CCBAU51765	GCA_015291725.1	8416216	Complete
Bradyrhizobium sp. CCBAU51753	GCA_015291565.1	9120519	Complete
Bradyrhizobium sp. CCBAU53421	GCA_015291625.1	9259049	Complete
Bradyrhizobium sp. CCBAU53338	GCA_015291665.1	8283608	Complete
Bradyrhizobium sp. CCBAU53340	GCA_015291645.1	8716512	Complete
Bradyrhizobium sp. CCBAU53351	GCA_015291745.1	8343321	Complete
Bradyrhizobium sp. CCBAU51011	GCA_009930815.1	9099371	Complete
Bradyrhizobium sp. BTAi1	GCA_000015165.1	8493513	Complete
Bradyrhizobium sp. CCGE-LA001	GCA_000296215.2	7386124	Complete
Bradyrhizobium sp. WSM471	GCA_000244915.1	7784016	Chromosome
Bradyrhizobium sp. ORS285	GCA_900176205.1	7797098	Complete
Bradyrhizobium sp. TM102	GCA_009176685.1	7363142	Complete
Bradyrhizobium sp. SG09	GCA_009176665.1	8442078	Complete
Bradyrhizobium stylosanthis BR510	GCA_007827835.1	8989507	Scaffold
Bradyrhizobium symbiodeficiens 101S1MB	GCA_011604665.1	6920286	Complete
Bradyrhizobium symbiodeficiens 141S2	GCA_011604645.1	7005100	Complete
Bradyrhizobium symbiodeficiens 65S1MB	GCA_006459165.1	7132395	Complete
Bradyrhizobium symbiodeficiens 85S1MB	GCA_002266465.2	7037054	Complete
Bradyrhizobium valentinum LmjM3	GCA_001440405.1	8845258	Scaffold
Bradyrhizobium vignae LMG28791	GCA_004114425.1	8175609	Scaffold
Bradyrhizobium yuanmingense CCBAU10071	GCA_900094575.1	8201522	Scaffold
Bradyrhizobium yuanmingense BR3267	GCA_001439885.1	7904309	Scaffold

Strain	Accession	Genome Size(bp)	Assembly level
Bradyrhizobium yuanmingense CGMCC1.3531	GCA_007830575.1	8195566	Scaffold
Bradyrhizobium zhanjiangense CCBAU51781	GCA_004114465.1	8230409	Scaffold
Bradyrhizobium zhanjiangense CCBAU51770	GCA_004114435.1	8665214	Scaffold
Bradyrhizobium zhanjiangense CCBAU51787	GCA_004114485.1	8587928	Scaffold
Cupriavidus neocaledonicus STM6082	GCA_900249875.1	6754933	Chromosome
Cupriavidus sp. MP-37	GCA_020618415.1	6114217	Complete
Cupriavidus sp. EM10	GCA_018729255.1	6658510	Complete
Cupriavidus sp. KK10	GCA_018223725.1	8350386	Complete
Cupriavidus sp. LEh25	GCA_017814975.1	8337633	Scaffold
Cupriavidus sp. AcVe19-6a	GCA_017815025.1	7432279	Scaffold
Cupriavidus sp. AcVe19-1a	GCA_017814995.1	7423665	Scaffold
Cupriavidus sp. IK-TO18	GCA_015549295.1	7423024	Scaffold
Cupriavidus sp. ISTL7	GCA_016350145.1	5578573	Chromosome
Cupriavidus sp. UBA8769	GCA_003535275.1	5984724	Scaffold
Cupriavidus sp. UBA8761	GCA_003497725.1	6781601	Scaffold
Cupriavidus sp. USMAHM13	GCA_001854285.1	7820821	Complete
Cupriavidus sp. USMAA2-4	GCA_001854305.1	8698226	Complete
Cupriavidus sp. YR651	GCA_900101625.1	6960118	Scaffold
Cupriavidus sp. OV096	GCA_900115455.1	5960440	Scaffold
Cupriavidus sp. OV038	GCA_900112215.1	5961672	Scaffold
Cupriavidus sp. SK-3	GCA_000611145.2	7429145	Scaffold
Cupriavidus sp. SK-4	GCA_000611125.1	7720227	Scaffold
Cupriavidus sp. GA3-3	GCA_000389805.1	6766178	Scaffold
Cupriavidus taiwanensis SWF66294	GCA_022406855.1	6782863	Complete
Cupriavidus taiwanensis LMG19425	GCA_900250065.1	7696780	Chromosome
Cupriavidus taiwanensis SWF65033	GCA_900250075.1	6767478	Chromosome
Cupriavidus taiwanensis SWF66324	GCA_900250025.1	6700309	Chromosome
Cupriavidus taiwanensis SWF66322	GCA_900250085.1	6952027	Chromosome
Cupriavidus taiwanensis cmp52	GCA_900249975.1	7026539	Scaffold
Cupriavidus taiwanensis MAPUD10.1	GCA_900250015.1	6760360	Scaffold
Cupriavidus taiwanensis TPUD27.6	GCA_900249995.1	6795041	Chromosome
Cupriavidus taiwanensis TPIG6a	GCA_900249985.1	6813618	Chromosome
Cupriavidus taiwanensis mpp1.1	GCA_900249965.1	6594617	Chromosome
Cupriavidus taiwanensis mpp1.3	GCA_900250005.1	6603990	Chromosome
Cupriavidus taiwanensis ip2.30/pp2.3	GCA_900250045.1	6705804	Chromosome
Cupriavidus taiwanensis STM8565	GCA_900249955.1	6736035	Chromosome
Cupriavidus taiwanensis STM8564	GCA_900249945.1	6737786	Chromosome
Cupriavidus taiwanensis STM8561	GCA_900249935.1	6725445	Chromosome
Cupriavidus taiwanensis STM8560	GCA_900249885.1	6744384	Chromosome
Cupriavidus taiwanensis STM8558	GCA_900249915.1	6605446	Chromosome
Cupriavidus taiwanensis STM8557	GCA_900249905.1	6605824	Chromosome
Cupriavidus taiwanensis STM8556	GCA_900249925.1	6603947	Chromosome
Cupriavidus taiwanensis STM6119	GCA_900249895.1	6517050	Chromosome
Cupriavidus taiwanensis STM6116	GCA_900249845.1	6524022	Chromosome
Cupriavidus taiwanensis STM6150	GCA_900249865.1	6669855	Chromosome
Cupriavidus taiwanensis STM6083	GCA_900250055.1	7338369	Chromosome
Cupriavidus taiwanensis STM6117	GCA_900249855.1	6528362	Chromosome
Cupriavidus taiwanensis STM6132	GCA_900249775.1	6882219	Chromosome
Cupriavidus taiwanensis STM6044	GCA_900249795.1	6820352	Chromosome

Strain	Accession	Genome Size(bp)	Assembly level
Cupriavidus taiwanensis STM6043	GCA_900249835.1	6817480	Chromosome
Cupriavidus taiwanensis STM6041	GCA_900250105.1	6845487	Chromosome
Cupriavidus taiwanensis STM6032	GCA_900249805.1	6537164	Chromosome
Cupriavidus taiwanensis STM6021	GCA_900249815.1	6811355	Chromosome
Cupriavidus taiwanensis STM3711	GCA_900249765.1	6764138	Chromosome
Cupriavidus taiwanensis STM3681	GCA_900249785.1	6749459	Scaffold
Cupriavidus taiwanensis STM3679	GCA_900250115.1	7009602	Chromosome
Cupriavidus taiwanensis STM3511	GCA_900249715.1	6668242	Chromosome
Cupriavidus taiwanensis LMG19426	GCA_900249705.1	6586675	Chromosome
Ensifer medicae WSM1115	GCA_021052565.1	7063185	Complete
Ensifer medicae USDA1037	GCA_007827695.1	6534206	Scaffold
Ensifer medicae M26-2	GCA_007827735.1	6410669	Scaffold
Ensifer medicae M19-1	GCA_007828595.1	6525526	Scaffold
Ensifer medicae M14-1	GCA_007827675.1	6636079	Scaffold
Ensifer medicae M7-4	GCA_007827875.1	6633353	Scaffold
Ensifer medicae Str10	GCA_002865105.1	7035255	Scaffold
Ensifer medicae Str9	GCA_002865125.1	5754281	Scaffold
Ensifer medicae Str8	GCA_002865145.1	6641759	Scaffold
Ensifer medicae Str7	GCA_002865155.1	6776889	Scaffold
Ensifer medicae Str6	GCA_002865185.1	6681400	Scaffold
Ensifer medicae Str5	GCA_002865205.1	5780598	Scaffold
Ensifer medicae Str4	GCA_002865215.1	6519610	Scaffold
Ensifer medicae Str3	GCA_002865225.1	6779348	Scaffold
Ensifer medicae Str1	GCA_002865265.1	7321489	Scaffold
Ensifer medicae WSM419	GCA_000017145.1	6817576	Complete
Ensifer medicae M58	GCA_009599705.1	7003631	Scaffold
Ensifer medicae M22	GCA_009601655.1	7471031	Scaffold
Ensifer medicae M2	GCA_009601305.1	7150708	Scaffold
Ensifer medicae M161	GCA_009601295.1	7238501	Scaffold
Ensifer medicae M102	GCA_009601495.1	7148030	Scaffold
Ensifer medicae M1	GCA_009601285.1	7177877	Scaffold
Ensifer medicae KH53a	GCA_009599955.1	6872513	Scaffold
Ensifer medicae KH36d	GCA_009599825.1	6925314	Scaffold
Ensifer medicae A321	GCA_009599935.1	7161183	Scaffold
Ensifer saheli LMG7837	GCA_001651875.1	5994348	Scaffold
Mesorhizobium amorphae CCBAU1583	GCA_002200945.1	7686388	Scaffold
Mesorhizobium australicum WSM2073	GCA_000230995.3	6200534	Complete
Mesorhizobium ciceri USDA3378	GCA_021608105.1	6910656	Scaffold
Mesorhizobium ciceri WSM1284	GCA_001618845.1	6880454	Complete
Mesorhizobium ciceri CC1192	GCA_001618825.1	6943628	Complete
Mesorhizobium ciceri WSM1271	GCA_000185905.1	6690028	Complete
Mesorhizobium erdmanii NZP2014	GCA_013170725.1	6602217	Complete
Mesorhizobium huakuii 583	GCA_014189455.1	8449246	Complete
Mesorhizobium japonicum R7ANSxCC1192excon1	GCA_014878205.1	6449722	Scaffold
Mesorhizobium japonicum R7ANSstar	GCA_012972145.1	6028604	Complete
Mesorhizobium japonicum R7AstarV2	GCA_012972105.1	6530396	Complete
Mesorhizobium japonicum R7Astar	GCA_012913645.1	6530403	Complete
Mesorhizobium japonicum R7A	GCA_000504265.1	6529530	Scaffold
Mesorhizobium jarvisii CAASH41096	GCA_022487465.1	7334815	Scaffold

Strain	Accession	Genome Size(bp)	Assembly level
Mesorhizobium jarvisii ATCC33669	GCA_013170785.1	7201057	Complete
Mesorhizobium loti 582	GCA_014189435.1	8330599	Complete
Mesorhizobium loti DSM2626	GCA_003148495.1	7451806	Scaffold
Mesorhizobium loti LU	GCA_002858745.1	6399828	Scaffold
Mesorhizobium loti TONO	GCA_002356515.1	8452151	Chromosome
Mesorhizobium muleiense CCBAU83979	GCA_021608125.1	7477974	Scaffold
Mesorhizobium muleiense CCBAU83939	GCA_021608045.1	6754434	Scaffold
Mesorhizobium muleiense CCBAU83908	GCA_021608085.1	6701469	Scaffold
Mesorhizobium muleiense CGMCC1.11022	GCA_900099905.1	6809960	Scaffold
Mesorhizobium opportunistum WSM1558	GCA_023380005.1	6876203	Complete
Mesorhizobium opportunistum WSM2075	GCA_000176035.2	6884444	Complete
Mesorhizobium plurifarium	GCA_000824745.1	7639275	Scaffold
Mesorhizobium prunaredense 1	GCA_900156895.1	7013874	Scaffold
Mesorhizobium qingshengii CGMCC1.12097	GCA_900103325.1	7063626	Scaffold
Mesorhizobium sangaii DSM100039	GCA_014207355.1	7212754	Scaffold
Mesorhizobium sp. PAMC28654	GCA_020616515.1	6701426	Complete
Mesorhizobium sp. NZP2077	GCA_013170805.1	7689947	Complete
Mesorhizobium sp. NBSH29	GCA_015500055.1	4007556	Complete
Mesorhizobium sp. INR15	GCA_015500075.1	7458624	Complete
Mesorhizobium sp. B4-1-4	GCA_006439395.2	6273176	Complete
Mesorhizobium sp. B2-8-5	GCA_006440675.2	6463198	Complete
Mesorhizobium sp. B2-1-8	GCA_006442545.2	6870590	Complete
Mesorhizobium sp. B2-1-1	GCA_006442975.2	6183877	Complete
Mesorhizobium sp. B1-1-8	GCA_006442795.2	6188207	Complete
Mesorhizobium sp. 8	GCA_006351905.1	4810323	Complete
Mesorhizobium sp. NZP2298	GCA_013170825.1	7336816	Complete
Mesorhizobium sp. NZP2234	GCA_013170765.1	6749717	Complete
Mesorhizobium sp. M7A.F.Ce.TU.012.03.2.1	GCA_004006095.1	6728125	Chromosome
Mesorhizobium sp. M1A.F.Ca.IN.022.06.1.1	GCA_003952605.1	6278406	Chromosome
Mesorhizobium sp. M8A.F.Ca.ET.057.01.1.1	GCA_003952565.1	6629336	Chromosome
Mesorhizobium sp. M7D.F.Ca.US.005.01.1.1	GCA_003952545.1	7168230	Chromosome
Mesorhizobium sp. M6A.T.Cr.TU.016.01.1.1	GCA_003952585.1	6784580	Chromosome
Mesorhizobium sp. M3A.F.Ca.ET.080.04.2.1	GCA_003952525.1	6165597	Complete
Mesorhizobium sp. M4B.F.Ca.ET.058.02.1.1	GCA_003952505.1	6461656	Chromosome
Mesorhizobium sp. M2A.F.Ca.ET.046.03.2.1	GCA_003952425.1	7372807	Complete
Mesorhizobium sp. M1B.F.Ca.ET.045.04.1.1	GCA_003952465.1	7779814	Complete
Mesorhizobium sp. M1E.F.Ca.ET.045.02.1.1	GCA_003952485.1	7348390	Complete
Mesorhizobium sp. M2A.F.Ca.ET.043.05.1.1	GCA_003952445.1	6749192	Complete
Mesorhizobium sp. M2A.F.Ca.ET.043.02.1.1	GCA_003952405.1	6700763	Complete
Mesorhizobium sp. M1D.F.Ca.ET.043.01.1.1	GCA_003952385.1	7127907	Complete
Mesorhizobium sp. M9A.F.Ca.ET.002.03.1.2	GCA_003952365.1	6415165	Complete
Mesorhizobium sp. Pch-S	GCA_004136315.1	6619214	Complete
Mesorhizobium sp. WSM1497	GCA_001672455.2	7198121	Complete
Mesorhizobium sp. AA22	GCA_001672375.2	6611049	Complete
Mesorhizobium sp. J8	GCA_016591715.1	6690860	Complete
Mesorhizobium sp. L-8-10	GCA_016756635.1	8451969	Complete
Mesorhizobium sp. L-8-3	GCA_016756615.1	8445954	Complete
Mesorhizobium sp. L-2-11	GCA_016756595.1	7416043	Complete
Mesorhizobium sp. 131-3-5	GCA_016756575.1	7570147	Complete

Strain	Accession	Genome Size(bp)	Assembly level
Mesorhizobium sp. 131-2-5	GCA_016756555.1	7993902	Complete
Mesorhizobium sp. 131-2-1	GCA_016756535.1	7108569	Complete
Mesorhizobium sp. 113-3-9	GCA_016756515.1	7592533	Complete
Mesorhizobium sp. 113-3-3	GCA_016756495.1	7731063	Complete
Mesorhizobium sp. 113-1-2	GCA_016756475.1	7938383	Complete
Mesorhizobium tianshanense CGMCC1.2546	GCA_007830515.1	7856320	Scaffold
Mesorhizobium wenxiniae WYCCWR10195	GCA_002284535.1	6681850	Scaffold
Methylobacterium ajmalii IIF4SW-B5	GCA_016613375.1	6534937	Scaffold
Methylobacterium ajmalii IIF1SW-B5	GCA_016613385.1	6593618	Scaffold
Methylobacterium ajmalii IF7SW-B2	GCA_016613415.1	6802552	Scaffold
Methylobacterium aquaticum BG2	GCA_016804325.1	7279786	Complete
Methylobacterium aquaticum MA-22A	GCA_001548015.1	7557960	Complete
Methylobacterium brachiatum B0021	GCA_020523825.1	6623525	Scaffold
Methylobacterium brachiatum TX0642	GCA_003697185.1	6339577	Chromosome
Methylobacterium brachiatum 111MFTsu3.1M4	GCA_900113845.1	5807243	Scaffold
Methylobacterium crusticola KCTC52305	GCA_022179145.1	7680383	Scaffold
Methylobacterium currus TP-3	GCA_021228015.1	7740048	Complete
Methylobacterium currus PR1016A	GCA_003058325.1	7745135	Chromosome
Methylobacterium durans 17SD2-17	GCA_003173715.1	6788375	Complete
Methylobacterium frigidaeris IER25-16	GCA_002759055.1	6395331	Scaffold
Methylobacterium frigidaeris JCM32048	GCA_022179185.1	7909330	Scaffold
Methylobacterium fujisawaense DSM5686	GCA_014138435.1	5971667	Scaffold
Methylobacterium gossipiicola Gh-105	GCA_900113485.1	4524655	Scaffold
Methylobacterium indicum VL1	GCA_017347565.1	7052747	Complete
Methylobacterium mesophilicum SR1.6/6	GCA_000364445.2	6555179	Complete
Methylobacterium mesophilicum NBRC15688	GCA_022179445.1	5902708	Scaffold
Methylobacterium nodulans ORS2060	GCA_000022085.1	8839022	Complete
Methylobacterium organophilum WPA_B	GCA_022533465.1	5319780	Complete
Methylobacterium oryzae H33R-06	GCA_021398735.1	6652319	Complete
Methylobacterium oryzae CBMB20	GCA_000757795.1	6286629	Complete
Methylobacterium phyllosphaerae CBMB27	GCA_001936175.1	6316624	Complete
Methylobacterium phyllostachyos BL47	GCA_900103445.1	6015046	Scaffold
Methylobacterium platani PMB02	GCA_001653715.1	7023890	Scaffold
Methylobacterium pseudosasicola BL36	GCA_900114535.1	6845277	Scaffold
Methylobacterium radiodurans 17Sr1-43	GCA_003173735.1	5539695	Complete
Methylobacterium radiotolerans NYY1	GCA_021484845.1	6853233	Complete
Methylobacterium radiotolerans MAMP4754	GCA_002221455.1	7389282	Scaffold
Methylobacterium radiotolerans JCM2831	GCA_000019725.1	6899110	Complete
Methylobacterium soli YIM48816	GCA_008806385.1	6648145	Scaffold
Methylobacterium sp. J-072	GCA_022829425.1	6532400	Scaffold
Methylobacterium sp. YIM132548	GCA_008806345.1	5875670	Scaffold
Methylobacterium sp. 2A	GCA_009806555.1	6395352	Scaffold
Methylobacterium sp. WL1	GCA_008000895.1	6251194	Complete
Methylobacterium sp. PMG_039	GCA_004295875.1	5014471	Scaffold
Methylobacterium sp. 17Sr1-1	GCA_003173775.1	6542583	Complete
Methylobacterium sp. P1-11	GCA_008329595.1	6784948	Scaffold
Methylobacterium sp. CG08_land_8_20_14_0_20_71_15	GCA_002778925.1	4515381	Scaffold
Methylobacterium sp. B4	GCA_003201865.1	5122509	Scaffold
Methylobacterium sp. XJLW	GCA_003254375.1	6666616	Complete

Strain	Accession	Genome Size(bp)	Assembly level
Methylobacterium sp. 190MF	GCA_900107945.1	6639642	Scaffold
Methylobacterium sp. YR668	GCA_900116245.1	6623161	Scaffold
Methylobacterium sp. YR596	GCA_900112945.1	6572329	Scaffold
Methylobacterium sp. AP11	GCA_900110515.1	6983078	Scaffold
Methylobacterium sp. Leaf102	GCA_001422425.1	4659682	Scaffold
Methylobacterium sp. Leaf100	GCA_001422845.1	4716235	Scaffold
Methylobacterium sp. Leaf99	GCA_001422375.1	4645412	Scaffold
Methylobacterium sp. Leaf93	GCA_001422345.1	4746437	Scaffold
Methylobacterium sp. Leaf89	GCA_001422215.1	5005286	Scaffold
Methylobacterium sp. Leaf88	GCA_001422795.1	5031274	Scaffold
Methylobacterium sp. UNCCL125	GCA_900116795.1	6712432	Scaffold
Methylobacterium sp. 174MFSha1.1	GCA_900116815.1	7437219	Scaffold
Methylobacterium sp. 13MFTsu3.1M2	GCA_900112625.1	6353721	Scaffold
Methylobacterium sp. UNC300MFChir4.1	GCA_900110155.1	6434396	Scaffold
Methylobacterium terrae 17Sr1-28	GCA_003173755.1	6162702	Complete
Methylobacterium terricola 17Sr1-39	GCA_006151805.1	7873283	Scaffold
Microvirga brassicacearum CDVBN77	GCA_008757455.1	5220401	Scaffold
Microvirga flocculans DSM15743	GCA_014196145.1	4018372	Scaffold
Microvirga guangxiensis CGMCC1.7666	GCA_900102135.1	4721732	Scaffold
Microvirga lotononidis WSM3557	GCA_000262405.1	7082538	Scaffold
Microvirga lupini AT3.9	GCA_014191055.1	4945970	Scaffold
Microvirga ossetica V5/3M	GCA_002741015.1	9631051	Complete
Microvirga sp. WGZ8	GCA_020089865.1	5165995	Scaffold
Microvirga sp. C_No_T20_B_bin.2	GCA_021156295.1	3171295	Scaffold
Microvirga sp. C_No_T20_A_bin.116	GCA_020697385.1	4423439	Scaffold
Microvirga sp. VF16	GCA_016864375.1	9951011	Complete
Microvirga sp. KLBC81	GCA_003075415.1	6863978	Scaffold
Microvirga sp. 17mud44564	GCA_003151255.1	4403107	Complete
Microvirga sp. AVDCRST_MAG90	GCA_902805785.1	2826182	Scaffold
Microvirga subterranea DSM14364	GCA_003350535.1	5147802	Scaffold
Microvirga thermotolerans HR1	GCA_009363855.1	3823049	Complete
Microvirga vignae BR3299	GCA_001017175.1	6472445	Scaffold
Neorhizobium alkalisoli 1225	GCA_007829835.1	7026071	Scaffold
Neorhizobium galegae 7g	GCA_021391675.1	6049186	Complete
Neorhizobium galegae VafX2	GCA_021484765.1	6733441	Complete
Neorhizobium galegae NG_110_Off	GCA_008806575.1	6194570	Scaffold
Neorhizobium sp. SOG26	GCA_003491345.1	4561173	Complete
Neorhizobium sp. NCHU2750	GCA_003597675.1	6351242	Complete
Paraburkholderia atlantica JPY158	GCA_014200905.1	8648169	Scaffold
Paraburkholderia atlantica JPY171	GCA_014200895.1	8426157	Scaffold
Paraburkholderia atlantica JPY681	GCA_014200955.1	7956688	Scaffold
Paraburkholderia atlantica CCGE1002	GCA_000092885.1	7884858	Complete
Paraburkholderia phenoliruptrix BR3459a	GCA_000300095.1	7651131	Complete
Paraburkholderia sprentiae WSM5005	GCA_001865575.2	7840207	Complete
Rhizobium acidisoli FH23	GCA_002531755.2	7361743	Complete
Rhizobium aethiopicum SEMIA4074	GCA_014197535.1	6494267	Scaffold
Rhizobium aethiopicum SEMIA470	GCA_014198535.1	6608673	Scaffold
Rhizobium aethiopicum HBR26	GCA_900094625.1	6557588	Scaffold
Rhizobium altiplani BR10423	GCA_001542405.1	8099863	Scaffold

Strain	Accession	Genome Size(bp)	Assembly level
Rhizobium anhuiense CCBAU23252	GCA_003985145.1	7122203	Scaffold
Rhizobium anhuiense CGMCC1.12621	GCA_014638185.1	7127919	Scaffold
Rhizobium azibense Gr42	GCA_004342325.1	6717894	Scaffold
Rhizobium azibense IE4868	GCA_004342645.1	7094183	Scaffold
Rhizobium azooxidifex DSM100211	GCA_014196765.1	5889117	Scaffold
Rhizobium bangladeshense PLR8-1a	GCA_017357265.1	6758039	Complete
Rhizobium bangladeshense BLR175	GCA_017357245.1	6348611	Complete
Rhizobium binae BLR195	GCA_017357225.1	7055288	Complete
Rhizobium binae BLR235	GCA_019684325.1	6474817	Scaffold
Rhizobium borbori DSM26385	GCA_014196535.1	4816868	Scaffold
Rhizobium cellulosilyticum SEMIA448	GCA_014198105.1	5760694	Scaffold
Rhizobium cellulosilyticum SEMIA444	GCA_014198155.1	5761912	Scaffold
Rhizobium cellulosilyticum SEMIA452	GCA_014198445.1	5759631	Scaffold
Rhizobium changzhiense WYCCWR11279	GCA_013087625.1	6590079	Scaffold
Rhizobium chutanense C16	GCA_003985205.1	7006523	Scaffold
Rhizobium cremeum W15(2021)	GCA_022884065.1	5337447	Scaffold
Rhizobium esperanzae SEMIA420	GCA_014198355.1	7033875	Scaffold
Rhizobium esperanzae SEMIA4089	GCA_014197615.1	6046894	Scaffold
Rhizobium esperanzae SEMIA414	GCA_014198365.1	7656360	Scaffold
Rhizobium esperanzae N561	GCA_001664265.1	6478651	Complete
Rhizobium etli SEMIA489	GCA_014198755.1	6340002	Scaffold
Rhizobium etli SEMIA471	GCA_014198605.1	6340321	Scaffold
Rhizobium etli NXC12	GCA_002119845.1	6756853	Complete
Rhizobium etli 8C-3	GCA_001908375.1	7309118	Complete
Rhizobium etli CIAT652	GCA_000020265.1	6448048	Complete
Rhizobium etli CFN42	GCA_000092045.1	6530228	Complete
Rhizobium etli Mim1	GCA_000442435.1	7197998	Complete
Rhizobium etli IE4803	GCA_000816125.1	6997434	Complete
Rhizobium fabae DSM19331	GCA_014196235.1	7192447	Scaffold
Rhizobium fabae CCBAU33202	GCA_003985135.1	6611877	Scaffold
Rhizobium favelukesii LPU83	GCA_000577275.2	7038809	Chromosome
Rhizobium gallicum M101	GCA_022354485.1	7258916	Complete
Rhizobium gallicum IE4872	GCA_001908615.1	7474202	Complete
Rhizobium gallicum R602	GCA_000816845.1	7311190	Complete
Rhizobium giardinii SEMIA4084	GCA_014200295.1	6569494	Scaffold
Rhizobium grahamii BG7	GCA_009498215.1	5889319	Complete
Rhizobium grahamii CCGM3	GCA_003351175.1	7077758	Scaffold
Rhizobium grahamii CCGE502	GCA_000298315.2	7146037	Scaffold
Rhizobium hidalgonense JKLM19E	GCA_005862185.2	6782610	Complete
Rhizobium indicum JKLM12A2	GCA_005862305.2	7508635	Complete
Rhizobium indicum JKLM13E	GCA_005860925.2	7552524	Complete
Rhizobium indigoferae CCBAU71042	GCA_013087605.1	7498874	Scaffold
Rhizobium jaguaris CCGE525	GCA_003627755.1	8025568	Complete
Rhizobium laguerreae WSM1455	GCA_021052325.1	6969233	Complete
Rhizobium laguerreae USLR2C	GCA_019778435.1	7094971	Scaffold
Rhizobium laguerreae USLR1A	GCA_019778425.1	6820610	Scaffold
Rhizobium laguerreae TLR8	GCA_019778445.1	7298189	Scaffold
Rhizobium laguerreae TLR7	GCA_019778505.1	7434558	Scaffold
Rhizobium laguerreae TLR6	GCA_019778565.1	7356999	Scaffold

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Rhizobium laguerreae TLR5	GCA_019778555.1	7290853	Scaffold
Rhizobium laguerreae TLR4	GCA_019778545.1	7343636	Scaffold
Rhizobium laguerreae TLR3	GCA_019778525.1	7117423	Scaffold
Rhizobium laguerreae TLR2	GCA_019778595.1	7367601	Scaffold
Rhizobium laguerreae OyaliA	GCA_019778695.1	8738801	Scaffold
Rhizobium laguerreae Baristepe2_103A	GCA_019778765.1	7422522	Scaffold
Rhizobium laguerreae Baristepe2_102B	GCA_019778745.1	7463972	Scaffold
Rhizobium laguerreae Baristepe103B	GCA_019778835.1	7269527	Scaffold
Rhizobium laguerreae SLR4	GCA_019778905.1	6981462	Scaffold
Rhizobium laguerreae SLR3	GCA_019778885.1	7124315	Scaffold
Rhizobium laguerreae SLR2	GCA_019778925.1	7116272	Scaffold
Rhizobium laguerreae SLR1	GCA_019778965.1	7388997	Scaffold
Rhizobium laguerreae Y2	GCA_019778985.1	7387926	Scaffold
Rhizobium laguerreae Vi3	GCA_019779025.1	7378194	Scaffold
Rhizobium laguerreae V2	GCA_019779045.1	6913571	Scaffold
Rhizobium laguerreae SpLR6a	GCA_019779065.1	7257767	Scaffold
Rhizobium laguerreae SpLR5a	GCA_019779105.1	7400750	Scaffold
Rhizobium laguerreae SpLR2a	GCA_019779115.1	7350647	Scaffold
Rhizobium laguerreae SpLR1a	GCA_019779185.1	7485157	Scaffold
Rhizobium laguerreae LEN4	GCA_019779165.1	7222696	Scaffold
Rhizobium laguerreae Len2	GCA_019779145.1	7607731	Scaffold
Rhizobium laguerreae HA2	GCA_019779205.1	7557025	Scaffold
Rhizobium laguerreae H2	GCA_019779155.1	7246003	Scaffold
Rhizobium laguerreae GU2	GCA_019779265.1	7264557	Scaffold
Rhizobium laguerreae ALM2	GCA_019779285.1	6697332	Scaffold
Rhizobium laguerreae ALG2	GCA_019779365.1	7682817	Scaffold
Rhizobium laguerreae MLR75	GCA_019779305.1	7635209	Scaffold
Rhizobium laguerreae MLR74	GCA_019779245.1	7580893	Scaffold
Rhizobium laguerreae MLR64	GCA_019779345.1	7585269	Scaffold
Rhizobium laguerreae MLR63	GCA_019779325.1	7479717	Scaffold
Rhizobium laguerreae MLR6	GCA_019779395.1	7309644	Scaffold
Rhizobium laguerreae MLR56	GCA_019779425.1	9030792	Scaffold
Rhizobium laguerreae MLR51	GCA_019779465.1	7185757	Scaffold
Rhizobium laguerreae MLR29	GCA_019779725.1	7593008	Scaffold
Rhizobium laguerreae MLR25	GCA_019779765.1	7169861	Scaffold
Rhizobium laguerreae MLR24	GCA_019779785.1	7486973	Scaffold
Rhizobium laguerreae MLR21	GCA_019779815.1	7386447	Scaffold
Rhizobium laguerreae MLR20	GCA_019779835.1	7363163	Scaffold
Rhizobium laguerreae MLR11	GCA_019779925.1	7236077	Scaffold
Rhizobium laguerreae MLR10	GCA_019779935.1	6951131	Scaffold
Rhizobium laguerreae MLR1	GCA_019779885.1	7332551	Scaffold
Rhizobium laguerreae SP15	GCA_012275855.1	7326240	Scaffold
Rhizobium laguerreae CECT8280	GCA_014192445.1	7316480	Scaffold
Rhizobium laguerreae FB403	GCA_004346285.1	7423761	Scaffold
Rhizobium leguminosarum Gr44902	GCA_021391595.1	7762839	Complete
Rhizobium leguminosarum Tp73_4	GCA_021391715.1	7583662	Complete
Rhizobium leguminosarum Ta1k	GCA_021391655.1	7990955	Complete
Rhizobium leguminosarum Ta9k	GCA_021391695.1	7990402	Complete
Rhizobium leguminosarum TpK	GCA_021484745.1	7547131	Complete

Strain	Accession	Genome Size(bp)	Assembly level
Rhizobium leguminosarum Ta6	GCA_021391615.1	7492222	Complete
Rhizobium leguminosarum Ta6k	GCA_021397605.1	7991621	Complete
Rhizobium leguminosarum SU303	GCA_021052345.1	7074845	Complete
Rhizobium leguminosarum GLR17	GCA_017357305.1	7503296	Complete
Rhizobium leguminosarum OyaliB	GCA_017348875.1	7465802	Complete
Rhizobium leguminosarum RCAM1365	GCA_014189635.1	7289587	Complete
Rhizobium leguminosarum RCAM2802	GCA_014189655.1	7760427	Complete
Rhizobium leguminosarum RCAM0626	GCA_014189575.1	7698847	Complete
Rhizobium leguminosarum RCAM0610	GCA_014189555.1	7343280	Complete
Rhizobium leguminosarum 31B	GCA_011604465.1	7812798	Complete
Rhizobium leguminosarum 23B	GCA_011604505.1	7932610	Complete
Rhizobium leguminosarum 22B	GCA_011604525.1	7496056	Complete
Rhizobium leguminosarum 9B	GCA_011604485.1	7035472	Complete
Rhizobium leguminosarum 4B	GCA_011604565.1	7594503	Complete
Rhizobium leguminosarum 3B	GCA_011604545.1	7594387	Complete
Rhizobium leguminosarum 248	GCA_010365265.1	7157962	Complete
Rhizobium leguminosarum ATCC14479	GCA_003290405.1	7935223	Complete
Rhizobium leguminosarum Norway	GCA_002953715.1	7788085	Complete
Rhizobium leguminosarum UPM791	GCA_002948295.1	7837567	Complete
Rhizobium leguminosarum BIHB1217	GCA_002243365.1	7952546	Complete
Rhizobium leguminosarum Vaf-108	GCA_001890425.1	8447336	Complete
Rhizobium leguminosarum Vaf10	GCA_001679785.1	8567819	Complete
Rhizobium leguminosarum BIHB1148	GCA_002240185.1	6957630	Complete
Rhizobium leguminosarum CC275e	GCA_000769405.2	7077367	Complete
Rhizobium leguminosarum CB782	GCA_000520875.1	6703653	Complete
Rhizobium leguminosarum WSM1689	GCA_000517605.1	6903379	Complete
Rhizobium leguminosarum TA1	GCA_000430465.3	7613129	Complete
Rhizobium leguminosarum WSM1325	GCA_000023185.1	7418122	Complete
Rhizobium leguminosarum WSM2304	GCA_000021345.1	6872702	Complete
Rhizobium lemnae TBRC_L6-16	GCA_022968395.1	4854514	Scaffold
Rhizobium lentis BLR27	GCA_017352135.1	6423001	Complete
Rhizobium lentis NLR20b	GCA_019684995.1	6611953	Scaffold
Rhizobium lentis BLR98	GCA_019684545.1	6931709	Scaffold
Rhizobium lentis BLR9	GCA_019684515.1	6688513	Scaffold
Rhizobium lentis BLR87	GCA_019684535.1	6535676	Scaffold
Rhizobium lentis BLR41	GCA_019684685.1	6388267	Scaffold
Rhizobium lentis BLR127	GCA_019684855.1	6525368	Scaffold
Rhizobium lentis BLR122	GCA_019684835.1	6592155	Scaffold
Rhizobium lentis SEMIA490	GCA_014198785.1	6011953	Scaffold
Rhizobium lentis SEMIA4034	GCA_014200155.1	6687331	Scaffold
Rhizobium leucaenae SEMIA492	GCA_014198775.1	6123127	Scaffold
Rhizobium leucaenae SEMIA4015	GCA_014207015.1	6485165	Scaffold
Rhizobium lusitanum SEMIA4060	GCA_014207095.1	7212537	Scaffold
Rhizobium lusitanum P1-7	GCA_900094565.1	7921970	Scaffold
Rhizobium metallidurans DSM26575	GCA_014196505.1	5179475	Scaffold
Rhizobium miluonense HAMBI2971	GCA_900094545.1	6808054	Scaffold
Rhizobium mongolense SEMIA4087	GCA_014197625.1	7166484	Scaffold
Rhizobium mongolense SEMIA402	GCA_014197875.1	7385261	Scaffold
Rhizobium mongolense subsp.CGMCC1.3401	GCA_900099775.1	6728492	Scaffold

Strain	Accession	Genome Size(bp)	Assembly level
Rhizobium multihospitium HAMBI2975	GCA_900094585.1	7319877	Scaffold
Rhizobium oryzae 1.7048	GCA_001938935.1	5391466	Scaffold
Rhizobium oryzae CGMCC1.7048	GCA_900109605.1	5388788	Scaffold
Rhizobium oryzihabitans M15	GCA_010669145.1	5858741	Complete
Rhizobium oryziradicis N19	GCA_001939045.1	5156254	Scaffold
Rhizobium paranaense SEMIA4064	GCA_014200235.1	6850950	Scaffold
Rhizobium phaseoli BS3	GCA_012241395.2	6860679	Complete
Rhizobium phaseoli ATCC14482	GCA_003985125.1	6652103	Scaffold
Rhizobium phaseoli CCGM9	GCA_003351165.1	6953162	Scaffold
Rhizobium phaseoli CCGM8	GCA_003351185.1	6477605	Scaffold
Rhizobium phaseoli CCGM2	GCA_003150695.1	7030230	Scaffold
Rhizobium phaseoli R744	GCA_001664185.1	6662049	Complete
Rhizobium phaseoli R723	GCA_001664225.1	6740740	Complete
Rhizobium phaseoli R650	GCA_001664385.1	6726041	Complete
Rhizobium phaseoli R630	GCA_001664205.1	6752556	Complete
Rhizobium phaseoli R620	GCA_001664245.1	6630699	Complete
Rhizobium phaseoli R611	GCA_001664445.1	6704835	Complete
Rhizobium phaseoli N931	GCA_001664285.1	6745503	Complete
Rhizobium phaseoli N841	GCA_001664425.1	6859907	Complete
Rhizobium phaseoli N831	GCA_001664125.1	6745171	Complete
Rhizobium phaseoli N771	GCA_001664405.1	6906405	Complete
Rhizobium phaseoli N671	GCA_001664365.1	6906114	Complete
Rhizobium phaseoli N261	GCA_001664105.1	6740745	Complete
Rhizobium phaseoli N161	GCA_001664165.1	6720332	Complete
Rhizobium phaseoli Ch24-10	GCA_000268285.2	6732565	Scaffold
Rhizobium phaseoli Brasil5	GCA_000172715.2	6665454	Complete
Rhizobium pisi CECT4113	GCA_014191925.1	6942452	Scaffold
Rhizobium populisoli XQZ8	GCA_019430945.1	6843924	Scaffold
Rhizobium pusense SX41	GCA_018987285.1	5483852	Complete
Rhizobium pusense SCN18_30_10_14_R3_B_60_7	GCA_017305495.1	4098479	Scaffold
Rhizobium pusense RpEC2071	GCA_022848885.1	5495842	Scaffold
Rhizobium pusense 76	GCA_013285525.1	5375961	Complete
Rhizobium pusense 17-1009	GCA_013320535.1	5258558	Scaffold
Rhizobium pusense CFBP5875	GCA_005221365.1	4957912	Complete
Rhizobium pusense FDAARGOS_633	GCA_012272675.1	5968213	Chromosome
Rhizobium pusense FDAARGOS_619	GCA_013267135.1	6150855	Chromosome
Rhizobium pusense FDAARGOS_618	GCA_013267155.1	6318557	Chromosome
Rhizobium pusense NRCPB10	GCA_002008275.1	5271321	Scaffold
Rhizobium pusense LMG25623	GCA_900102105.1	5283618	Scaffold
Rhizobium pusense CCGM11	GCA_001888225.1	6011083	Scaffold
Rhizobium pusense CCGM10	GCA_001888145.1	5983417	Scaffold
Rhizobium rhizosphaerae MH17	GCA_001938945.1	5537226	Scaffold
Rhizobium rosettiformans DSM26376	GCA_014202175.1	4956564	Scaffold
Rhizobium rosettiformans MAE2-X	GCA_016806065.1	5141700	Complete
Rhizobium ruizarguesonis TA1	GCA_021052425.1	7621360	Complete
Rhizobium ruizarguesonis NZLR24	GCA_017357285.1	7811507	Complete
Rhizobium ruizarguesonis UPM1135	GCA_012412905.2	11661708	Scaffold
Rhizobium ruizarguesonis UPM1134	GCA_012349085.1	7480747	Scaffold
Rhizobium ruizarguesonis UPM1133	GCA_012349115.1	7707911	Scaffold

Strain	Accession	Genome Size(bp)	Assembly level
Rhizobium ruizarguesonis UPM1132	GCA_012349105.1	7509578	Scaffold
Rhizobium ruizarguesonis RCAM1026	GCA_001927265.3	7239399	Complete
Rhizobium soli AS3.12	GCA_014207075.1	4791559	Scaffold
Rhizobium sophorae CCBAU3386	GCA_013087515.1	7500905	Scaffold
Rhizobium sp. K102	GCA_022385315.1	6741087	Complete
Rhizobium sp. C104	GCA_022354505.1	7556112	Complete
Rhizobium sp. T136	GCA_021044665.1	7738336	Complete
Rhizobium sp. WYJ-E13	GCA_018987265.1	6906074	Complete
Rhizobium sp. NLR16a	GCA_017948245.1	6575602	Complete
Rhizobium sp. L51/94	GCA_019355555.1	6052372	Complete
Rhizobium sp. K1/93	GCA_019355575.1	6660163	Complete
Rhizobium sp. K15/93	GCA_019355615.1	6660338	Complete
Rhizobium sp. B230/85	GCA_019355735.1	6172967	Complete
Rhizobium sp. B21/90	GCA_019355815.1	6557255	Complete
Rhizobium sp. AB2/73	GCA_019357455.1	7224495	Complete
Rhizobium sp. NZLR1	GCA_017357385.1	6856000	Complete
Rhizobium sp. 7	GCA_015353075.1	7601978	Complete
Rhizobium sp. SL42	GCA_021729845.1	5166003	Complete
Rhizobium sp. BG6	GCA_016864535.1	5880350	Complete
Rhizobium sp. BG4	GCA_016864575.1	6421998	Complete
Rhizobium sp. WL3	GCA_008000915.1	5354836	Complete
Rhizobium sp. NIBRBAC000502774	GCA_006517835.1	4054544	Complete
Rhizobium sp. CCGE532	GCA_003627775.1	6923224	Complete
Rhizobium sp. CCGE531	GCA_003627795.1	7140493	Complete
Rhizobium sp. NXC24	GCA_002944315.1	7302537	Complete
Rhizobium sp. 11515TR	GCA_002277895.1	7070317	Complete
Rhizobium sp. ACO-34A	GCA_002600635.1	6284736	Complete
Rhizobium sp. NXC14	GCA_002117485.1	6686318	Complete
Rhizobium sp. ZX09	GCA_017357485.1	5506306	Complete
Rhizobium sp. Y9	GCA_002814035.1	5321211	Complete
Rhizobium sp. TAL182	GCA_002117725.1	6402377	Complete
Rhizobium sp. S41	GCA_001691455.1	5524367	Complete
Rhizobium sp. N941	GCA_001675075.1	6852009	Chromosome
Rhizobium sp. N541	GCA_001675095.1	6860888	Chromosome
Rhizobium sp. N324	GCA_001664485.1	6972593	Complete
Rhizobium sp. N871	GCA_001664525.1	6479005	Complete
Rhizobium sp. N741	GCA_001664545.1	6556348	Complete
Rhizobium sp. N731	GCA_001664145.1	6274507	Complete
Rhizobium sp. N6212	GCA_001664465.1	6424414	Complete
Rhizobium sp. N621	GCA_001664325.1	6425255	Complete
Rhizobium sp. N1341	GCA_001664085.1	6555560	Complete
Rhizobium sp. N1314	GCA_001664305.1	6274511	Complete
Rhizobium sp. N113	GCA_001664345.1	6524337	Complete
Rhizobium sp. CIAT894	GCA_000172795.2	6657947	Complete
Rhizobium sp. Kim5	GCA_000172695.2	6817255	Complete
Rhizobium sp. IE4771	GCA_000698845.1	7057405	Complete
Rhizobium subbaraonis JC85	GCA_900220975.1	6576489	Scaffold
Rhizobium sullae Hc14	GCA_004342945.1	7322818	Scaffold
Rhizobium sullae HCNT1	GCA_002812325.1	7298178	Scaffold

Strain	Accession	Genome Size(bp)	Assembly level
Rhizobium taibaishanense 14971	GCA_001938985.1	5418020	Scaffold
Rhizobium tarimense CCTCC_AB_2011011	GCA_022968135.1	4863034	Scaffold
Rhizobium tibeticum CGMCC1.7071	GCA_900110205.1	7065782	Scaffold
Rhizobium tropici A12	GCA_010815565.1	6590945	Scaffold
Rhizobium tropici SEMIA4063	GCA_014200185.1	6604161	Scaffold
Rhizobium tropici CIAT899	GCA_000330885.1	6686334	Complete
Rhizobium vallis CCBAU65647	GCA_003985155.1	7115113	Scaffold
Rhizobium wenxiniae DSM100734	GCA_014201355.1	6435827	Scaffold
Rhizobium wenxiniae CGMCC1.15279	GCA_014641515.1	6437844	Scaffold
Sinorhizobium americanum 23C40	GCA_004340865.1	6778744	Scaffold
Sinorhizobium americanum CFNEI73	GCA_001889105.1	6751508	Complete
Sinorhizobium americanum CCGM7	GCA_000705595.2	6807150	Scaffold
Sinorhizobium fredii NXT3	GCA_002944405.1	6557702	Complete
Sinorhizobium fredii CCBAU83666	GCA_002288485.1	7083389	Complete
Sinorhizobium fredii CCBAU45436	GCA_003100575.1	6913799	Complete
Sinorhizobium fredii CCBAU25509	GCA_003177055.1	6810864	Complete
Sinorhizobium fredii USDA257	GCA_000265205.2	7032323	Chromosome
Sinorhizobium fredii NGR234	GCA_000018545.1	6891900	Complete
Sinorhizobium fredii USDA207	GCA_009601515.1	6934231	Scaffold
Sinorhizobium fredii HH103	GCA_000283895.1	7221188	Chromosome
Sinorhizobium meliloti Ak57	GCA_021391635.1	7097645	Complete
Sinorhizobium meliloti RRI128	GCA_021052665.1	7266902	Complete
Sinorhizobium meliloti L6-AK89	GCA_020684825.1	6793721	Complete
Sinorhizobium meliloti AK76	GCA_016406285.1	7052380	Complete
Sinorhizobium meliloti S35m	GCA_015689095.1	6842429	Complete
Sinorhizobium meliloti RCAM1750	GCA_014189615.1	6920965	Complete
Sinorhizobium meliloti RCAM1115	GCA_014189595.1	7582989	Complete
Sinorhizobium meliloti AK21	GCA_009664245.1	7330060	Complete
Sinorhizobium meliloti USDA1157	GCA_002197025.1	7205853	Complete
Sinorhizobium meliloti USDA1106	GCA_002197065.1	6716226	Complete
Sinorhizobium meliloti USDA1021	GCA_002197445.1	7147943	Complete
Sinorhizobium meliloti T073	GCA_002197145.1	7042635	Complete
Sinorhizobium meliloti M270	GCA_002197085.1	7281821	Complete
Sinorhizobium meliloti M162	GCA_002197125.1	6808187	Complete
Sinorhizobium meliloti KH46	GCA_002197465.1	6981128	Complete
Sinorhizobium meliloti KH35c	GCA_002197105.1	6750789	Complete
Sinorhizobium meliloti HM006	GCA_002197165.1	6997718	Complete
Sinorhizobium meliloti CCMMB554(FSM-MA)	GCA_002215195.1	6703999	Complete
Sinorhizobium meliloti B399	GCA_002302375.1	6472568	Complete
Sinorhizobium meliloti B401	GCA_002302355.1	6140999	Complete
Sinorhizobium meliloti RMO17	GCA_000747295.1	6733414	Complete
Sinorhizobium meliloti 2011	GCA_000346065.1	6693185	Complete
Sinorhizobium meliloti GR4	GCA_000320385.2	7141709	Complete
Sinorhizobium meliloti SM11	GCA_000218265.1	7173736	Complete
Sinorhizobium meliloti WSM1022	GCA_013315775.1	6751834	Chromosome
Sinorhizobium meliloti BL225C	GCA_000147775.3	6978785	Complete
Sinorhizobium meliloti AK83	GCA_000147795.3	7140471	Complete
Sinorhizobium meliloti RU11/001	GCA_001050915.2	7179436	Complete
Sinorhizobium saheli USDA4893	GCA_009601395.1	6159554	Scaffold

Strain	Accession	Genome Size(bp)	Assembly level
Sinorhizobium sp. BG8	GCA_016864555.1	5667563	Complete
Sinorhizobium sp. CCBAU5631	GCA_002288505.1	6387352	Complete
Sinorhizobium terangae SEMIA6460	GCA_014197705.1	6785777	Scaffold
Sinorhizobium terangae USDA4894	GCA_009601505.1	7081278	Scaffold

附录 C 各类别假定蛋白信息

C.1 Cluster 109 中的假定蛋白

Protein	Accession
Bradyrhizobium japonicum USDA6_1467	BAL07686.1
Bradyrhizobium sp. CCGE-LA001_1921	AMA60268.1
Rhizobium grahamii CCGE502_1176	EPE97290.1
Rhizobium tropici CIAT899_593	AGB72162.1
Sinorhizobium meliloti 2011_421	AGG75306.1
Rhizobium leguminosarum WSM1689_797	AHF85290.1
Rhizobium leguminosarum CB782_643	AHG46598.1
Rhizobium favelukesii LPU83_620	CDM58858.1
Bradyrhizobium japonicum SEMIA5079_2908	AHY54133.1
Sinorhizobium americanum CCGM7_617	APG85726.1
Sinorhizobium meliloti RMO17_482	AIM00663.1
Bradyrhizobium japonicum Is-34_185	KGT79478.1
Bradyrhizobium japonicum E109_540	AJA60982.1
Microvirga vignae BR3299_752	KLK93241.1
Bradyrhizobium japonicum FN1_1515	KMJ95412.1
Sinorhizobium meliloti RU11/001_323	ARS70853.1
Methylobacterium sp. Leaf89_1032	KQO67178.1
Methylobacterium sp. Leaf93_901	KQP05432.1
Methylobacterium sp. Leaf99_735	KQP07567.1
Methylobacterium sp. Leaf102_1100	KQP24707.1
Methylobacterium sp. Leaf88_526	KQO74256.1
Methylobacterium sp. Leaf100_224	KQP35997.1
Aminobacter sp. Root100_580	KQU73769.1
Bradyrhizobium yuanmingense BR3267_932	KRP93845.1
Bradyrhizobium pachyrhizi BR3262_937	KRQ04323.1
Bradyrhizobium manausense BR3351_2456	KRQ02042.1
Bradyrhizobium jicamae PAC68_1053	KRR08098.1
Bradyrhizobium valentinum LmjM3_2246	KRQ99444.1
Bradyrhizobium lablabi CCBAU23086_2821	KRR16067.1
Rhizobium altiplani BR10423_2122	KWV40417.1
Bradyrhizobium macuxiense BR10303_765	KWV58041.1
Methylobacterium aquaticum MA-22A_174	BAQ44159.1
Bradyrhizobium diazoefficiens NK6_952	BAR55071.1
Aminobacter aminovorans KCTC2477_804	AMS41241.1
Mesorhizobium ciceri CC1192_910	AMX94536.1
Mesorhizobium ciceri WSM1284_1104	AMY02065.1
Bradyrhizobium centrolobii BR10245_1611	OAF06668.1
Bradyrhizobium neotropicale BR10247_183	OAF19697.1
Sinorhizobium saheli LMG7837_1014	OAP40272.1
Methylobacterium platani PMB02_692	OAS25371.1
Mesorhizobium sp. WSM1497_441	ARP63823.1
Rhizobium leguminosarum Vaf10_784	ANP86893.1
Rhizobium sp. S41_283	ANV23639.1
Bradyrhizobium icense LMTR13_2353	ANW04142.1
Bradyrhizobium elkanii BLY6-1_241	ODM85371.1
Bradyrhizobium elkanii BLY3-8_714	ODM82263.1
Bradyrhizobium elkanii TnphoA33_1993	OIM89060.1
Bradyrhizobium japonicum J5_581	APG08835.1
Rhizobium pusense CCGM10_1064	OJH52804.1
Rhizobium pusense CCGM11_1090	OJH57115.1
Sinorhizobium americanum CFNEI73_700	APG92385.1
Rhizobium leguminosarum Vaf-108_45	API50439.1

Protein	Accession
Bradyrhizobium diazoefficiens USDA122_2384	APO55932.1
Methylobacterium phyllosphaerae CBMB27_1373	APT33794.1
Rhizobium oryzae 1.7048_143	OLP62069.1
Rhizobium rhizosphaerae MH17_1067	OLP53644.1
Rhizobium taibaishanense 14971_792	OLP49488.1
Rhizobium oryziradicis N19_618	OLP44208.1
Rhizobium pusense NRCPB10_673	OOO17118.1
Bradyrhizobium sacchari p9-20_1795	OPY95025.1
Mesorhizobium amorphae CCBAU1583_3120	OWK19127.1
Sinorhizobium meliloti CCMMB554(FSM-MA)_634	ASJ60346.1
Azorhizobium sp. 32-67-21_1290	OYX85232.1
Sinorhizobium fredii CCBAU83666_808	ASY70321.1
Sinorhizobium sp. CCBAU5631_905	ASY58079.1
Sinorhizobium meliloti B401_528	ATA99942.1
Sinorhizobium meliloti B399_609	ATB05946.1
Microvirga ossetica V5/3M_1403	ANY79846.1
Methylobacterium frigidaeris IER25-16_478	PIK72183.1
Bradyrhizobium nitroreducens TSA1_581	PIT01188.1
Rhizobium sp. Y9_374	AUC10434.1
Sinorhizobium medicae Str10_1179	PLU32340.1
Sinorhizobium medicae Str9_636	PLU40607.1
Sinorhizobium medicae Str8_702	PLU47801.1
Sinorhizobium medicae Str7_584	PLU63243.1
Sinorhizobium medicae Str6_894	PLU57536.1
Sinorhizobium medicae Str5_706	PLU82733.1
Sinorhizobium medicae Str4_689	PLU60873.1
Sinorhizobium medicae Str3_708	PLU72356.1
Sinorhizobium medicae Str1_659	PLU79623.1
Rhizobium leguminosarum Norway_1006	AUW44124.1
Aminobacter sp. MSH1_539	AWC22850.1
Sinorhizobium fredii CCBAU45436_2935	AWI58638.1
Rhizobium phaseoli CCGM2_846	PWI52972.1
Sinorhizobium fredii CCBAU25509_910	AWM26343.1
Methylobacterium sp. XJLW_364	AWV15094.1
Rhizobium leguminosarum ATCC14479_453	AXA39585.1
Rhizobium phaseoli CCGM9_860	RDJ10053.1
Rhizobium grahamii CCGM3_685	RDJ10369.1
Rhizobium phaseoli CCGM8_859	RDJ07749.1
Neorhizobium sp. NCHU2750_690	AYD01983.1
Bradyrhizobium zhanjiangense CCBAU51787_400	RXH41827.1
Bradyrhizobium nanningense CCBAU53390_1336	RXH29348.1
Bradyrhizobium nanningense CCBAU51757_1786	RXH38074.1
Bradyrhizobium sp. SG09_818	BBO03314.1
Bradyrhizobium sp. TM102_486	BBO10383.1
Bradyrhizobium elkanii USDA61_1093	BBB97088.1
Methylobacterium fujisawaense DSM5686_104	MBA9061081.1
Aminobacter ciceronei DSM15910_1324	MBA8910090.1
Aminobacter ciceronei DSM17455_1328	MBA9023905.1
Bradyrhizobium diazoefficiens HH15_2597	BCA24174.1
Bradyrhizobium diazoefficiens H12S4_2803	BCA06823.1
Bradyrhizobium diazoefficiens HF08_2532	BCA15473.1
Bradyrhizobium diazoefficiens F07S3_2710	BBZ97789.1
Microvirga lupini AT3.9_218	MBB3017765.1
Rhizobium pisi CECT4113_448	MBB3134396.1
Rhizobium laguerreae CECT8280_312	MBB3160943.1
Aminobacter aminovorans DSM10368_421	MBB3705776.1

Protein	Accession
Microvirga flocculans DSM15743_108	MBB4038992.1
Rhizobium fabae DSM19331_1032	MBB3917521.1
Rhizobium metallidurans DSM26575_477	MBB3964990.1
Rhizobium borbori DSM26385_60	MBB4101963.1
Rhizobium azooxidifex DSM100211_406	MBB3977213.1
Rhizobium aethiopicum SEMIA4074_164	MBB4190603.1
Rhizobium esperanzae SEMIA4089_573	MBB4236087.1
Rhizobium mongolense SEMIA4087_1419	MBB4231895.1
Sinorhizobium terangae SEMIA6460_579	MBB4185933.1
Rhizobium mongolense SEMIA402_1089	MBB4276807.1
Rhizobium cellulosilyticum SEMIA448_113	MBB4346903.1
Rhizobium cellulosilyticum SEMIA444_331	MBB4410703.1
Rhizobium esperanzae SEMIA420_12	MBB4430015.1
Rhizobium esperanzae SEMIA414_1050	MBB4441755.1
Rhizobium cellulosilyticum SEMIA452_328	MBB4445391.1
Rhizobium aethiopicum SEMIA470_12	MBB4577792.1
Rhizobium etli SEMIA471_1089	MBB4482898.1
Rhizobium etli SEMIA489_1086	MBB4538727.1
Rhizobium leucaenae SEMIA492_66	MBB4566244.1
Rhizobium lentis SEMIA490_9	MBB4571876.1
Rhizobium lentis SEMIA4034_244	MBB5559466.1
Rhizobium tropici SEMIA4063_1290	MBB5596795.1
Rhizobium paranaense SEMIA4064_242	MBB5572708.1
Rhizobium giardinii SEMIA4084_401	MBB5535245.1
Rhizobium wenxiniae DSM100734_227	MBB6161286.1
Rhizobium rosettiformans DSM26376_219	MBB5274849.1
Rhizobium leucaenae SEMIA4015_700	MBB6302567.1
Rhizobium soli AS3.12_123	MBB6507327.1
Rhizobium lusitanum SEMIA4060_252	MBB6484063.1
Mesorhizobium sangaii DSM100039_1012	MBB6411847.1
Aminobacter lissarensis DSM17454_619	MBB6467387.1
Azorhizobium oxalatiphilum CCM7897_260	GGF51869.1
Rhizobium anhuiense CGMCC1.12621_1419	GGE02846.1
Bradyrhizobium guangdongense CGMCC1.15034_200	GGI19869.1
Rhizobium wenxiniae CGMCC1.15279_389	GGF87687.1
Mesorhizobium sp. J8_1889	BCM21363.1
Mesorhizobium sp. 113-1-2_702	BCG71290.1
Mesorhizobium sp. 113-3-3_529	BCG78628.1
Mesorhizobium sp. 113-3-9_567	BCG86191.1
Mesorhizobium sp. 131-2-1_540	BCG93224.1
Mesorhizobium sp. 131-2-5_664	BCH00336.1
Mesorhizobium sp. 131-3-5_634	BCH08026.1
Mesorhizobium sp. L-2-11_476	BCH15006.1
Mesorhizobium sp. L-8-3_1007	BCH23567.1
Mesorhizobium sp. L-8-10_900	BCH31301.1
Methylobacterium indicum VL1_1589	BCM85666.1
Microvirga sp. C_No_T20_B_bin.2_102	MCD6070488.1
Methylobacterium crusticola KCTC52305_1162	GJD49908.1
Methylobacterium frigidaeris JCM32048_140	GJD60182.1
Methylobacterium mesophilicum NBRC15688_1861	GJE23209.1

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Protein	Accession
Bradyrhizobium japonicum USDA6_4993	BAL12945.1
Bradyrhizobium japonicum SEMIA5079_140	AHY48760.1
Sinorhizobium americanum CCGM7_973	APG87019.1
Bradyrhizobium japonicum Is-34_2090	KGT74087.1
Bradyrhizobium japonicum E109_1830	AJA65331.1
Microvirga vignae BR3299_1874	KLK90660.1
Bradyrhizobium japonicum FN1_1780	KMJ94829.1
Bradyrhizobium yuanmingense BR3267_294	KRQ01832.1
Bradyrhizobium pachyrhizi BR3262_2533	KRP84808.1
Bradyrhizobium lablabi CCBAU23086_438	KRR26577.1
Bradyrhizobium diazoefficiens NK6_1125	BAR55447.1
Mesorhizobium ciceri WSM1284_252	AMX99070.1
Bradyrhizobium centrolobii BR10245_157	OAF16445.1
Bradyrhizobium neotropicale BR10247_1050	OAF16908.1
Mesorhizobium sp. AA22_756	QIA25430.1
Mesorhizobium sp. WSM1497_1400	ARP67225.1
Rhizobium leguminosarum Vaf10_1667	ANP90908.1
Bradyrhizobium icense LMTR13_2020	ANW05879.1
Bradyrhizobium elkanii BLY6-1_2374	ODM72743.1
Bradyrhizobium elkanii BLY3-8_2374	ODM72168.1
Bradyrhizobium elkanii TnphoA33_924	OIM91007.1
Bradyrhizobium japonicum J5_2655	APG14674.1
Sinorhizobium americanum CFNEI73_1038	APG93532.1
Rhizobium leguminosarum Vaf-108_1270	API56039.1
Bradyrhizobium diazoefficiens USDA122_734	APO50755.1
Bradyrhizobium sacchari p9-20_1681	OPY95469.1
Sinorhizobium meliloti M270_825	ASP89655.1
Sinorhizobium meliloti M162_624	ASP95625.1
Bradyrhizobium ottawaense OO99_105	AWL91252.1
Sinorhizobium fredii CCBAU83666_1067	ASY73606.1
Sinorhizobium fredii CCBAU83666_1097	ASY73728.1
Sinorhizobium sp. CCBAU5631_1179	ASY60572.1
Mesorhizobium loti TONO_569	BAV50434.1
Rhizobium acidisoli FH23_708	QAS81309.1
Bradyrhizobium forestalis INPA54B_1713	PJG55203.1
Microvirga sp. KLBC81_1675	PVE21037.1
Sinorhizobium fredii CCBAU45436_4298	AWI61907.1
Mesorhizobium loti DSM2626_1236	PWJ87462.1
Rhizobium phaseoli CCGM2_1369	PWI50648.1
Sinorhizobium fredii CCBAU25509_1213	AWM29829.1
Bradyrhizobium diazoefficiens XF7_449	QJS40882.1
Rhizobium phaseoli CCGM9_1188	RDJ04605.1
Rhizobium sp. CCGE532_521	AYG76721.1
Rhizobium sp. CCGE531_531	AYG70329.1
Mesorhizobium sp. M1D.F.Ca.ET.043.01.1.1_377	AZO71493.1
Mesorhizobium sp. M2A.F.Ca.ET.046.03.2.1_184	AZO34070.1
Rhizobium phaseoli ATCC14482_846	RUM12765.1
Rhizobium vallis CCBAU65647_808	RUM19235.1
Bradyrhizobium vignae LMG28791_1007	RXG88540.1
Bradyrhizobium zhanjiangense CCBAU51770_871	RXG88712.1
Bradyrhizobium zhanjiangense CCBAU51781_1389	RXG96388.1
Bradyrhizobium zhanjiangense CCBAU51787_1053	RXH39522.1
Bradyrhizobium nanningense CCBAU51757_1076	RXH24101.1
Sinorhizobium americanum 23C40_815	TCN27627.1

Protein	Accession
Rhizobium azibense Gr42_1166	TCU16186.1
Rhizobium azibense IE4868_1048	TCU33531.1
Bradyrhizobium diazoefficiens 110spc4_489	QBP20980.1
Sinorhizobium medicae M14-1_1123	TWA13398.1
Sinorhizobium medicae M7-4_1104	TWA34679.1
Bradyrhizobium sacchari BR10555_1686	TWB48723.1
Bradyrhizobium sacchari BR10556_1691	TWB67884.1
Bradyrhizobium daqingense CGMCC1.10947_1608	TWH92289.1
Mesorhizobium tianshanense CGMCC1.2546_269	TWI40348.1
Bradyrhizobium huanghuaihaiense CGMCC1.10948_2022	TWI56049.1
Bradyrhizobium hipponense aSej3_369	TYO61988.1
Bradyrhizobium sp. SG09_2388	BBO07922.1
Sinorhizobium medicae A321_553	MQU79133.1
Sinorhizobium terangae USDA4894_617	MQX15680.1
Sinorhizobium fredii USDA207_542	MQW99147.1
Bradyrhizobium japonicum 5873_514	MYV86954.1
Bradyrhizobium sp. CCBAU51011_2498	QHO77723.1
Bradyrhizobium sp. LCT2_334	QHP67896.1
Rhizobium tropici A12_82	NEV14922.1
Bradyrhizobium sp. 1S3_1702	QIG97859.1
Bradyrhizobium sp. 323S2_1668	UGX92416.1
Bradyrhizobium septentrionale 1S1_916	UGY12313.1
Bradyrhizobium sp. 41S5_1336	UFX44210.1
Rhizobium leguminosarum 23B_829	QIO63475.1
Bradyrhizobium diazoefficiens 172S4_1457	QIO97062.1
Rhizobium phaseoli BS3_584	QPK11319.1
Bradyrhizobium brasilense UFLA0613_1435	NLS74415.1
Bradyrhizobium elkanii USDA61_3756	BBC02446.1
Bradyrhizobium elkanii USDA61_4490	BBC03918.1
Mesorhizobium japonicum R7Astar_762	QJF10730.1
Mesorhizobium japonicum R7AstarV2_772	QJI86603.1
Mesorhizobium erdmanii NZP2014_777	QKC80186.1
Mesorhizobium sp. NZP2234_817	QKC93251.1
Mesorhizobium jarvisii ATCC33669_968	QKC67352.1
Mesorhizobium sp. NZP2077_1033	QKD19503.1
Mesorhizobium sp. NZP2298_846	QKC99973.1
Bradyrhizobium septentrionale 162S2_78	UGY25575.1
Bradyrhizobium quebecense 66S1MB_1468	UGA44391.1
Bradyrhizobium diazoefficiens 113-2_1302	QLD46062.1
Bradyrhizobium diazoefficiens HH15_862	BCA19072.1
Bradyrhizobium diazoefficiens H12S4_1055	BCA01706.1
Bradyrhizobium diazoefficiens HF08_768	BCA10329.1
Bradyrhizobium diazoefficiens F07S3_887	BBZ92578.1
Rhizobium mongolense SEMIA4087_1865	MBB4233277.1
Sinorhizobium terangae SEMIA6460_1195	MBB4189071.1
Rhizobium mongolense SEMIA402_1362	MBB4277787.1
Rhizobium lentis SEMIA490_1233	MBB4577373.1
Rhizobium lentis SEMIA4034_1347	MBB5564447.1
Rhizobium tropici SEMIA4063_1263	MBB5596686.1
Rhizobium leucaenae SEMIA4015_1303	MBB6305283.1
Rhizobium lusitanum SEMIA4060_1360	MBB6489464.1
Bradyrhizobium sp. CCBAU21365_484	QOZ15489.1
Bradyrhizobium sp. CCBAU51753_384	QOZ23762.1
Bradyrhizobium arachidis CCBAU51107_1768	QOZ71835.1
Bradyrhizobium sp. CCBAU51765_390	QOZ07563.1
Rhizobium sp. 7_865	QPB24585.1

Protein	Accession
Mesorhizobium sp. 113-1-2_2099	BCG75885.1
Mesorhizobium sp. 113-3-3_1687	BCG82654.1
Mesorhizobium sp. 113-3-9_1853	BCG90531.1
Mesorhizobium sp. 131-2-1_1826	BCG97133.1
Mesorhizobium sp. 131-2-5_1768	BCH04205.1
Mesorhizobium sp. 131-3-5_2207	BCH12724.1
Mesorhizobium sp. L-2-11_1719	BCH18931.1
Mesorhizobium sp. L-8-3_1903	BCH26785.1
Mesorhizobium sp. L-8-10_1963	BCH34748.1
Bradyrhizobium quebecense 12S5_850	UGY00608.1
Bradyrhizobium sp. 144S4_1806	UEM11293.1
Bradyrhizobium canariense BTA-1_479	MBW5436087.1
Rhizobium laguerreae MLR74_764	MBY3349024.1
Rhizobium laguerreae MLR75_790	MBY3356110.1
Rhizobium laguerreae MLR63_732	MBY3370155.1
Rhizobium laguerreae MLR64_803	MBY3377173.1
Rhizobium laguerreae MLR56_1767	MBY3440913.1
Rhizobium laguerreae MLR29_780	MBY3510504.1
Rhizobium sp. T136_897	UFS84753.1
Bradyrhizobium daqingense CCBAU15774_1186	UFS88853.1
Bradyrhizobium canariense WSM471_237	UFW42996.1
Bradyrhizobium arachidis CB756_1412	UFW48142.1
Bradyrhizobium diazoefficiens CB1809_1290	UFW56928.1
Bradyrhizobium canariense WU425_1214	UFW71274.1
Rhizobium sp. C104_769	ULJ82604.1
Rhizobium sp. K102_602	ULR41978.1
Mesorhizobium opportunistum WSM1558_805	UQS64531.1
Rhizobium lusitanum P1-7_1194	SCB48471.1
Bradyrhizobium shewense ERR11_870	SCB45675.1
Rhizobium aethiopicum HBR26_1030	SCB62282.1
Bradyrhizobium brasilense R5_1023	SDD80250.1
Rhizobium tibeticum CGMCC1.7071_1348	SEP27143.1
Bradyrhizobium arachidis LMG26795_1935	SFV19586.1

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Protein	Accession
Sinorhizobium fredii NGR234_571	ACP26049.1
Sinorhizobium meliloti SM11_271	AEH78117.1
Sinorhizobium fredii USDA257_1322	AFL53207.1
Rhizobium phaseoli Ch24-10_1253	KKZ86315.1
Rhizobium grahamii CCGE502_1326	EPE97870.1
Sinorhizobium meliloti GR4_472	AGA07365.1
Rhizobium tropici CIAT899_543	AGB71908.1
Rhizobium leguminosarum TA1_540	QJS28714.1
Rhizobium leguminosarum WSM1689_732	AHF84999.1
Rhizobium leguminosarum CB782_565	AHG46295.1
Rhizobium favelukesii LPU83_520	CDM58563.1
Sinorhizobium americanum CCGM7_520	APG85251.1
Sinorhizobium meliloti RMO17_439	AIM00291.1
Rhizobium leguminosarum CC275e_452	QJX06314.1
Sinorhizobium meliloti RU11/001_444	ARS71331.1
Rhizobium altiplani BR10423_1539	KWV46739.1
Sinorhizobium saheli LMG7837_455	OAP46608.1
Rhizobium leguminosarum Vaf10_708	ANP86597.1
Rhizobium sp. S41_235	ANV23440.1

Protein	Accession
Rhizobium pusense CCGM10_1027	OJH52991.1
Rhizobium pusense CCGM11_1052	OJH57339.1
Sinorhizobium americanum CFNEI73_603	APG91914.1
Rhizobium leguminosarum Vaf-108_173	API50778.1
Rhizobium taibaishanense 14971_699	OLP49266.1
Rhizobium pusense NRCPB10_751	OOO17361.1
Sinorhizobium meliloti USDA1157_523	ASP52231.1
Sinorhizobium meliloti USDA1106_312	ASP59207.1
Sinorhizobium meliloti M270_28	ASP83440.1
Sinorhizobium meliloti KH35c_107	ASQ03326.1
Sinorhizobium meliloti M162_455	ASP92109.1
Sinorhizobium meliloti T073_476	ASP72847.1
Sinorhizobium meliloti HM006_483	ASQ11373.1
Sinorhizobium meliloti USDA1021_557	ASP66088.1
Sinorhizobium meliloti KH46_526	ASP98845.1
Sinorhizobium meliloti CCMMB554(FSM-MA)_579	ASJ60020.1
Rhizobium leguminosarum BIHB1148_1129	ASR11372.1
Rhizobium leguminosarum BIHB1217_640	ASS56317.1
Rhizobium sp. 11515TR_636	ASW07166.1
Sinorhizobium fredii CCBAU83666_670	ASY69789.1
Sinorhizobium sp. CCBAU5631_731	ASY57340.1
Sinorhizobium meliloti B401_474	ATA99655.1
Sinorhizobium meliloti B399_555	ATB05660.1
Rhizobium acidisoli FH23_422	QAS79130.1
Rhizobium sp. ACO-34A_795	ATN35047.1
Rhizobium sullae HCNT1_290	PKA41193.1
Rhizobium sp. Y9_342	AUC10248.1
Sinorhizobium medicae Str10_1025	PLU27838.1
Sinorhizobium medicae Str8_145	PLU44337.1
Sinorhizobium medicae Str7_170	PLU47532.1
Sinorhizobium medicae Str6_281	PLU55499.1
Sinorhizobium medicae Str5_1204	PLU84005.1
Sinorhizobium medicae Str4_456	PLU68741.1
Sinorhizobium medicae Str3_29	PLU67331.1
Sinorhizobium medicae Str1_67	PLU78932.1
Rhizobium leguminosarum Norway_868	AUW43687.1
Sinorhizobium fredii CCBAU45436_2290	AWI57991.1
Rhizobium phaseoli CCGM2_770	PWI53858.1
Sinorhizobium fredii CCBAU25509_780	AWM25820.1
Rhizobium phaseoli CCGM9_784	RDJ10900.1
Rhizobium grahamii CCGM3_621	RDJ11359.1
Rhizobium phaseoli CCGM8_785	RDJ07456.1
Neorhizobium sp. SOG26_366	AXV15864.1
Neorhizobium sp. NCHU2750_578	AYD01657.1
Rhizobium jaguaris CCGE525_314	AYG59761.1
Rhizobium sp. CCGE532_299	AYG73220.1
Rhizobium sp. CCGE531_326	AYG66840.1
Rhizobium phaseoli ATCC14482_449	RUM17939.1
Rhizobium fabae CCBAU33202_54	RUM16147.1
Rhizobium anhuiense CCBAU23252_191	RUM03002.1
Rhizobium vallis CCBAU65647_669	RUM21386.1
Rhizobium chutanense C16_840	RUL98291.1
Sinorhizobium americanum 23C40_244	TCN32353.1
Rhizobium azibense Gr42_496	TCU25398.1
Rhizobium azibense IE4868_244	TCU40315.1
Rhizobium sullae Hc14_424	TCU17200.1

Protein	Accession
Rhizobium laguerreae FB403_292	TCU28786.1
Rhizobium pusense CFBP5875_298	QCL84753.1
Rhizobium sp. NIBRBAC000502774_14	QDG91224.1
Sinorhizobium medicae M14-1_143	TWA29301.1
Sinorhizobium medicae USDA1037_388	TWA39632.1
Sinorhizobium medicae M26-2_362	TWA53322.1
Sinorhizobium medicae M7-4_241	TWA47049.1
Sinorhizobium medicae M19-1_202	TWA37622.1
Neorhizobium alkalisoli 1225_361	TWF54548.1
Rhizobium sp. WL3_81	QEE44438.1
Neorhizobium galegae NG_110_Off_355	KAB1115725.1
Rhizobium grahamii BG7_243	QFY60767.1
Sinorhizobium medicae M58_553	MQV96890.1
Sinorhizobium medicae KH36d_204	MQV74975.1
Sinorhizobium medicae A321_539	MQU79042.1
Sinorhizobium medicae KH53a_66	MQV92335.1
Sinorhizobium medicae M1_62	MQW67958.1
Sinorhizobium medicae M161_533	MQY00569.1
Sinorhizobium medicae M2_43	MQX82010.1
Sinorhizobium saheli USDA4893_462	MQW85785.1
Sinorhizobium medicae M102_93	MQX48062.1
Sinorhizobium terangae USDA4894_836	MQX17408.1
Sinorhizobium fredii USDA207_478	MQW98744.1
Sinorhizobium medicae M22_427	MQX80103.1
Sinorhizobium meliloti AK21_564	QGJ75006.1
Rhizobium oryzihabitans M15_502	QIB39129.1
Rhizobium tropici A12_178	NEV09838.1
Rhizobium leguminosarum 31B_685	QIO46958.1
Rhizobium leguminosarum 9B_120	QIO50787.1
Rhizobium leguminosarum 23B_688	QIO60566.1
Rhizobium leguminosarum 22B_719	QIO68079.1
Rhizobium leguminosarum 3B_599	QIO74709.1
Rhizobium leguminosarum 4B_605	QIO81729.1
Rhizobium pusense FDAARGOS_633_208	QIX21160.1
Rhizobium laguerreae SP15_447	NKM12763.1
Rhizobium ruizarguesonis UPM1134_1163	NKQ82198.1
Rhizobium ruizarguesonis UPM1132_1154	NKQ75179.1
Rhizobium ruizarguesonis UPM1133_776	NKQ87197.1
Rhizobium sophorae CCBAU3386_820	NNU41832.1
Rhizobium indigoferae CCBAU71042_815	NNU52843.1
Rhizobium changzhiense WYCCWR11279_581	NNU49740.1
Rhizobium pusense 17-1009_320	NTE44353.1
Rhizobium leguminosarum RCAM0610_432	QND42759.1
Sinorhizobium meliloti RCAM1115_554	QND33613.1
Sinorhizobium meliloti RCAM1750_333	QND27458.1
Rhizobium leguminosarum RCAM1365_85	QND13120.1
Rhizobium pisi CECT4113_966	MBB3136758.1
Rhizobium laguerreae CECT8280_240	MBB3160627.1
Rhizobium fabae DSM19331_276	MBB3914046.1
Rhizobium metallidurans DSM26575_219	MBB3963624.1
Rhizobium borbori DSM26385_622	MBB4104756.1
Rhizobium azooxidifex DSM100211_771	MBB3979021.1
Rhizobium aethiopicum SEMIA4074_231	MBB4190911.1
Rhizobium esperanzae SEMIA4089_470	MBB4235552.1
Rhizobium mongolense SEMIA4087_728	MBB4229185.1
Sinorhizobium terangae SEMIA6460_438	MBB4185357.1

Protein	Accession
Rhizobium mongolense SEMIA402_81	MBB4272515.1
Rhizobium cellulosilyticum SEMIA448_191	MBB4347219.1
Rhizobium cellulosilyticum SEMIA444_253	MBB4410387.1
Rhizobium esperanzae SEMIA420_91	MBB4430338.1
Rhizobium esperanzae SEMIA414_531	MBB4439379.1
Rhizobium cellulosilyticum SEMIA452_250	MBB4445074.1
Rhizobium aethiopicum SEMIA470_79	MBB4578100.1
Rhizobium etli SEMIA471_891	MBB4481684.1
Rhizobium etli SEMIA489_888	MBB4537513.1
Rhizobium leucaenae SEMIA492_12	MBB4565960.1
Rhizobium lentis SEMIA490_80	MBB4572185.1
Rhizobium lentis SEMIA4034_172	MBB5559155.1
Rhizobium tropici SEMIA4063_507	MBB5593221.1
Rhizobium paranaense SEMIA4064_322	MBB5573219.1
Rhizobium giardinii SEMIA4084_176	MBB5534231.1
Rhizobium wenxiniae DSM100734_151	MBB6160995.1
Rhizobium rosettiformans DSM26376_579	MBB5276809.1
Rhizobium leucaenae SEMIA4015_676	MBB6302413.1
Rhizobium soli AS3.12_60	MBB6507082.1
Rhizobium lusitanum SEMIA4060_295	MBB6484318.1
Rhizobium anhuiense CGMCC1.12621_191	GGD64605.1
Rhizobium wenxiniae CGMCC1.15279_286	GGF85573.1
Rhizobium rosettiformans MAE2-X_566	QRF53612.1
Rhizobium sp. BG6_269	QRM50089.1
Sinorhizobium sp. BG8_459	QRM56264.1
Rhizobium sp. BG4_409	QRM44847.1
Rhizobium sp. ZX09_348	QSZ57411.1
Rhizobium binae BLR235_183	MBX4969304.1
Rhizobium lentis BLR9_786	MBX5011835.1
Rhizobium lentis BLR87_370	MBX5040013.1
Rhizobium lentis BLR98_23	MBX5014733.1
Rhizobium lentis BLR41_476	MBX5052974.1
Rhizobium lentis BLR122_102	MBX5103653.1
Rhizobium lentis BLR127_183	MBX5126250.1
Rhizobium lentis NLR20b_14	MBX5137290.1
Rhizobium laguerreae USLR1A_522	MBY3053986.1
Rhizobium laguerreae USLR2C_332	MBY3035348.1
Rhizobium laguerreae TLR8_598	MBY3078360.1
Rhizobium laguerreae TLR7_13	MBY3089316.1
Rhizobium laguerreae TLR3_729	MBY3105798.1
Rhizobium laguerreae TLR4_722	MBY3098871.1
Rhizobium laguerreae TLR6_43	MBY3069081.1
Rhizobium laguerreae TLR2_752	MBY3139811.1
Rhizobium laguerreae OyaliA_1114	MBY3152528.1
Rhizobium laguerreae Baristepe2_102B_141	MBY3119857.1
Rhizobium laguerreae Baristepe2_103A_859	MBY3133103.1
Rhizobium laguerreae SLR3_24	MBY3226372.1
Rhizobium laguerreae SLR4_211	MBY3210906.1
Rhizobium laguerreae SLR2_724	MBY3221221.1
Rhizobium laguerreae SLR1_37	MBY3233255.1
Rhizobium laguerreae Y2_35	MBY3240092.1
Rhizobium laguerreae Vi3_238	MBY3261629.1
Rhizobium laguerreae V2_666	MBY3249325.1
Rhizobium laguerreae SpLR6a_64	MBY3299984.1
Rhizobium laguerreae SpLR5a_925	MBY3284053.1
Rhizobium laguerreae Len2_769	MBY3325101.1

Protein	Accession
Rhizobium laguerreae H2_411	MBY3309698.1
Rhizobium laguerreae LEN4_51	MBY3274296.1
Rhizobium laguerreae SpLR1a_505	MBY3303734.1
Rhizobium laguerreae HA2_655	MBY3317001.1
Rhizobium laguerreae MLR74_64	MBY3342612.1
Rhizobium laguerreae GU2_273	MBY3336938.1
Rhizobium laguerreae ALM2_106	MBY3329864.1
Rhizobium laguerreae MLR75_64	MBY3349647.1
Rhizobium laguerreae MLR63_707	MBY3365914.1
Rhizobium laguerreae MLR64_64	MBY3370750.1
Rhizobium laguerreae ALG2_710	MBY3358316.1
Rhizobium laguerreae MLR6_805	MBY3379765.1
Rhizobium laguerreae MLR56_1391	MBY3434459.1
Rhizobium laguerreae MLR51_385	MBY3392440.1
Rhizobium laguerreae MLR29_39	MBY3503877.1
Rhizobium laguerreae MLR25_419	MBY3498307.1
Rhizobium laguerreae MLR24_396	MBY3525611.1
Rhizobium laguerreae MLR21_463	MBY3539395.1
Rhizobium laguerreae MLR20_95	MBY3518119.1
Rhizobium laguerreae MLR1_699	MBY3571391.1
Rhizobium laguerreae MLR11_374	MBY3563822.1
Rhizobium laguerreae MLR10_36	MBY3556377.1
Rhizobium miluonense HAMBI2971_818	SCB47624.1
Rhizobium lusitanum P1-7_67	SCB46034.1
Rhizobium multihospitium HAMBI2975_268	SCB25979.1
Rhizobium aethiopicum HBR26_482	SCB57193.1
Rhizobium mongolense subsp.CGMCC1.3401_89	SCW54066.1
Rhizobium pusense LMG25623_258	SDE55221.1
Rhizobium tibeticum CGMCC1.7071_1565	SEN54072.1
Rhizobium subbaraonis JC85_238	SOC45851.1

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Protein	Accession
Sinorhizobium fredii USDA257_1980	AFL55266.1
Rhizobium phaseoli Ch24-10_167	KKZ84404.1
Bradyrhizobium japonicum USDA6_4992	BAL12944.1
Bradyrhizobium japonicum SEMIA5079_141	AHY48761.1
Sinorhizobium americanum CCGM7_972	APG87018.1
Bradyrhizobium japonicum Is-34_2089	KGT74086.1
Bradyrhizobium japonicum E109_1829	AJA65330.1
Microvirga vignae BR3299_1875	KLK90661.1
Bradyrhizobium japonicum FN1_1781	KMJ94830.1
Bradyrhizobium yuanmingense BR3267_295	KRQ01833.1
Bradyrhizobium lablabi CCBAU23086_437	KRR26576.1
Bradyrhizobium diazoefficiens NK6_1124	BAR55446.1
Mesorhizobium ciceri WSM1284_253	AMX99071.1
Bradyrhizobium centrolobii BR10245_156	OAF16444.1
Bradyrhizobium neotropicale BR10247_1049	OAF16907.1
Bradyrhizobium icense LMTR13_2019	ANW03166.1
Bradyrhizobium elkanii BLY6-1_2373	ODM72742.1
Bradyrhizobium elkanii BLY3-8_2375	ODM72169.1
Bradyrhizobium elkanii TnphoA33_923	OIM91006.1
Bradyrhizobium japonicum J5_2654	APG14673.1
Sinorhizobium americanum CFNEI73_1037	APG93531.1
Bradyrhizobium diazoefficiens USDA122_735	APO50756.1

Protein	Accession
Bradyrhizobium sacchari p9-20_1682	OPY95470.1
Sinorhizobium meliloti M270_824	ASP89654.1
Sinorhizobium meliloti M162_623	ASP95624.1
Bradyrhizobium ottawaense OO99_104	AWL91251.1
Sinorhizobium fredii CCBAU83666_1066	ASY73605.1
Sinorhizobium fredii CCBAU83666_1096	ASY73727.1
Sinorhizobium sp. CCBAU5631_1178	ASY60571.1
Rhizobium acidisoli FH23_707	QAS81209.1
Bradyrhizobium forestalis INPA54B_1712	PJG55202.1
Microvirga sp. KLBC81_1676	PVE21038.1
Sinorhizobium fredii CCBAU45436_4299	AWI61908.1
Mesorhizobium loti DSM2626_1237	PWJ87463.1
Rhizobium phaseoli CCGM2_1368	PWI50647.1
Sinorhizobium fredii CCBAU25509_1214	AWM29830.1
Bradyrhizobium diazoefficiens XF7_450	AWO89206.1
Rhizobium phaseoli CCGM9_1186	RDJ04677.1
Rhizobium sp. CCGE532_520	AYG76720.1
Mesorhizobium sp. M6A.T.Cr.TU.016.01.1.1_404	AZO66461.1
Rhizobium phaseoli ATCC14482_847	RUM12766.1
Rhizobium vallis CCBAU65647_809	RUM19236.1
Bradyrhizobium vignae LMG28791_1008	RXG88541.1
Bradyrhizobium zhanjiangense CCBAU51770_872	RXG88713.1
Bradyrhizobium zhanjiangense CCBAU51781_1388	RXG96387.1
Bradyrhizobium zhanjiangense CCBAU51787_1054	RXH39523.1
Bradyrhizobium nanningense CCBAU51757_1077	RXH24102.1
Sinorhizobium americanum 23C40_816	TCN27628.1
Rhizobium azibense Gr42_1165	TCU16185.1
Rhizobium azibense IE4868_1049	TCU33532.1
Bradyrhizobium diazoefficiens 110spc4_490	QBP20981.1
Bradyrhizobium sacchari BR10555_1685	TWB48722.1
Bradyrhizobium sacchari BR10556_1690	TWB67883.1
Bradyrhizobium daqingense CGMCC1.10947_1607	TWH92288.1
Mesorhizobium tianshanense CGMCC1.2546_270	TWI40349.1
Bradyrhizobium huanghuaihaiense CGMCC1.10948_2023	TWI56050.1
Bradyrhizobium hipponense aSej3_370	TYO61989.1
Bradyrhizobium sp. SG09_2387	BBO07921.1
Sinorhizobium medicae A321_552	MQU79132.1
Sinorhizobium terangae USDA4894_618	MQX15681.1
Sinorhizobium fredii USDA207_543	MQW99148.1
Bradyrhizobium japonicum 5873_513	MYV86953.1
Bradyrhizobium sp. CCBAU51011_2497	QHO77722.1
Bradyrhizobium sp. LCT2_335	QHP67897.1
Rhizobium tropici A12_83	NEV14923.1
Bradyrhizobium sp. 1S3_1703	QIG97860.1
Bradyrhizobium sp. 323S2_1669	UGX92417.1
Bradyrhizobium septentrionale 1S1_917	UGY12314.1
Bradyrhizobium sp. 41S5_1335	UFX44209.1
Bradyrhizobium diazoefficiens 172S4_1458	QIO97063.1
Rhizobium phaseoli BS3_583	QPK11318.1
Bradyrhizobium brasilense UFLA0613_1434	NLS74414.1
Bradyrhizobium elkanii USDA61_3755	BBC02445.1
Bradyrhizobium elkanii USDA61_4489	BBC03917.1
Mesorhizobium japonicum R7Astar_761	QJF10729.1
Mesorhizobium japonicum R7AstarV2_771	QJI86602.1
Mesorhizobium erdmanii NZP2014_776	QKC79105.1
Mesorhizobium sp. NZP2234_816	QKC92250.1

Protein	Accession
Mesorhizobium jarvisii ATCC33669_967	QKC66287.1
Mesorhizobium sp. NZP2077_1032	QKD19502.1
Mesorhizobium sp. NZP2298_845	QKC98755.1
Bradyrhizobium septentrionale 162S2_77	UGY25574.1
Bradyrhizobium quebecense 66S1MB_1469	UGA44392.1
Bradyrhizobium diazoefficiens 113-2_1301	QLD46061.1
Bradyrhizobium diazoefficiens HH15_863	BCA19073.1
Bradyrhizobium diazoefficiens H12S4_1056	BCA01707.1
Bradyrhizobium diazoefficiens HF08_769	BCA10330.1
Bradyrhizobium diazoefficiens F07S3_888	BBZ92579.1
Rhizobium mongolense SEMIA4087_1864	MBB4233276.1
Sinorhizobium terangae SEMIA6460_1196	MBB4189072.1
Rhizobium mongolense SEMIA402_1363	MBB4277788.1
Rhizobium lentis SEMIA490_1234	MBB4577374.1
Rhizobium lentis SEMIA4034_1348	MBB5564448.1
Rhizobium tropici SEMIA4063_1262	MBB5596685.1
Rhizobium leucaenae SEMIA4015_1304	MBB6305284.1
Rhizobium lusitanum SEMIA4060_1359	MBB6489463.1
Bradyrhizobium sp. CCBAU21365_485	QOZ15490.1
Bradyrhizobium sp. CCBAU51753_385	QOZ23763.1
Bradyrhizobium arachidis CCBAU51107_1767	QOZ71834.1
Bradyrhizobium sp. CCBAU51765_391	QOZ07564.1
Rhizobium sp. 7_866	QPB24586.1
Mesorhizobium sp. 113-1-2_2098	BCG75884.1
Mesorhizobium sp. 113-3-3_1686	BCG82653.1
Mesorhizobium sp. 113-3-9_1852	BCG90530.1
Mesorhizobium sp. 131-2-1_1825	BCG97132.1
Mesorhizobium sp. 131-2-5_1767	BCH04204.1
Mesorhizobium sp. 131-3-5_2208	BCH12725.1
Mesorhizobium sp. L-2-11_1718	BCH18930.1
Mesorhizobium sp. L-8-3_1902	BCH26784.1
Mesorhizobium sp. L-8-10_1962	BCH34747.1
Bradyrhizobium quebecense 12S5_851	UGY00609.1
Bradyrhizobium sp. 144S4_1805	UEM11292.1
Bradyrhizobium canariense BTA-1_480	MBW5436088.1
Rhizobium sp. T136_896	UFS84752.1
Bradyrhizobium daqingense CCBAU15774_1185	UFS88852.1
Bradyrhizobium canariense WSM471_238	UFW42997.1
Bradyrhizobium arachidis CB756_1411	UFW48141.1
Bradyrhizobium diazoefficiens CB1809_1289	UFW56927.1
Bradyrhizobium canariense WU425_1213	UFW71273.1
Rhizobium leguminosarum Ta1k_843	UIK01364.1
Rhizobium leguminosarum Ta6k_675	UIL30398.1
Rhizobium sp. C104_770	ULJ82605.1
Rhizobium sp. K102_601	ULR41977.1
Mesorhizobium opportunistum WSM1558_806	UQS64532.1
Rhizobium lusitanum P1-7_1193	SCB48467.1
Bradyrhizobium shewense ERR11_871	SCB45680.1
Rhizobium aethiopicum HBR26_1031	SCB62283.1
Bradyrhizobium brasilense R5_1024	SDD80286.1
Rhizobium tibeticum CGMCC1.7071_1347	SEP27128.1
Bradyrhizobium arachidis LMG26795_1936	SFV19587.1

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Protein	Accession

Protein	Accession
Sinorhizobium meliloti BL225C_807	AEG07764.1
Sinorhizobium meliloti AK83_1047	AEG57674.1
Rhizobium sp. Kim5_866	ARQ61073.1
Rhizobium phaseoli Brasil5_742	ARM15260.1
Rhizobium sp. CIAT894_771	ARM91661.1
Sinorhizobium fredii USDA257_636	AFL51010.1
Rhizobium phaseoli Ch24-10_126	KKZ85037.1
Rhizobium grahamii CCGE502_484	EPE95363.1
Sinorhizobium meliloti GR4_922	AGA09139.1
Rhizobium tropici CIAT899_1150	AGB74534.1
Sinorhizobium meliloti 2011_749	AGG70668.1
Rhizobium leguminosarum TA1_854	QJS32073.1
Rhizobium etli Mim1_576	AGS24723.1
Rhizobium leguminosarum CB782_134	AHG44437.1
Rhizobium favelukesii LPU83_1577	CDM61899.1
Rhizobium sp. IE4771_784	AIC30224.1
Sinorhizobium americanum CCGM7_616	APG85724.1
Sinorhizobium meliloti RMO17_692	AIM01763.1
Rhizobium leguminosarum CC275e_708	QJX09034.1
Rhizobium etli IE4803_609	AJC81749.1
Rhizobium gallicum R602_884	AJD44445.1
Sinorhizobium meliloti RU11/001_889	ARS66395.1
Rhizobium altiplani BR10423_1682	KWV44103.1
Sinorhizobium saheli LMG7837_779	OAP43902.1
Rhizobium sp. N1341_761	ANL12879.1
Rhizobium phaseoli N261_625	ANM00524.1
Rhizobium phaseoli N831_610	ANL81077.1
Rhizobium sp. N731_727	ANK89185.1
Rhizobium phaseoli N161_748	ANM07247.1
Rhizobium phaseoli R744_626	ANL30755.1
Rhizobium phaseoli R630_644	ANL49429.1
Rhizobium phaseoli R723_655	ANL36801.1
Rhizobium phaseoli R620_679	ANL56181.1
Rhizobium esperanzae N561_714	ANL06708.1
Rhizobium phaseoli N931_562	ANL68266.1
Rhizobium sp. N1314_708	ANL19437.1
Rhizobium sp. N621_663	ANL00587.1
Rhizobium sp. N113_746	ANL24865.1
Rhizobium phaseoli N671_649	ANL94090.1
Rhizobium phaseoli R650_579	ANL43182.1
Rhizobium phaseoli N771_786	ANL87581.1
Rhizobium phaseoli N841_685	ANL74769.1
Rhizobium phaseoli R611_577	ANL62168.1
Rhizobium sp. N6212_655	ANK94537.1
Rhizobium sp. N324_182	ANM09587.1
Rhizobium sp. N871_762	ANM37552.1
Rhizobium sp. N741_729	ANM43702.1
Rhizobium sp. N941_154	ANM22444.1
Rhizobium sp. N541_151	ANM16056.1
Rhizobium leguminosarum Vaf10_1484	ANP90378.1
Sinorhizobium americanum CFNEI73_699	APG92383.1
Rhizobium leguminosarum Vaf-108_1554	API56334.1
Rhizobium etli 8C-3_924	APO78042.1
Rhizobium gallicum IE4872_1164	APO72606.1
Rhizobium ruizarguesonis RCAM1026_709	UED35010.1
Rhizobium sp. NXC14_776	ARO33209.1

Protein	Accession
Rhizobium sp. TAL182_957	ARO27216.1
Rhizobium etli NXC12_605	ARQ12746.1
Sinorhizobium meliloti USDA1157_975	ASP54571.1
Sinorhizobium meliloti USDA1106_733	ASP61198.1
Sinorhizobium meliloti KH35c_760	ASQ07181.1
Sinorhizobium meliloti T073_897	ASP74691.1
Sinorhizobium meliloti HM006_652	ASQ12177.1
Sinorhizobium meliloti USDA1021_780	ASP67632.1
Sinorhizobium meliloti KH46_686	ASQ02397.1
Sinorhizobium meliloti CCMMB554(FSM-MA)_947	ASJ61985.1
Rhizobium leguminosarum BIHB1148_1028	ASR10809.1
Rhizobium leguminosarum BIHB1217_1205	ASS59389.1
Rhizobium sp. 11515TR_1048	ASW09642.1
Sinorhizobium sp. CCBAU5631_904	ASY58076.1
Sinorhizobium meliloti B401_805	ATA95698.1
Sinorhizobium meliloti B399_1173	ATB01393.1
Rhizobium acidisoli FH23_111	QAS77258.1
Rhizobium sullae HCNT1_1230	PKA42698.1
Sinorhizobium medicae Str10_936	PLU35207.1
Sinorhizobium medicae Str8_321	PLU52950.1
Sinorhizobium medicae Str7_1512	PLU52351.1
Sinorhizobium medicae Str6_358	PLU52769.1
Sinorhizobium medicae Str4_1294	PLU72036.1
Sinorhizobium medicae Str3_911	PLU67717.1
Sinorhizobium medicae Str1_1033	PLU80234.1
Rhizobium sp. NXC24_1088	AVA26262.1
Sinorhizobium fredii NXT3_408	AUX77761.1
Rhizobium leguminosarum UPM791_1176	AVC47557.1
Rhizobium leguminosarum Norway_1563	AUW46752.1
Rhizobium phaseoli CCGM2_1437	PWI50492.1
Rhizobium leguminosarum ATCC14479_1491	AXA44776.1
Rhizobium phaseoli CCGM9_1344	RDJ02601.1
Rhizobium grahamii CCGM3_870	RDJ08865.1
Rhizobium phaseoli CCGM8_1186	RDJ02793.1
Rhizobium jaguaris CCGE525_908	AYG62680.1
Rhizobium sp. CCGE532_738	AYG75047.1
Rhizobium sp. CCGE531_767	AYG68663.1
Rhizobium phaseoli ATCC14482_226	RUM20252.1
Rhizobium fabae CCBAU33202_199	RUM14450.1
Rhizobium anhuiense CCBAU23252_127	RUM04704.1
Rhizobium vallis CCBAU65647_81	RUM27614.1
Rhizobium chutanense C16_384	RUM06476.1
Sinorhizobium americanum 23C40_769	TCN28475.1
Rhizobium azibense Gr42_104	TCU31002.1
Rhizobium azibense IE4868_62	TCU40976.1
Rhizobium sullae Hc14_1312	TCU06791.1
Rhizobium laguerreae FB403_1033	TCU18645.1
Rhizobium indicum JKLM13E_726	QKK33822.1
Rhizobium hidalgonense JKLM19E_372	QKK24691.1
Rhizobium indicum JKLM12A2_782	QKK20968.1
Mesorhizobium sp. B4-1-4_319	UCI34311.1
Mesorhizobium sp. B2-1-1_283	UCI15736.1
Sinorhizobium medicae M14-1_370	TWA24459.1
Sinorhizobium medicae USDA1037_248	TWA42642.1
Sinorhizobium medicae M26-2_301	TWA54029.1
Sinorhizobium medicae M7-4_482	TWA44206.1

Protein	Accession
Sinorhizobium medicae M19-1_374	TWA34180.1
Neorhizobium galegae NG_110_Off_587	KAB1113950.1
Rhizobium grahamii BG7_517	QFY63048.1
Sinorhizobium medicae M58_151	MQV96657.1
Sinorhizobium medicae KH36d_782	MQV72217.1
Sinorhizobium medicae A321_1010	MQU75669.1
Sinorhizobium medicae KH53a_803	MQV91116.1
Sinorhizobium medicae M1_1015	MQW70164.1
Sinorhizobium medicae M161_917	MQX96913.1
Sinorhizobium medicae M2_501	MQX82433.1
Sinorhizobium saheli USDA4893_345	MQW90100.1
Sinorhizobium medicae M102_546	MQX50598.1
Sinorhizobium fredii USDA207_44	MQW95339.1
Sinorhizobium medicae M22_655	MQX75611.1
Sinorhizobium medicae M22_732	MQX76073.1
Sinorhizobium meliloti AK21_922	QGJ77526.1
Rhizobium leguminosarum 248_765	QHW28422.1
Rhizobium tropici A12_259	NEV10713.1
Rhizobium leguminosarum 31B_894	QIO48328.1
Rhizobium leguminosarum 9B_805	QIO55164.1
Rhizobium leguminosarum 23B_865	QIO62201.1
Rhizobium leguminosarum 22B_902	QIO69329.1
Rhizobium leguminosarum 3B_821	QIO76363.1
Rhizobium leguminosarum 4B_893	QIO83382.1
Rhizobium phaseoli BS3_639	QPK11888.1
Rhizobium laguerreae SP15_578	NKM13625.1
Rhizobium ruizarguesonis UPM1134_384	NKQ77914.1
Rhizobium ruizarguesonis UPM1132_484	NKQ71509.1
Rhizobium ruizarguesonis UPM1133_843	NKQ87450.1
Rhizobium ruizarguesonis UPM1135_126	MBC2808211.1
Mesorhizobium japonicum R7Astar_370	QJF08008.1
Mesorhizobium japonicum R7AstarV2_373	QJI83880.1
Mesorhizobium japonicum R7ANSstar_374	QJI89953.1
Rhizobium sophorae CCBAU3386_597	NNU35678.1
Rhizobium indigoferae CCBAU71042_895	NNU52948.1
Rhizobium changzhiense WYCCWR11279_648	NNU50442.1
Mesorhizobium jarvisii ATCC33669_499	QKC63868.1
Sinorhizobium meliloti WSM1022_457	QKN18245.1
Rhizobium leguminosarum RCAM0626_658	QND41357.1
Sinorhizobium meliloti RCAM1115_824	QND35273.1
Sinorhizobium meliloti RCAM1750_482	QND30046.1
Rhizobium leguminosarum RCAM1365_751	QND17929.1
Rhizobium leguminosarum RCAM2802_816	QND23102.1
Rhizobium pisi CECT4113_1108	MBB3137526.1
Rhizobium fabae DSM19331_397	MBB3914649.1
Rhizobium azooxidifex DSM100211_653	MBB3978579.1
Rhizobium aethiopicum SEMIA4074_456	MBB4192118.1
Rhizobium esperanzae SEMIA4089_759	MBB4236972.1
Rhizobium mongolense SEMIA4087_254	MBB4227117.1
Rhizobium mongolense SEMIA402_312	MBB4273551.1
Rhizobium esperanzae SEMIA414_785	MBB4440639.1
Rhizobium aethiopicum SEMIA470_664	MBB4580854.1
Rhizobium etli SEMIA471_1023	MBB4482442.1
Rhizobium etli SEMIA489_1020	MBB4538271.1
Rhizobium leucaenae SEMIA492_968	MBB4570778.1
Rhizobium lentis SEMIA490_981	MBB4576425.1

Protein	Accession
Rhizobium lentis SEMIA4034_1032	MBB5563248.1
Rhizobium tropici SEMIA4063_769	MBB5594367.1
Rhizobium paranaense SEMIA4064_773	MBB5575438.1
Rhizobium giardinii SEMIA4084_967	MBB5537686.1
Rhizobium leucaenae SEMIA4015_897	MBB6303681.1
Rhizobium lusitanum SEMIA4060_591	MBB6486073.1
Rhizobium anhuiense CGMCC1.12621_337	GGD69770.1
Mesorhizobium japonicum R7ANSxCC1192excon1_519	MBE1715685.1
Rhizobium sp. 7_518	QPB22334.1
Sinorhizobium meliloti S35m_439	QPI27460.1
Sinorhizobium meliloti AK76_368	QQF07294.1
Mesorhizobium sp. 131-2-5_963	BCH01161.1
Mesorhizobium sp. 131-3-5_946	BCH08926.1
Rhizobium sp. BG6_536	QRM52193.1
Sinorhizobium sp. BG8_21	QRM53265.1
Rhizobium leguminosarum OyaliB_760	QSW27342.1
Rhizobium lentis BLR27_671	QSW96838.1
Rhizobium binae BLR195_665	QSY85769.1
Rhizobium bangladeshense BLR175_525	QSY91669.1
Rhizobium bangladeshense PLR8-1a_518	QSY97343.1
Rhizobium ruizarguesonis NZLR24_691	QSZ04766.1
Rhizobium leguminosarum GLR17_721	QSZ11936.1
Rhizobium sp. NZLR1_713	QSZ24883.1
Rhizobium sp. NLR16a_612	QTU99518.1
Rhizobium sp. WYJ-E13_648	QWW72221.1
Rhizobium sp. AB2/73_459	QYA15862.1
Rhizobium binae BLR235_72	MBX4967914.1
Rhizobium lentis BLR9_826	MBX5012226.1
Rhizobium lentis BLR87_634	MBX5042015.1
Rhizobium lentis BLR98_144	MBX5018557.1
Rhizobium lentis BLR41_519	MBX5053356.1
Rhizobium lentis BLR122_333	MBX5101027.1
Rhizobium lentis BLR127_745	MBX5128500.1
Rhizobium lentis NLR20b_408	MBX5138117.1
Rhizobium laguerreae USLR1A_622	MBY3054405.1
Rhizobium laguerreae USLR2C_805	MBY3038467.1
Rhizobium laguerreae TLR8_325	MBY3081959.1
Rhizobium laguerreae TLR7_186	MBY3094826.1
Rhizobium laguerreae TLR3_832	MBY3106634.1
Rhizobium laguerreae TLR4_858	MBY3099959.1
Rhizobium laguerreae TLR6_192	MBY3074021.1
Rhizobium laguerreae TLR2_876	MBY3140741.1
Rhizobium laguerreae OyaliA_930	MBY3158123.1
Rhizobium laguerreae Baristepe2_102B_213	MBY3120393.1
Rhizobium laguerreae Baristepe2_103A_682	MBY3137002.1
Rhizobium laguerreae SLR3_806	MBY3229454.1
Rhizobium laguerreae SLR4_19	MBY3206484.1
Rhizobium laguerreae SLR2_865	MBY3222297.1
Rhizobium laguerreae SLR1_667	MBY3235245.1
Rhizobium laguerreae Y2_706	MBY3243543.1
Rhizobium laguerreae Vi3_897	MBY3264760.1
Rhizobium laguerreae V2_335	MBY3252595.1
Rhizobium laguerreae SpLR6a_323	MBY3300976.1
Rhizobium laguerreae SpLR5a_170	MBY3285365.1
Rhizobium laguerreae Len2_498	MBY3328635.1
Rhizobium laguerreae H2_298	MBY3314270.1

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Rhizobium laguerreae LEN4_743	MBY3277950.1
Rhizobium laguerreae SpLR1a_612	MBY3304627.1
Rhizobium laguerreae HA2_877	MBY3318517.1
Rhizobium laguerreae MLR74_346	MBY3347700.1
Rhizobium laguerreae GU2_805	MBY3339238.1
Rhizobium laguerreae ALM2_391	MBY3330378.1
Rhizobium laguerreae MLR75_341	MBY3354644.1
Rhizobium laguerreae MLR63_567	MBY3369883.1
Rhizobium laguerreae MLR64_345	MBY3375708.1
Rhizobium laguerreae ALG2_762	MBY3358645.1
Rhizobium laguerreae MLR6_746	MBY3379263.1
Rhizobium laguerreae MLR56_1187	MBY3439585.1
Rhizobium laguerreae MLR51_502	MBY3397306.1
Rhizobium laguerreae MLR29_356	MBY3509165.1
Rhizobium laguerreae MLR25_569	MBY3503272.1
Rhizobium laguerreae MLR24_712	MBY3526670.1
Rhizobium laguerreae MLR21_359	MBY3543818.1
Rhizobium laguerreae MLR20_504	MBY3523669.1
Rhizobium laguerreae MLR1_617	MBY3575782.1
Rhizobium laguerreae MLR11_295	MBY3568305.1
Rhizobium laguerreae MLR10_614	MBY3558581.1
Sinorhizobium meliloti L6-AK89_465	UDU21572.1
Rhizobium sp. T136_620	UFS80149.1
Rhizobium laguerreae WSM1455_729	UFW68308.1
Rhizobium leguminosarum SU303_732	UFW82088.1
Rhizobium ruizarguesonis TA1_812	UFW98842.1
Sinorhizobium medicae WSM1115_793	UFX06100.1
Sinorhizobium meliloti RRI128_607	UFX12497.1
Rhizobium leguminosarum Ta6_819	UIJ90369.1
Sinorhizobium meliloti Ak57_157	UIJ91051.1
Rhizobium leguminosarum Ta1k_815	UIK02646.1
Neorhizobium galegae 7g_388	UIK04706.1
Rhizobium leguminosarum Ta9k_854	UIK13346.1
Rhizobium leguminosarum TpK_622	UIY27743.1
Neorhizobium galegae VafX2_656	UIY29093.1
Rhizobium gallicum M101_659	ULJ75678.1
Rhizobium gallicum M101_737	ULJ76193.1
Rhizobium sp. C104_305	ULJ77073.1
Rhizobium sp. K102_499	ULR42606.1
Mesorhizobium jarvisii CAASH41096_57	MCH4554769.1
Rhizobium miluonense HAMBI2971_796	SCB17494.1
Rhizobium lusitanum P1-7_120	SCB45780.1
Rhizobium multihospitium HAMBI2975_531	SCB15406.1
Rhizobium mongolense subsp.CGMCC1.3401_546	SCW50121.1
Mesorhizobium qingshengii CGMCC1.12097_1011	SDA89412.1
Rhizobium tibeticum CGMCC1.7071_638	SEP24121.1

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Protein	Accession
Sinorhizobium fredii NGR234_50	ACP24123.1
Sinorhizobium meliloti BL225C_44	AEG03263.1
Sinorhizobium meliloti AK83_98	AEG52177.1
Mesorhizobium ciceri WSM1271_372	ADV11561.1
Sinorhizobium meliloti SM11_101	AEH77641.1
Mesorhizobium australicum WSM2073_302	AGB44868.1
Sinorhizobium fredii USDA257_82	AFL48961.1
Rhizobium grahamii CCGE502_1935	EPE99765.1
Sinorhizobium meliloti GR4_107	AGA05670.1
Rhizobium leguminosarum TA1_49	QJS26180.1
Mesorhizobium japonicum R7A_10	ETA71227.1
Rhizobium leguminosarum WSM1689_65	AHF82499.1
Rhizobium favelukesii LPU83_128	CDM56528.1
Sinorhizobium americanum CCGM7_121	APG83508.1
Sinorhizobium meliloti RMO17_89	AIL98536.1
Rhizobium leguminosarum CC275e_44	QJX03796.1
Rhizobium etli IE4803_73	AJC77988.1
Sinorhizobium meliloti RU11/001_79	ARS69603.1
Aminobacter sp. Root100_1053	KQU66699.1
Rhizobium altiplani BR10423_2069	KWV40747.1
Aminobacter aminovorans KCTC2477_1734	AMS44098.1
Mesorhizobium ciceri CC1192_1488	AMX96790.1
Mesorhizobium ciceri WSM1284_1005	AMY01752.1
Sinorhizobium saheli LMG7837_690	OAP44968.1
Rhizobium sp. N1341_66	ANL08472.1
Rhizobium sp. N731_72	ANK84394.1
Rhizobium esperanzae N561_77	ANL02344.1
Rhizobium sp. N1314_67	ANL14642.1
Rhizobium sp. N621_70	ANK96300.1
Rhizobium sp. N113_75	ANL20520.1
Rhizobium sp. N6212_69	ANK90272.1
Rhizobium sp. N324_72	ANM09193.1
Rhizobium sp. N871_76	ANM33195.1
Rhizobium sp. N741_66	ANM39313.1
Mesorhizobium sp. WSM1497_527	ARP64132.1
Rhizobium sp. N941_83	ANM22107.1
Rhizobium sp. N541_78	ANM15719.1
Rhizobium leguminosarum Vaf10_1122	ANP88453.1
Rhizobium sp. S41_487	ANV24576.1
Rhizobium pusense CCGM10_595	OJH54613.1
Rhizobium pusense CCGM11_627	OJH59040.1
Sinorhizobium americanum CFNEI73_117	APG90043.1
Rhizobium leguminosarum Vaf-108_965	API53224.1
Rhizobium ruizarguesonis RCAM1026_82	UED32272.1
Rhizobium pusense NRCPB10_932	OOO20890.1
Rhizobium sp. NXC14_70	ARO28732.1
Rhizobium sp. TAL182_88	ARO22585.1
Sinorhizobium meliloti USDA1157_74	ASP50431.1
Sinorhizobium meliloti USDA1106_104	ASP57617.1
Sinorhizobium meliloti M270_585	ASP85371.1
Sinorhizobium meliloti KH35c_451	ASQ04969.1
Sinorhizobium meliloti M162_92	ASP90413.1
Sinorhizobium meliloti T073_291	ASP71345.1
Sinorhizobium meliloti HM006_122	ASQ09700.1

Protein	Accession
Sinorhizobium meliloti USDA1021_1008	ASP68247.1
Sinorhizobium meliloti KH46_154	ASP97130.1
Sinorhizobium meliloti CCMMB554(FSM-MA)_109	ASJ58347.1
Rhizobium leguminosarum BIHB1217_305	ASS54383.1
Sinorhizobium fredii CCBAU83666_74	ASY67784.1
Sinorhizobium sp. CCBAU5631_103	ASY55332.1
Sinorhizobium meliloti B401_108	ATA98073.1
Sinorhizobium meliloti B399_148	ATB03824.1
Mesorhizobium loti TONO_579	BAV50609.1
Rhizobium acidisoli FH23_41	QAS76936.1
Rhizobium sp. ACO-34A_265	ATN33096.1
Rhizobium sp. Y9_50	AUC08970.1
Mesorhizobium loti LU_946	PLP59245.1
Sinorhizobium medicae Str10_1411	PLU26260.1
Sinorhizobium medicae Str8_1062	PLU48640.1
Sinorhizobium medicae Str7_1348	PLU60430.1
Sinorhizobium medicae Str6_1059	PLU57937.1
Sinorhizobium medicae Str4_1363	PLU70552.1
Sinorhizobium medicae Str3_394	PLU73236.1
Sinorhizobium medicae Str1_1195	PLU77525.1
Sinorhizobium fredii NXT3_64	AUX75302.1
Rhizobium leguminosarum UPM791_67	AVC48322.1
Rhizobium leguminosarum Norway_90	AUW40844.1
Aminobacter sp. MSH1_1067	AWC25297.1
Sinorhizobium fredii CCBAU45436_353	AWI56044.1
Mesorhizobium loti DSM2626_984	PWJ88296.1
Aminobacter sp. AP02_623	PWK65321.1
Sinorhizobium fredii CCBAU25509_109	AWM23669.1
Rhizobium leguminosarum ATCC14479_742	AXA41316.1
Rhizobium grahamii CCGM3_147	RDJ15430.1
Mesorhizobium sp. M1D.F.Ca.ET.043.01.1.1_427	AZO71678.1
Mesorhizobium sp. M2A.F.Ca.ET.043.02.1.1_619	AZO05657.1
Mesorhizobium sp. M2A.F.Ca.ET.046.03.2.1_231	AZO34246.1
Mesorhizobium sp. M2A.F.Ca.ET.043.05.1.1_550	AZO16508.1
Mesorhizobium sp. M1B.F.Ca.ET.045.04.1.1_1122	AZO32119.1
Mesorhizobium sp. M1E.F.Ca.ET.045.02.1.1_477	AZO22393.1
Mesorhizobium sp. M4B.F.Ca.ET.058.02.1.1_573	AZO48997.1
Mesorhizobium sp. M3A.F.Ca.ET.080.04.2.1_383	AZO09653.1
Mesorhizobium sp. M7D.F.Ca.US.005.01.1.1_229	AZO41344.1
Mesorhizobium sp. M6A.T.Cr.TU.016.01.1.1_125	AZO64463.1
Rhizobium fabae CCBAU33202_831	RUM06915.1
Rhizobium anhuiense CCBAU23252_682	RUL98221.1
Rhizobium vallis CCBAU65647_162	RUM25962.1
Mesorhizobium sp. M7A.F.Ce.TU.012.03.2.1_54	AZV17872.1
Mesorhizobium sp. Pch-S_168	QAZ42469.1
Sinorhizobium americanum 23C40_70	TCN36498.1
Aminobacter aminovorans DSM7048_185	TCS30516.1
Rhizobium laguerreae FB403_866	TCU20912.1
Rhizobium pusense CFBP5875_30	QCL83319.1
Rhizobium indicum JKLM13E_511	QKK32040.1
Rhizobium indicum JKLM12A2_275	QKK16581.1
Mesorhizobium sp. 8_414	QDC01972.1
Mesorhizobium sp. B4-1-4_408	UCI29407.1
Mesorhizobium sp. B2-8-5_803	UCI25744.1
Mesorhizobium sp. B2-1-8_766	UCI19227.1
Mesorhizobium sp. B1-1-8_671	UCI07259.1

Protein	Accession
Mesorhizobium sp. B2-1-1_555	UCI13089.1
Sinorhizobium medicae M14-1_814	TWA19950.1
Sinorhizobium medicae USDA1037_723	TWA35646.1
Sinorhizobium medicae M26-2_225	TWA55855.1
Sinorhizobium medicae M7-4_163	TWA47991.1
Sinorhizobium medicae M19-1_453	TWA33618.1
Rhizobium sp. WL3_276	QEE46527.1
Neorhizobium galegae NG_110_Off_677	KAB1113608.1
Rhizobium grahamii BG7_20	QFY59116.1
Sinorhizobium medicae M58_300	MQW00947.1
Sinorhizobium medicae KH36d_428	MQV71242.1
Sinorhizobium medicae KH36d_675	MQV70537.1
Sinorhizobium medicae A321_671	MQU79601.1
Sinorhizobium medicae KH53a_445	MQV95198.1
Sinorhizobium medicae M1_946	MQW67790.1
Sinorhizobium medicae M161_200	MQX98437.1
Sinorhizobium medicae M2_314	MQX87155.1
Sinorhizobium saheli USDA4893_205	MQW89167.1
Sinorhizobium medicae M102_838	MQX46195.1
Sinorhizobium terangae USDA4894_523	MQX14943.1
Sinorhizobium fredii USDA207_882	MQW94853.1
Sinorhizobium medicae M22_57	MQX78195.1
Sinorhizobium meliloti AK21_96	QGJ73208.1
Rhizobium leguminosarum 248_39	QHW23188.1
Rhizobium oryzihabitans M15_332	QIB37951.1
Rhizobium leguminosarum 31B_468	QIO44920.1
Rhizobium leguminosarum 9B_511	QIO53239.1
Rhizobium leguminosarum 23B_405	QIO58482.1
Rhizobium leguminosarum 22B_509	QIO66115.1
Rhizobium leguminosarum 3B_386	QIO72778.1
Rhizobium leguminosarum 4B_392	QIO79797.1
Rhizobium pusense FDAARGOS_633_352	QIX22359.1
Rhizobium laguerreae SP15_623	NKM14025.1
Rhizobium ruizarguesonis UPM1134_740	NKQ80027.1
Rhizobium ruizarguesonis UPM1132_634	NKQ72357.1
Rhizobium ruizarguesonis UPM1133_1295	NKQ89932.1
Mesorhizobium japonicum R7Astar_742	QJF10596.1
Mesorhizobium japonicum R7AstarV2_752	QJI86469.1
Mesorhizobium japonicum R7ANSstar_752	QJI92541.1
Rhizobium indigoferae CCBAU71042_786	NNU58152.1
Rhizobium changzhiense WYCCWR11279_173	NNU46577.1
Mesorhizobium erdmanii NZP2014_756	QKC78983.1
Mesorhizobium sp. NZP2234_799	QKC92131.1
Mesorhizobium jarvisii ATCC33669_342	QKC63124.1
Mesorhizobium sp. NZP2077_999	QKD19343.1
Mesorhizobium sp. NZP2298_824	QKC98622.1
Rhizobium pusense FDAARGOS_619_313	NRF10732.1
Rhizobium pusense FDAARGOS_618_312	NRF21442.1
Rhizobium pusense 76_21	QKJ90052.1
Sinorhizobium meliloti WSM1022_40	QKN13339.1
Rhizobium pusense 17-1009_381	NTE45609.1
Mesorhizobium loti 582_674	QND66725.1
Mesorhizobium huakuii 583_618	QND58685.1
Rhizobium leguminosarum RCAM0626_456	QND39850.1
Sinorhizobium meliloti RCAM1115_138	QND31818.1
Sinorhizobium meliloti RCAM1750_89	QND25902.1

Protein	Accession
Rhizobium leguminosarum RCAM2802_474	QND21401.1
Rhizobium metallidurans DSM26575_415	MBB3964672.1
Rhizobium azooxidifex DSM100211_830	MBB3979225.1
Rhizobium aethiopicum SEMIA4074_1239	MBB4195328.1
Rhizobium mongolense SEMIA4087_358	MBB4227700.1
Sinorhizobium terangae SEMIA6460_117	MBB4184040.1
Rhizobium mongolense SEMIA402_649	MBB4274733.1
Rhizobium aethiopicum SEMIA470_1383	MBB4583962.1
Rhizobium giardinii SEMIA4084_116	MBB5533922.1
Rhizobium rosettiformans DSM26376_706	MBB5277434.1
Mesorhizobium sangaii DSM100039_391	MBB6409078.1
Rhizobium anhuiense CGMCC1.12621_1350	GGD99863.1
Aminobacter sp. SR38_252	QOF73122.1
Mesorhizobium sp. NBSH29_165	QPC86801.1
Mesorhizobium sp. INR15_934	QPC94762.1
Sinorhizobium meliloti S35m_54	QPI26318.1
Sinorhizobium meliloti AK76_51	QQF05115.1
Mesorhizobium sp. J8_370	BCM17405.1
Mesorhizobium sp. 113-1-2_2039	BCG75703.1
Mesorhizobium sp. 113-3-3_1649	BCG82511.1
Mesorhizobium sp. 113-3-9_1816	BCG90409.1
Mesorhizobium sp. 131-2-1_1783	BCG96994.1
Mesorhizobium sp. 131-2-5_1725	BCH04070.1
Mesorhizobium sp. 131-3-5_1744	BCH11855.1
Mesorhizobium sp. L-2-11_1637	BCH18732.1
Mesorhizobium sp. L-8-3_1867	BCH26650.1
Mesorhizobium sp. L-8-10_1935	BCH34631.1
Rhizobium rosettiformans MAE2-X_268	QRF51834.1
Rhizobium sp. BG6_73	QRM48363.1
Sinorhizobium sp. BG8_137	QRM54276.1
Rhizobium leguminosarum OyaliB_486	QSW22604.1
Rhizobium ruizarguesonis NZLR24_81	QSZ01759.1
Rhizobium leguminosarum GLR17_94	QSZ09093.1
Rhizobium sp. ZX09_25	QSZ55910.1
Rhizobium pusense SX41_78	QWW74258.1
Rhizobium lentis BLR9_17	MBX5008527.1
Rhizobium lentis BLR87_180	MBX5043593.1
Rhizobium lentis BLR98_725	MBX5016760.1
Rhizobium lentis BLR41_382	MBX5056862.1
Rhizobium lentis BLR122_487	MBX5106169.1
Rhizobium lentis BLR127_714	MBX5128176.1
Rhizobium lentis NLR20b_504	MBX5142866.1
Mesorhizobium sp. PAMC28654_305	UDL92152.1
Sinorhizobium meliloti L6-AK89_52	UDU20041.1
Rhizobium sp. T136_465	UFS81814.1
Rhizobium laguerreae WSM1455_39	UFW64844.1
Rhizobium leguminosarum SU303_37	UFW78714.1
Rhizobium ruizarguesonis TA1_46	UFW94910.1
Sinorhizobium medicae WSM1115_58	UFX02443.1
Sinorhizobium meliloti RRI128_25	UFX08638.1
Rhizobium leguminosarum Gr44902_68	UIJ80520.1
Rhizobium leguminosarum Ta6_71	UIJ87163.1
Sinorhizobium meliloti Ak57_395	UIJ95646.1
Rhizobium leguminosarum Ta1k_79	UIJ99450.1
Neorhizobium galegae 7g_75	UIK06135.1
Rhizobium leguminosarum Ta9k_77	UIK11616.1

Protein	Accession
Rhizobium leguminosarum Tp73_4_97	UIK18246.1
Rhizobium leguminosarum Ta6k_79	UIL28656.1
Rhizobium leguminosarum TpK_94	UIY25020.1
Mesorhizobium ciceri USDA3378_403	MCF6126835.1
Rhizobium sp. SL42_128	UJW76142.1
Rhizobium sp. C104_371	ULJ77428.1
Rhizobium sp. K102_336	ULR43453.1
Rhizobium cremeum W15(2021)_295	MCJ7997434.1
Mesorhizobium opportunistum WSM1558_323	UQS67314.1
Rhizobium aethiopicum HBR26_870	SCB61048.1
Rhizobium mongolense subsp.CGMCC1.3401_817	SCW33642.1
Mesorhizobium muleiense CGMCC1.11022_79	SDJ86702.1
Rhizobium pusense LMG25623_539	SDE36712.1
Mesorhizobium qingshengii CGMCC1.12097_1142	SDA92158.1
Rhizobium tibeticum CGMCC1.7071_937	SEM97498.1
Rhizobium subbaraonis JC85_189	SOC45428.1

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Protein	Accession
Bradyrhizobium sp. BTAi1_428	ABQ33801.1
Bradyrhizobium japonicum USDA6_2910	BAL09704.1
Cupriavidus sp. GA3-3_1229	EON16407.1
Bradyrhizobium japonicum SEMIA5079_729	AHY49794.1
Bradyrhizobium pachyrhizi BR3262_431	KRQ10956.1
Bradyrhizobium valentinum LmjM3_2421	KRQ98247.1
Bradyrhizobium centrolobii BR10245_2434	OAF02444.1
Bradyrhizobium neotropicale BR10247_1473	OAF14083.1
Bradyrhizobium icense LMTR13_1107	ANW01153.1
Bradyrhizobium elkanii BLY6-1_1132	ODM80263.1
Bradyrhizobium elkanii BLY3-8_2680	ODM70826.1
Bradyrhizobium elkanii TnphoA33_1062	OIM90748.1
Bradyrhizobium diazoefficiens USDA122_1349	APO52530.1
Bradyrhizobium forestalis INPA54B_723	PJG52251.1
Bradyrhizobium diazoefficiens XF7_1023	AWO92182.1
Cupriavidus sp. UBA8761_376	HBD35212.1
Cupriavidus sp. UBA8769_783	HBO82846.1
Rhizobium jaguaris CCGE525_202	AYG58925.1
Bradyrhizobium vignae LMG28791_671	RXG94373.1
Bradyrhizobium zhanjiangense CCBAU51770_904	RXG88215.1
Bradyrhizobium zhanjiangense CCBAU51781_1040	RXG86510.1
Bradyrhizobium diazoefficiens 110spc4_1227	QBP24135.1
Bradyrhizobium hipponense aSej3_1398	TYO64461.1
Sinorhizobium terangae USDA4894_271	MQX19329.1
Bradyrhizobium japonicum 5873_43	MYV80443.1
Bradyrhizobium sp. CCBAU51011_1378	QHO74771.1
Bradyrhizobium sp. LCT2_800	QHP69709.1
Bradyrhizobium sp. 1S3_1136	QIG95592.1
Bradyrhizobium diazoefficiens 172S4_234	QIO91037.1
Bradyrhizobium brasilense UFLA0613_765	NLS72048.1
Bradyrhizobium elkanii USDA61_523	BBB96019.1
Sinorhizobium terangae SEMIA6460_1121	MBB4188816.1
Bradyrhizobium sp. CCBAU21365_2076	QOZ20997.1
Bradyrhizobium sp. CCBAU53421_122	QOZ30990.1

Protein	Accession
Cupriavidus taiwanensis SWF66294_498	ULX53049.1
Bradyrhizobium brasilense R5_372	SDE29759.1
Cupriavidus sp. YR651_603	SDC67334.1

C. 8 Cluster 4871 中的假定蛋白

Protein	Accession
Bradyrhizobium japonicum USDA6_1848	BAL08275.1
Cupriavidus sp. GA3-3_562	EON19020.1
Cupriavidus sp. SK-4_241	EYS96689.1
Cupriavidus sp. SK-3_1358	KDP84486.1
Bradyrhizobium japonicum SEMIA5079_2632	AHY53555.1
Bradyrhizobium japonicum E109_683	AJA61485.1
Bradyrhizobium japonicum FN1_1634	KMJ95228.1
Bradyrhizobium manausense BR3351_1481	KRQ09181.1
Rhizobium leguminosarum Vaf-108_984	API53320.1
Rhizobium leguminosarum BIHB1217_318	ASS54482.1
Azorhizobium sp. 12-66-6_723	OYW41802.1
Rhizobium sp. ACO-34A_1489	ATN36657.1
Rhizobium sullae HCNT1_803	PKA45252.1
Rhizobium leguminosarum UPM791_51	AVC48218.1
Rhizobium leguminosarum Norway_63	AUW40730.1
Rhizobium ruizarguesonis UPM1134_910	NKQ80665.1
Rhizobium ruizarguesonis UPM1132_774	NKQ73246.1
Rhizobium ruizarguesonis UPM1133_526	NKQ85721.1
Azorhizobium oxalatiphilum CCM7897_1482	GGF80475.1
Rhizobium anhuiense CGMCC1.12621_1319	GGD98947.1

C. 9 Cluster 2010 中的假定蛋白

Protein	Accession
Cupriavidus sp. GA3-3_545	EON16318.1
Cupriavidus sp. SK-4_21	EYS98262.1
Cupriavidus sp. IK-TO18_763	MBF6987909.1
Cupriavidus sp. LEh25_539	MBP0619572.1
Cupriavidus sp. AcVe19-1a_248	MBP0631555.1
Cupriavidus sp. AcVe19-6a_445	MBP0638476.1
Cupriavidus sp. KK10_300	QUN30740.1
Cupriavidus sp. MP-37_251	UDM53061.1
Cupriavidus taiwanensis SWF66294_286	ULX51745.1
Cupriavidus taiwanensis LMG19426_468	SOY60578.1
Cupriavidus taiwanensis STM3511_472	SOY65345.1
Cupriavidus taiwanensis STM3711_523	SOY65110.1
Cupriavidus taiwanensis STM6132_519	SOY92845.1
Cupriavidus taiwanensis STM3681_547	SOY94180.1
Cupriavidus taiwanensis STM6044_20	SOZ41401.1
Cupriavidus taiwanensis STM6032_40	SOZ12904.1
Cupriavidus taiwanensis STM6021_246	SPC23775.1
Cupriavidus taiwanensis STM6043_41	SOZ10723.1
Cupriavidus taiwanensis STM6116_384	SOZ30436.1
Cupriavidus taiwanensis STM6117_369	SOZ17849.1
Cupriavidus taiwanensis STM6150_443	SOZ27343.1
Cupriavidus neocaledonicus STM6082_398	SOZ38652.1
Cupriavidus taiwanensis STM8560_472	SOZ69744.1
Cupriavidus taiwanensis STM6119_372	SOZ49704.1
Cupriavidus taiwanensis STM8557_423	SOZ64800.1

Protein	Accession
Cupriavidus taiwanensis STM8558_438	SOZ65687.1
Cupriavidus taiwanensis STM8561_537	SOZ85821.1
Cupriavidus taiwanensis STM8564_519	SOZ94240.1
Cupriavidus taiwanensis STM8565_528	SOZ89083.1
Cupriavidus taiwanensis mpp1.1_444	SPA01753.1
Cupriavidus taiwanensis cmp52_611	SPS00294.1
Cupriavidus taiwanensis TPIG6a_531	SPA51516.1
Cupriavidus taiwanensis TPUD27.6_513	SPA19977.1
Cupriavidus taiwanensis mpp1.3_434	SPA08515.1
Cupriavidus taiwanensis MAPUD10.1_315	SPA17659.1
Cupriavidus taiwanensis SWF66324_345	SPA34955.1
Cupriavidus taiwanensis ip2.30/pp2.3_437	SPA32006.1
Cupriavidus taiwanensis STM6083_21	SPA42877.1
Cupriavidus taiwanensis SWF65033_27	SPA55809.1