SUPPLEMENTARY MATERIAL

Figure SF1. Maximum likelihood-based tree showing the phylogenetic relationship of the bacterial strains from different phylogenetic groups (α-*proteobacteria* = **1A**; β-*proteobacteria* = **1B**; ɣ-*proteobacteria* = **1C**; *Firmicutes* = **1D**; *Actinobacteria* = **1E**; *Bacteriodetes* = **1F)** based on the partial sequences of the 16S rRNA gene. N_2-fixing microorganisms obtained in the current study along with those of the closely related sequences obtained from the Genbank are presented in different colors (black = direct plating; red = enrichment in semisolid N-free medium before plating; blue = enrichment followed by subculturing in semisolid N-free medium before plating; and bold black = GenBank sequences). Numbers above the nodes represent maximum likelihood bootstrap support above 70% and numbers in parentheses represent bootstrap values from neighbor joining, maximum parsimony, and Bayesian analyses, respectively. An asterisks (*) at the node reflects a bootstrap support above 70% for at least three of the four phylogenetic methods. Same super script with some of the *Pseudomonas* strains represents the isolates detected to high frequency, showed identical DNA profiles as well as identical 16S rRNA gene sequences. Genus level clustering is represented on the right.

Figure SF2. Representative genomic fingerprint profiles of different free-living diazotrophs isolated from the Amazon forest soil. Name in parentheses represents the closest cultured relative microorganism identified based on partial sequencing of the 16S rRNA gene. Four right most lanes represent pure culture isolates obtained from ATTC. Fragment sizes on the left represent those of a DNA size marker.

Table ST1. Blast search results of partial sequences of the 16S rRNA gene from the Amazon forest isolates. Only closest cultured relatives are presented. Third column represents the frequency of an isolate was observed in this study with all three isolation strategies. The double positive sign (++) in the ARA column represents a higher acetylene reduction activity for the isolate in comparison to that for the positive control *Herbaspiriilum seropedicae* (28 nmol/ml C_2H_4 produced per week). Same super script with some of the *Pseudomonas* strains represents the isolates detected to high frequency, showed identical DNA profiles as well as identical 16S rRNA gene sequences. This was done to confirm the DNA finger printing results by sequencing few strains.

Fig. **1A**

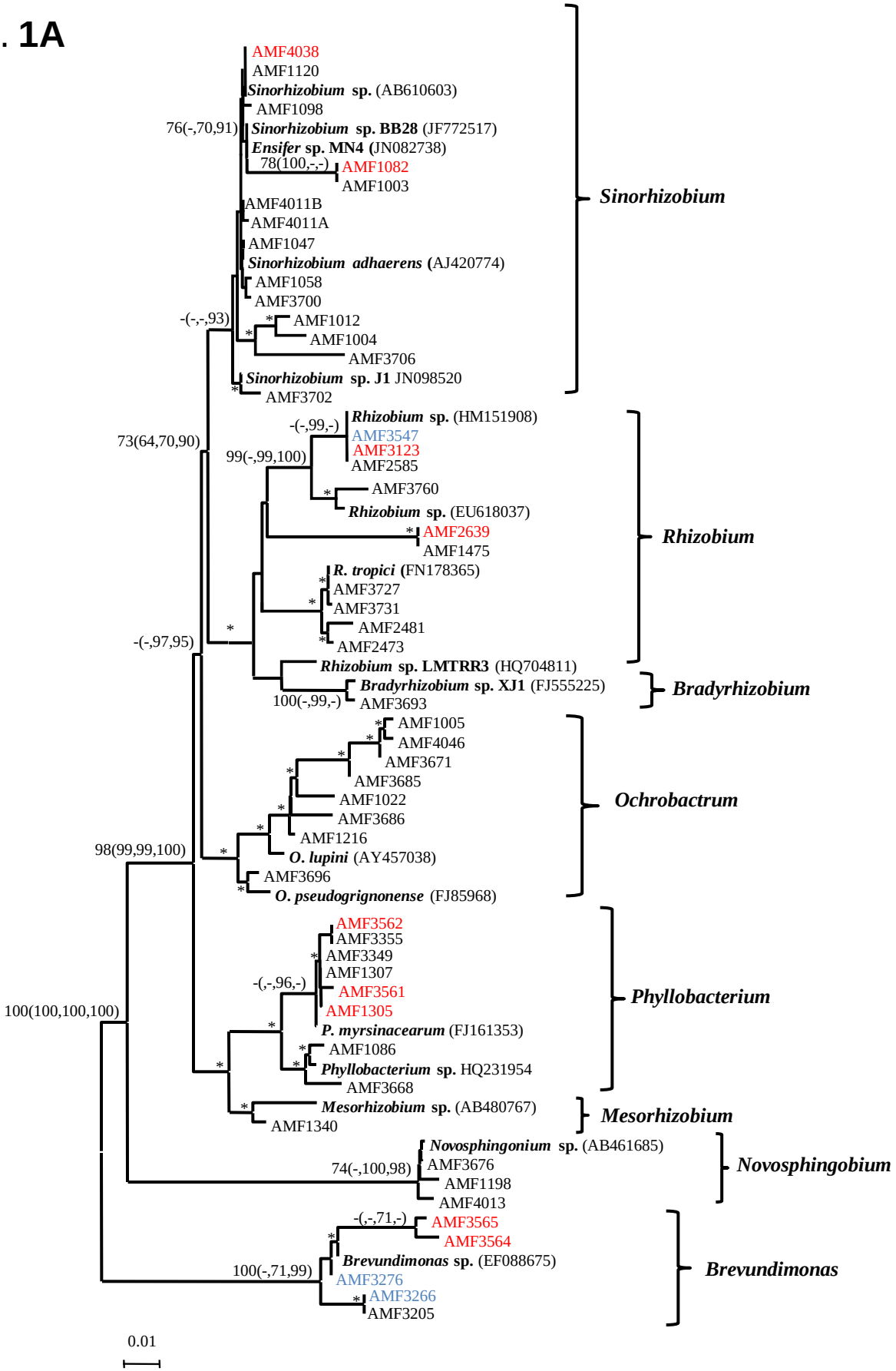

AMF4038
AMF1120
Sinorhizobium sp. (AB610603)
AMF1098
76(-,70,91)
Sinorhizobium sp. BB28 (JF772517)
Ensifer sp. MN4 (JN082738)
78(100,-,-)
AMF1082
AMF1003
AMF4011B
AMF4011A
AMF1047
Sinorhizobium adhaerens (AJ420774)
AMF1058
AMF3700
-(-,-,93)
AMF1012
AMF1004
AMF3706
Sinorhizobium sp. J1 JN098520
AMF3702
Sinorhizobium
Rhizobium sp. (HM151908)
-(-,99,-)
AMF3547
AMF3123
73(64,70,90)
99(-,99,100)
AMF2585
AMF3760
Rhizobium sp. (EU618037)
AMF2639
AMF1475
R. tropici (FN178365)
AMF3727
AMF3731
AMF2481
-(-,97,95)
AMF2473
Rhizobium
Rhizobium sp. LMTRR3 (HQ704811)
Bradyrhizobium sp. XJ1 (FJ555225)
100(-,99,-)
AMF3693
Bradyrhizobium
AMF1005
AMF4046
AMF3671
AMF3685
AMF1022
AMF3686
AMF1216
98(99,99,100)
O. lupini (AY457038)
AMF3696
O. pseudogrignonense (FJ85968)
Ochrobactrum
AMF3562
AMF3355
AMF3349
AMF1307
-(,-,96,-)
AMF3561
AMF1305
100(100,100,100)
P. myrsinacearum (FJ161353)
AMF1086
Phyllobacterium sp. HQ231954
AMF3668
Phyllobacterium
Mesorhizobium sp. (AB480767)
AMF1340
Mesorhizobium
Novosphingonium sp. (AB461685)
74(-,100,98)
AMF3676
AMF1198
AMF4013
Novosphingobium
-(,-,71,-)
AMF3565
AMF3564
Brevundimonas sp. (EF088675)
100(-,71,99)
AMF3276
AMF3266
AMF3205
Brevundimonas
0.01

Fig. **1B**

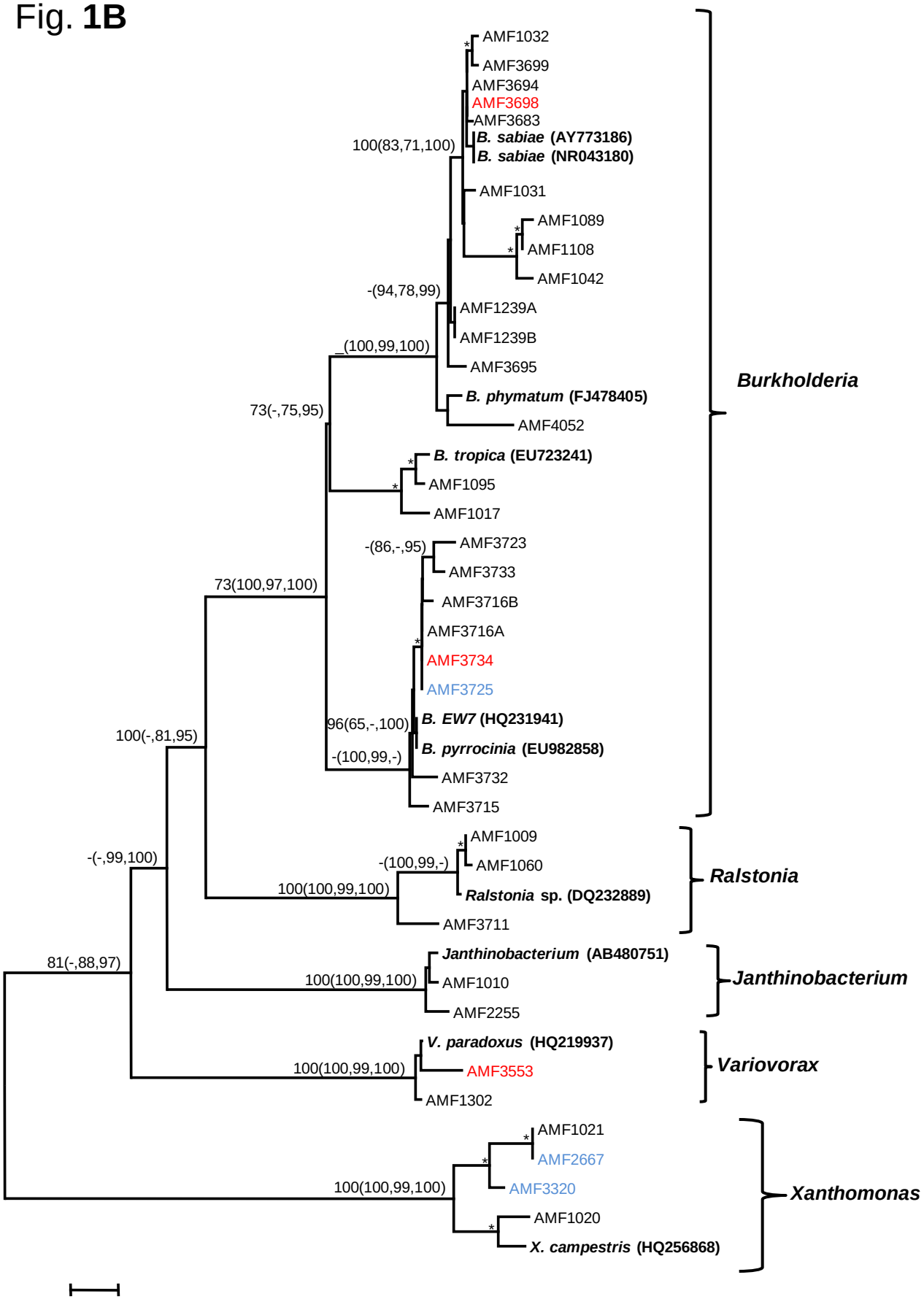
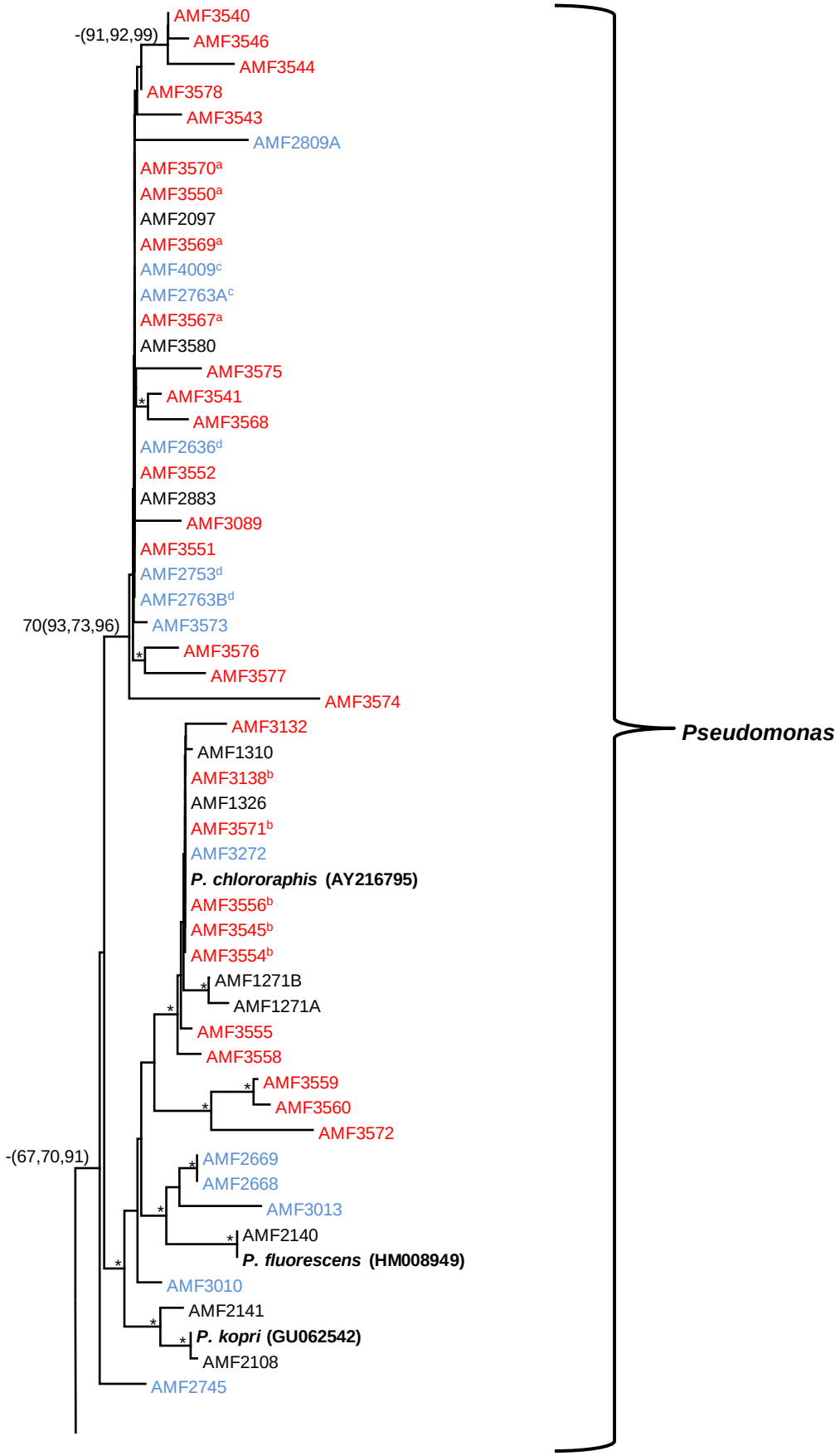

AMF1032
AMF3699
AMF3694
AMF3698
AMF3683
B. sabiae (AY773186)
B. sabiae (NR043180)
100(83,71,100)
AMF1031
AMF1089
AMF1108
AMF1042
-(94,78,99)
AMF1239A
AMF1239B
_(100,99,100)
AMF3695
B. phymatum (FJ478405)
73(-,75,95)
AMF4052
B. tropica (EU723241)
AMF1095
AMF1017
-(86,-,95)
AMF3723
AMF3733
73(100,97,100)
AMF3716B
AMF3716A
AMF3734
AMF3725
96(65,-,100)
B. EW7 (HQ231941)
100(-,81,95)
B. pyrrocinia (EU982858)
-(100,99,-)
AMF3732
AMF3715
Burkholderia
AMF1009
-(-,99,100)
-(100,99,-)
AMF1060
Ralstonia sp. (DQ232889)
100(100,99,100)
AMF3711
Ralstonia
81(-,88,97)
Janthinobacterium (AB480751)
100(100,99,100)
AMF1010
AMF2255
Janthinobacterium
V. paradoxus (HQ219937)
100(100,99,100)
AMF3553
AMF1302
Variovorax
AMF1021
AMF2667
100(100,99,100)
AMF3320
AMF1020
X. campestris (HQ256868)
Xanthomonas
0.01

Fig. **1C**



To be continued to the next page

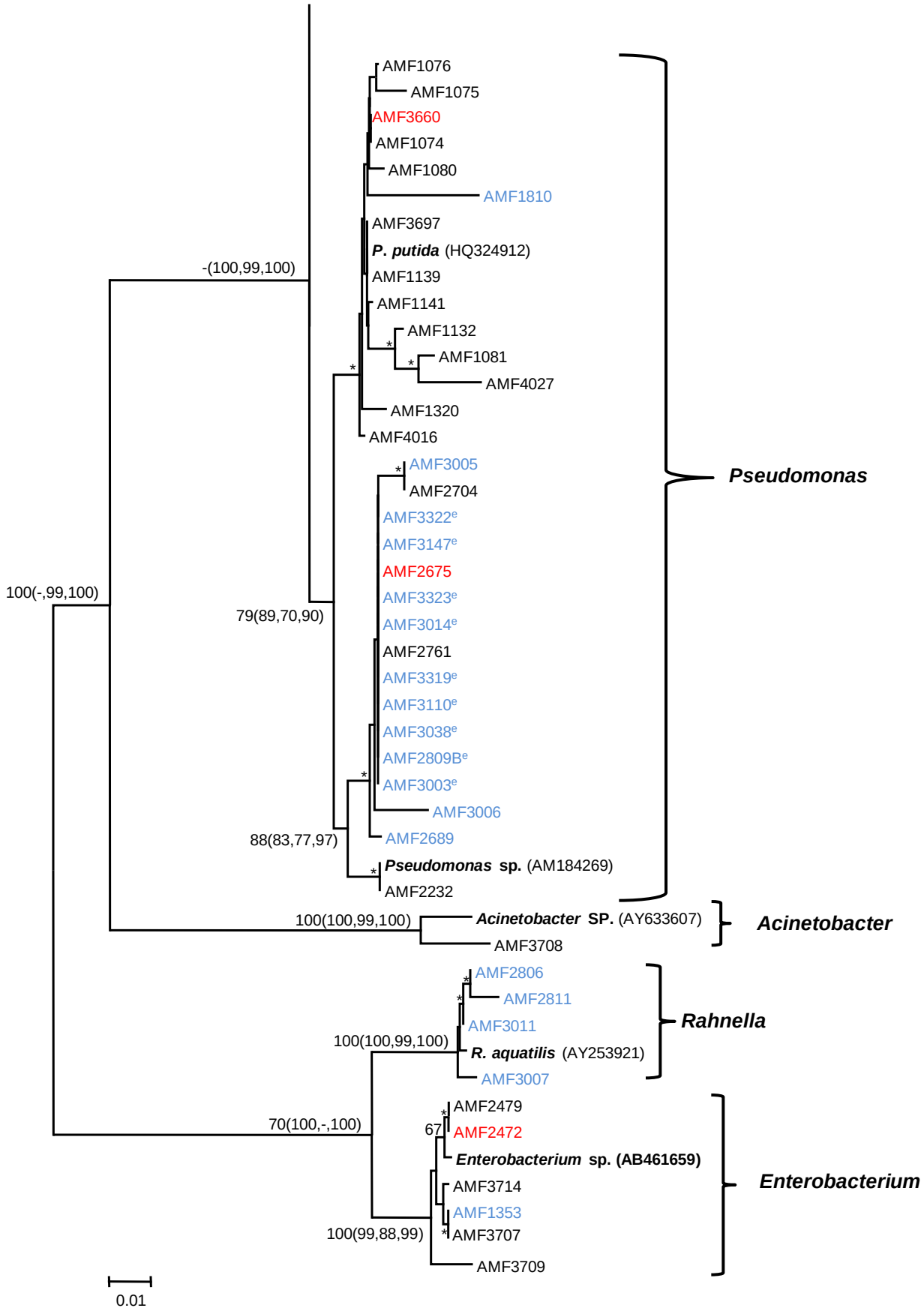

AMF1076
AMF1075
AMF3660
AMF1074
AMF1080
AMF1810
AMF3697
P. putida (HQ324912)
AMF1139
AMF1141
AMF1132
AMF1081
AMF4027
AMF1320
AMF4016
AMF3005
AMF2704
AMF3322e
AMF3147e
AMF2675
AMF3323e
AMF3014e
AMF2761
AMF3319e
AMF3110e
AMF3038e
AMF2809Be
AMF3003e
AMF3006
AMF2689
Pseudomonas sp. (AM184269)
AMF2232
Pseudomonas
Acinetobacter SP. (AY633607)
AMF3708
Acinetobacter
AMF2806
AMF2811
AMF3011
R. aquatilis (AY253921)
AMF3007
Rahnella
AMF2479
AMF2472
Enterobacterium sp. (AB461659)
AMF3714
AMF1353
AMF3707
AMF3709
Enterobacterium
-(100,99,100)
100(-,99,100)
79(89,70,90)
88(83,77,97)
100(100,99,100)
100(100,99,100)
70(100,-,100)
67
100(99,88,99)
0.01

Fig. **1D**

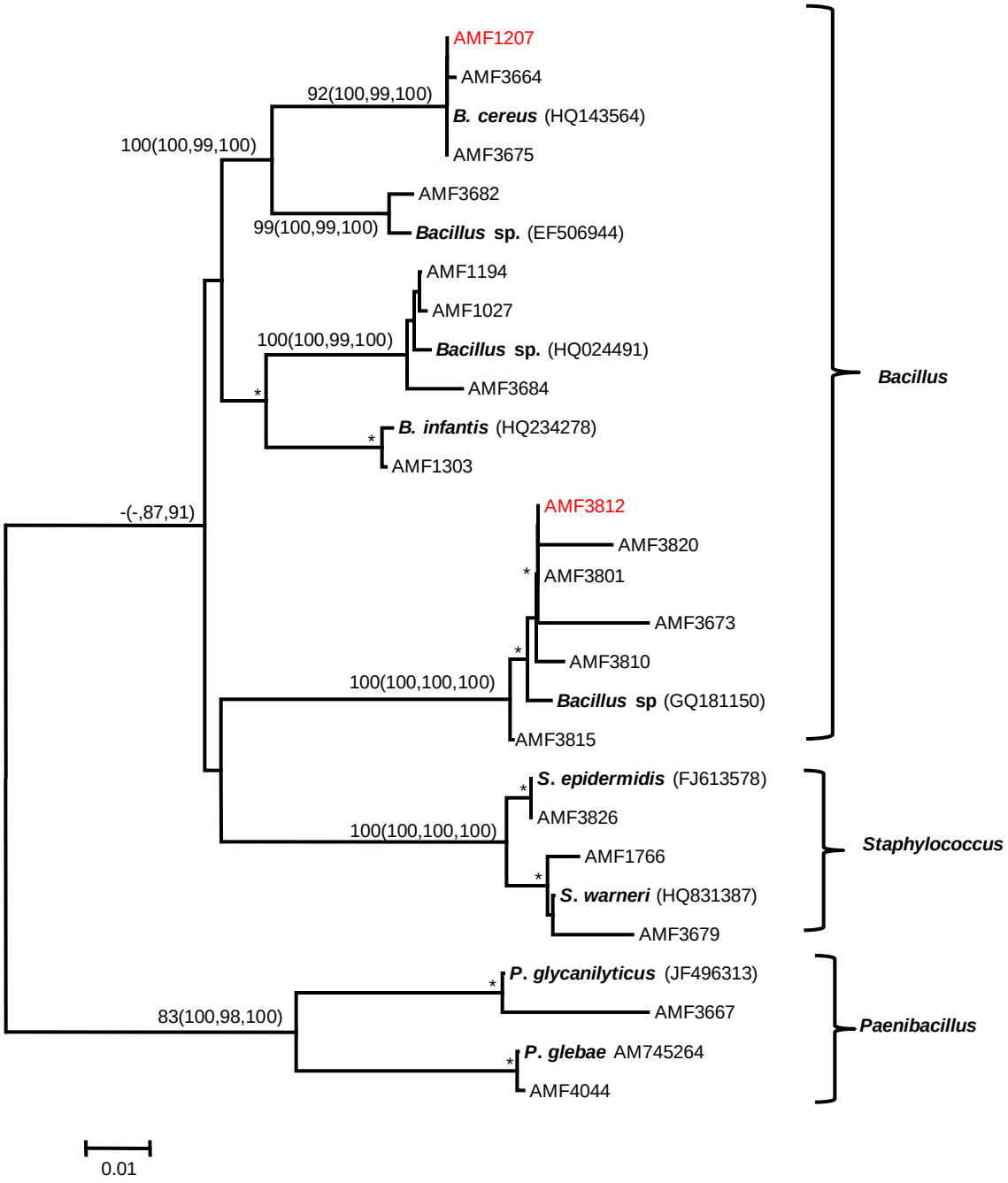

AMF1207
AMF3664
92(100,99,100)
B. cereus (HQ143564)
100(100,99,100)
AMF3675
AMF3682
99(100,99,100)
Bacillus sp. (EF506944)
AMF1194
AMF1027
100(100,99,100)
Bacillus sp. (HQ024491)
AMF3684
*
*
B. infantis (HQ234278)
AMF1303
-(-,87,91)
AMF3812
AMF3820
*
AMF3801
AMF3673
*
AMF3810
100(100,100,100)
Bacillus sp (GQ181150)
AMF3815
Bacillus
*
S. epidermidis (FJ613578)
AMF3826
100(100,100,100)
AMF1766
*
S. warneri (HQ831387)
AMF3679
Staphylococcus
*
P. glycanilyticus (JF496313)
AMF3667
83(100,98,100)
*
P. glebae AM745264
AMF4044
Paenibacillus
0.01

Fig. **1E**

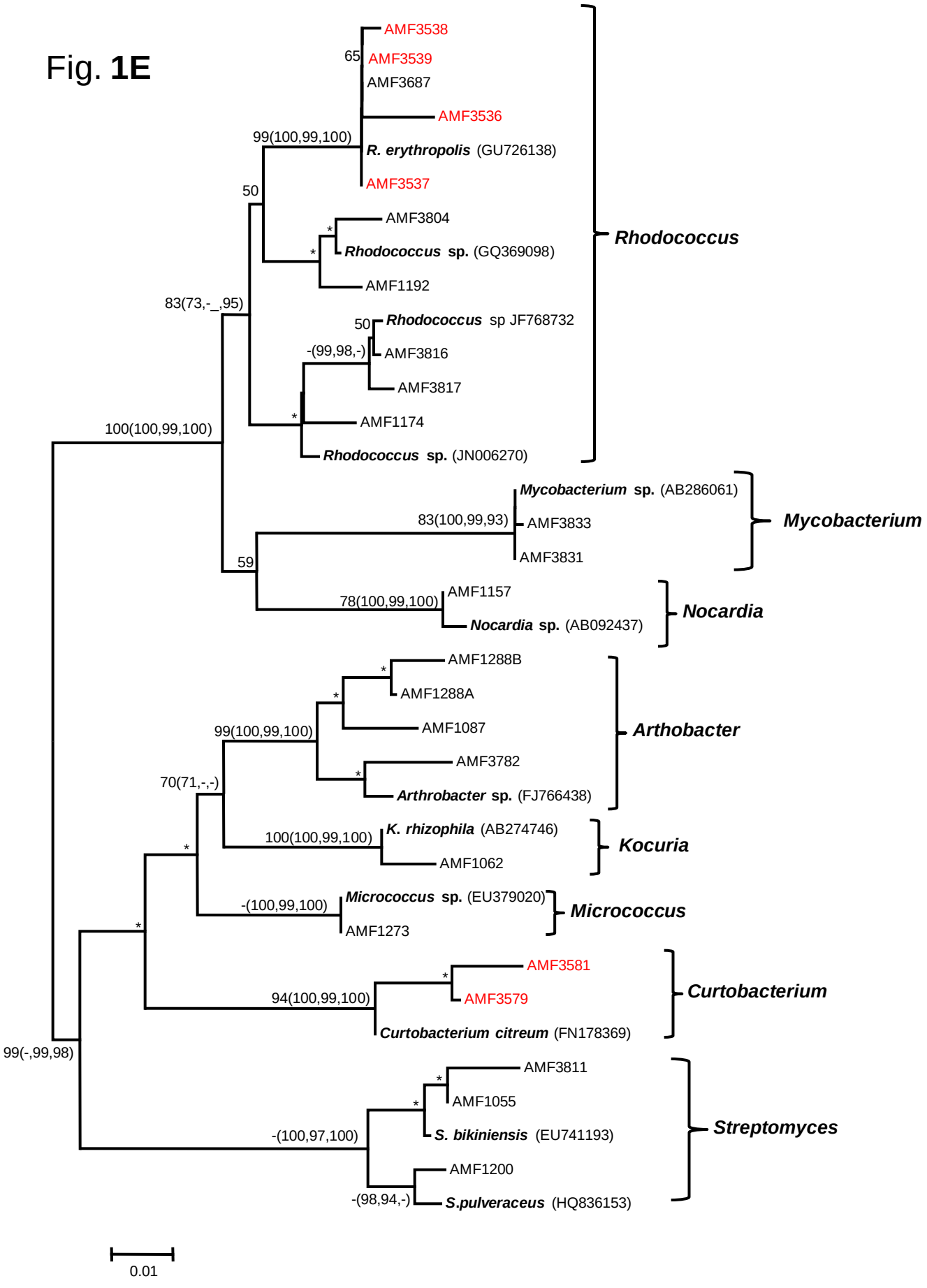
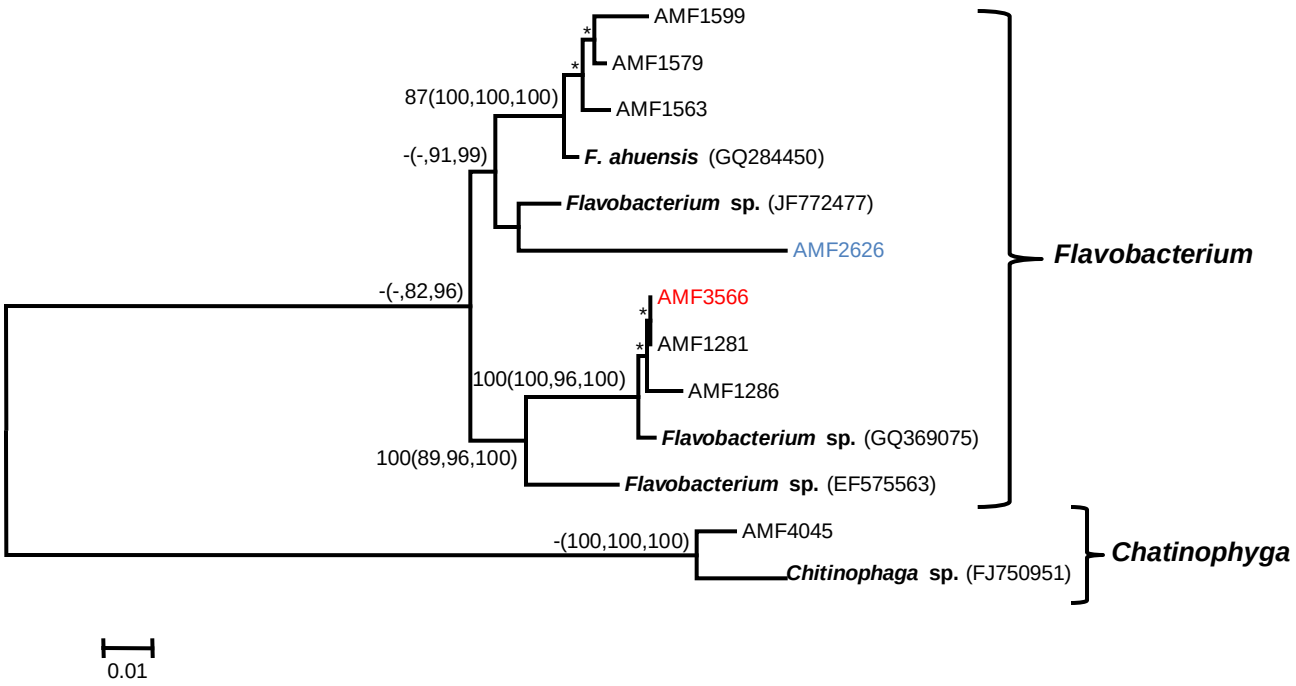
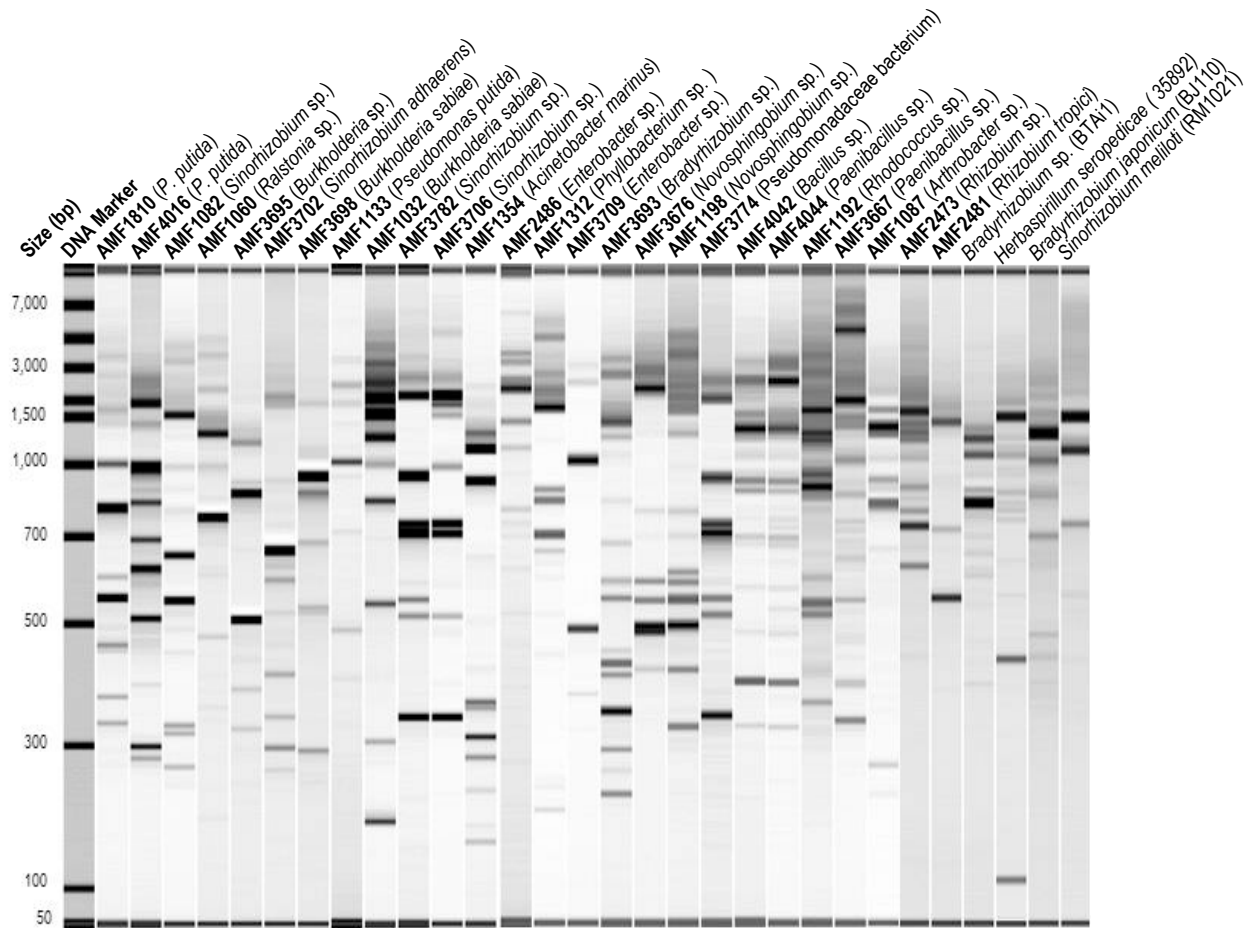

AMF3538
65
AMF3539
AMF3687
AMF3536
99(100,99,100)
R. erythropolis (GU726138)
AMF3537
50
AMF3804
*
Rhodococcus sp. (GQ369098)
*
AMF1192
83(73,-_,95)
50
Rhodococcus sp JF768732
-(99,98,-)
AMF3816
AMF3817
*
AMF1174
100(100,99,100)
Rhodococcus sp. (JN006270)
Rhodococcus
Mycobacterium sp. (AB286061)
83(100,99,93)
AMF3833
AMF3831
Mycobacterium
59
AMF1157
78(100,99,100)
Nocardia sp. (AB092437)
Nocardia
AMF1288B
*
AMF1288A
*
AMF1087
99(100,99,100)
AMF3782
*
Arthrobacter sp. (FJ766438)
70(71,-,-)
Arthobacter
*
K. rhizophila (AB274746)
100(100,99,100)
AMF1062
Kocuria
*
Micrococcus sp. (EU379020)
-(100,99,100)
AMF1273
Micrococcus
*
AMF3581
*
94(100,99,100)
AMF3579
Curtobacterium citreum (FN178369)
Curtobacterium
99(-,99,98)
AMF3811
*
AMF1055
*
S. bikiniensis (EU741193)
-(100,97,100)
AMF1200
-(98,94,-)
S.pulveraceus (HQ836153)
Streptomyces
0.01

Fig. **1F**


AMF1599
AMF1579
AMF1563
87(100,100,100)
-(-,91,99)
F. ahuensis (GQ284450)
Flavobacterium sp. (JF772477)
AMF2626
Flavobacterium
-(-,82,96)
AMF3566
AMF1281
100(100,96,100)
AMF1286
Flavobacterium sp. (GQ369075)
100(89,96,100)
Flavobacterium sp. (EF575563)
AMF4045
-(100,100,100)
Chitinophaga sp. (FJ750951)
Chatinophyga
0.01


Size (bp)
DNA Marker
AMF1810 (P. putida)
AMF4016 (P. putida)
AMF1082 (Sinorhizobium sp.)
AMF1060 (Ralstonia sp.)
AMF3695 (Burkholderia sp.)
AMF3702 (Sinorhizobium adhaerens)
AMF3698 (Burkholderia sabiae)
AMF1133 (Pseudomonas putida)
AMF1032 (Burkholderia sabiae)
AMF3782 (Sinorhizobium sp.)
AMF3706 (Sinorhizobium sp.)
AMF1354 (Acinetobacter marinus)
AMF2486 (Enterobacter sp.)
AMF1312 (Phyllobacterium sp.)
AMF3709 (Enterobacter sp.)
AMF3693 (Bradyrhizobium sp.)
AMF3676 (Novosphingobium sp.)
AMF1198 (Novosphingobium sp.)
AMF3774 (Pseudomonadaceae bacterium)
AMF4042 (Bacillus sp.)
AMF4044 (Paenibacillus sp.)
AMF1192 (Rhodococcus sp.)
AMF3667 (Paenibacillus sp.)
AMF1087 (Arthrobacter sp.)
AMF2473 (Rhizobium sp.)
AMF2481 (Rhizobium sp.)
Bradyrhizobium sp. (BTAi1)
Herbaspirillum seropedicae (35892)
Bradyrhizobium japonicum (BJ110)
Sinorhizobium meliloti (RM1021)
7,000
3,000
1,500
1,000
700
500
300
100
50

SI Table 1: Analysis of the organisms isolated from the Amazon forest under different oxygen concentrations. Identification was performed on the basis of partial 16S rRNA gene sequences and closest cultured relatives as identified by using the BLAST search in the GeneBank databases are presented in table.

Isolates from solid hypoxic plates (incubated under 2% oxygen concentration)

Strain	Accession number	In-group Isolates	ARA	*nif*H	Closest cultured organism	Nucleotide identity (%)
Sinorhizobium						
AMF4011A*	JQ316268	1	(-)	(+)	*Sinorhizobium* sp. (HM151907)	99
AMF4011B*	JQ316265	1	(-)	(+)	*Sinorhizobium* sp. (HM151907)	99
AMF1047*	JQ316271	3	(-)	(+)	*Ensifer adhaerens* sp. (AM181735)	99
AMF1058*	JQ316267	2	(-)	(+)	*Sinorhizobium* sp. (EF462381)	99
AMF1120*	JQ316266	3	(-)	(+)	*Sinorhizobium* sp. (HM151907)	98
AMF1098*	JQ316275	3	(-)	(+)	*Sinorhizobium* sp. (HM151907)	99
AMF3700*	JQ316274	2	(-)	(+)	*Ensifer adhaerens* sp. (AM181735)	99
AMF1004*	JQ316270	2	(-)	(+)	*Sinorhizobium* sp. (HM151907)	98
AMF1012	JQ316273	5	(-)	(+)	*Sinorhizobium* sp. (HM151907)	98
AMF3706	JQ316433	2	(-)	(+)	*Sinorhizobium* sp. (HM151907)	95
AMF3702	JQ316272	2	(-)	(-)	*Sinorhizobium* sp. (JN098520)	98
AMF1003*	JQ316429	1	(-)	(+)	*Sinorhizobium* sp. (JF432095)	97
Rhizobium						
AMF2473*	JQ316289	2	(-)	(+)	*Rhizobium* sp. (GU975794)	98
AMF2481*	JQ316290	1	(-)	(+)	*Rhizobium tropici* (JF318177)	98
AMF3731*	JQ316291	1	(-)	(+)	*Rhizobium tropici* (FN178365)	98
AMF3727*	JQ316292	3	(-)	(+)	*Rhizobium tropici* (FN178365)	99
AMF3760	JQ316287	3	(-)	(+)	*Rhizobium* sp. (EU618037)	98
AMF2585	JQ316284	2	(-)	(+)	*Rhizobium* sp. (HM151908)	99
AMF1475	JQ316288	3	(-)	(+)	*Rhizobium* sp. (DQ993274)	95
Bradyrhizobium						

AMF3693*	JQ316293	4	(-)	(+)	*Bradyrhizobium* sp. (FJ555225)	98
Ochrobacterum						
AMF3686	JQ316277	1	(-)	(-)	*O. haematophilum* (AM422370)	97
AMF1022	JQ316278	3	(-)	(-)	*O. haematophilum* (AM422370)	96
AMF4046	JQ316279	1	(+)	(+)	*O. haematophilum* (AM422370)	95
AMF3671	JQ316281	1	(+)	(+)	*O. haematophilum* (AM422370)	95
AMF1005	JQ316280	3	(-)	(-)	*O. haematophilum* (AM422370)	95
AMF3685	JQ316282	1	(-)	(-)	*O. haematophilum* (AM422370)	96
AMF1216	JQ316276	2	(+)	(+)	*O. haematophilum* (AM422370)	98
AMF3696	JQ316283	3	(-)	(+)	*O.* sp. (FJ493143)	98
Phyllobacterium						
AMF3355	JQ316256	1	(-)	(+)	*P. myrsinacearum* (FJ161353)	99
AMF3349	JQ316257	2	(+)	(+)	*P. myrsinacearum* (FJ161353)	99
AMF1307	JQ316259	6	(-)	(+)	*P. myrsinacearum* (FJ161353)	99
AMF1086	JQ316262	1	(-)	(+)	*P.* sp. KW15 (HQ231954)	98
AMF3668	JQ316263	3	(-)	(+)	*P.* sp. KW15 (HQ231954)	97
Mesorhizobium						
AMF1340*	JQ316264	5	(-)	(+)	*Mesorhizobium* sp. Acj 124 (AB480767)	97
Brevundimonas						
AMF3205*	JQ316299	2	(-)	(+)	*Brevundimonas* sp. NBD8 (HQ256539)	98
Novosphingobium						
AMF3676	JQ316300	4	(+)	(+)	*Novosphingobium* sp. F2 (FJ377543)	97
AMF1198	JQ316301	2	(++)	(+)	*Sphingomonadaceae* sp. (AB461685)	98
AMF4013	JQ316302	1	(++)	(+)	*Novosphingobium* sp. (FJ377543)	98
Burkholderia						
AMF1239A	JQ316410	2	(-)	(+)	*Burkholderia* sp. *semia* (FJ025138)	99
AMF1239B	JQ316409	1	(-)	(+)	*Burkholderia* sp. *semia* (FJ025138)	99

AMF1042	JQ316413	2	(-)	(+)	*Burkholderia* sp. *semia* (FJ025138)	98
AMF1108	JQ316411	3	(+)	(+)	*Burkholderia* sp. *semia* (FJ025138)	98
AMF1089	JQ316414	1	(-)	(+)	*Burkholderia* sp. *semia* (FJ025138)	98
AMF1031	JQ316415	1	(+)	(+)	*Burkholderia* sp. *semia* (FJ025138)	99
AMF3699	JQ316416	3	(-)	(+)	*Burkholderia* sp. *semia* (FJ025138)	99
AMF1032	JQ316418	1	(+)	(+)	*Burkholderia* sp. *semia* (FJ025138)	99
AMF3695	JQ316417	1	(-)	(+)	*Burkholderia* sp. *semia* (FJ025138)	99
AMF3694	JQ316419	1	(-)	(-)	*Burkholderia* sp. *semia* (FJ025138)	99
AMF3683	JQ316387	3	(+)	(+)	*Burkholderia* sp. *semia* (FJ025138)	97
AMF4052	JQ316420	2	(-)	(+)	*Burkholderia* sp. (AB303628)	
AMF1095*	JQ316412	1	(++)	(+)	*Burkholderia tropica* (EF622219)	99
AMF1017*	JQ316408	4	(++)	(+)	*Burkholderia tropica* (EF622219)	98
AMF3733	JQ316397	1	(-)	(-)	*Burkholderia* sp. *CBPB-CHS* (AY640617)	98
AMF3716A	JQ316402	3	(-)	(+)	*Burkholderia* sp. EW7 (HQ231941)	99
AMF3716B	JQ316401	1	(-)	(+)	*Burkholderia* sp. EW7 (HQ231941)	99
AMF3715	JQ316404	1	(-)	(+)	*Burkholderia* sp. EW7 (HQ231941)	99
AMF3732	JQ316405	2	(-)	(+)	*Burkholderia* sp. *IT1(2011)* (JF825996)	98
AMF3723	JQ316407	1	(-)	(+)	*Burkholderia cepacia* (HQ236034)	98
Ralstonia						
AMF1060	JQ316400	1	(+)	(+)	*Ralstonia* sp. *MCT1* (DQ232889)	98
AMF1009	JQ316396	1	(+)	(+)	*Ralstonia* sp. *MCT1* (DQ232889)	99
AMF3711	JQ316398	2	(++)	(+)	*Ralstonia* sp. (D88009)	98
Janthinobacterium						
AMF2255	JQ316389	1	(-)	(-)	*Janthinobacterium* sp. *TN115* (HQ680635)	98
AMF1010	JQ316390	3	(-)	(-)	*Janthinobacterium* sp. Acj 103 (AB480751)	99
Variovorax						
AMF1302	JQ316399	2	(-)	(-)	*Variovorax paradoxus* (FJ527675)	99
Xanthomonas						
AMF1020	JQ316394	1	(+)	(-)	*Xanthomonas campestris* (HQ256868)	98

AMF1021	JQ316392	1	(-)	(+)	*Stenotrophomonas* sp. HQ256870)	98
Pseudomonas						
AMF2097	JQ316316	1	(+)	(-)	*Pseudomonas brenneri* (FN393788)	99
AMF2108	JQ316350	1	(-)	(-)	*Pseudomonas* sp. (HM196354)	99
AMF1271A	JQ316335	4	(-)	(+)	*Pseudomonas chlororaphis* (AY216795)	98
AMF1271B	JQ316340	1	(-)	(+)	*Pseudomonas chlororaphis* (AY216795)	99
AMF1326	JQ316331	1	(-)	(+)	*Pseudomonas chlororaphis* (AY216795)	99
AMF1310	JQ316348	3	(-)	(+)	*Pseudomonas chlororaphis* (AY216795)	99
AMF2704	JQ316352	2	(-)	(+)	*Pseudomonas* sp. (FJ786056)	96
AMF2232	JQ316361	1	(-)	(-)	*Pseudomonas* sp. (AM184269)	99
AMF1320	JQ316374	1	(++)	(+)	*Pseudomonas putida* (EU443617)	97
AMF1081	JQ316370	1	(++)	(+)	*Pseudomonas* sp. (HQ840771)	97
AMF4027	JQ316372	1	(++)	(+)	*Pseudomonas putida* (GQ221267)	96
AMF1132	JQ316371	2	(++)	(+)	*Pseudomonas* sp. (HQ840771)	99
AMF1141	JQ316368	1	(++)	(+)	*Pseudomonas* sp. (HQ840771)	99
AMF1139	JQ316365	1	(++)	(+)	*Pseudomonas* sp. (HQ840771)	99
AMF3697	JQ316362	3	(++)	(+)	*Pseudomonas* sp. (HQ840771)	99
AMF1074	JQ316366	4	(++)	(+)	*Pseudomonas* sp. (JF895527)	99
AMF4016	JQ316364	2	(-)	(+)	*Pseudomonas* sp. (HQ840771)	98
AMF1080	JQ316373	1	(++)	(+)	*Pseudomonas putida* (EU364531)	98
AMF2140	JQ316363	1	(++)	(+)	*Pseudomonas* sp. (JF825993)	99
AMF1076	JQ316367	1	(-)	(+)	*Pseudomonas* sp. (DQ079062)	99
AMF2883	JQ316317	1	(+)	(+)	*Pseudomonas* sp. (EU680994)	99
AMF3580	JQ316318	1	(+)	(+)	*Pseudomonas* sp. (EU680994)	99
AMF2761	JQ316358	1	(-)	(-)	*Pseudomonas* sp. (EU680994)	99
AMF2141	JQ316349	1	(-)	(-)	*Pseudomonas* sp. ps4-4	99
AMF1075	JQ316369	1	(-)	(-)	*Pseudomonas putida* (HM755529)	98
Acinetobacterium						
AMF3708	JQ316376	2	(+)	(-)	*Acinetobacter septicus* (FJ263922)	95

Enterobacter						
AMF3714*	JQ316382	7	(+)	(+)	*Enterobacter* sp. ICB464 (HM013842)	98
AMF3707*	JQ316383	5	(+)	(+)	*Enterobacter* sp. *MTH17* (HQ202542)	98
AMF3709*	JQ316385	4	(++)	(+)	*Enterobacter* sp. NII-72 (FJ897483)	98
AMF2479	JQ316384	2	(++)	(+)	*Enterobacter* sp. (FJ179170)	99
Bacillus						
AMF3675	JQ316238	4	(-)	(+)	*Bacillus* sp. LT3 (FJ946999)	99
AMF3664	JQ316239	1	(-)	(+)	*Bacillus cereus GMX6* (AM422128)	99
AMF3682	JQ316244	2	(+)	(+)	*Bacillus* sp. *CH-1* (EF506944)	97
AMF1027	JQ316240	1	(-)	(+)	*Bacillus* sp. *IMT02* (FR727712)	99
AMF1194	JQ316241	2	(+)	(+)	*Bacillus* sp. *IMT02* (FR727712)	99
AMF3684	JQ316242	3	(+)	(+)	*Bacillus* sp. *SB-S2* (EU912476)	99
AMF1303	JQ316243	1	(+)	(+)	*Bacillus* sp. *HJB004* (HQ331103)	98
AMF3673	JQ316252	1	(-)	(-)	*Bacillus* sp. *BD-85* (AF169519)	98
AMF3810	JQ316253	1	(-)	(-)	*Bacillus* sp. *13644B* (EU741095)	97
AMF3801	JQ316250	2	(-)	(-)	*Bacillus* sp. *13644B* (EU741095)	98
AMF3820	JQ316248	1	(-)	(-)	*Bacillus* sp. *13644B* (EU741095)	98
AMF3815	JQ316251	3	(-)	(-)	*Bacillus* sp. *13644B*	98
Staphylococcus						
AMF1766	JQ316245	3	(-)	(+)	*Staphylococcus warneri* (HQ831388)	98
AMF3679	JQ316246	1	(-)	(+)	*Staphylococcus warneri* (HQ831387)	98
AMF3826	JQ316247	1	(-)	(+)	*Staphylococcus epidermidis* (FJ613578)	99
Paenibacillus						
AMF4044	JQ31625	2	(+)	(+)	*Paenibacillus glebae* (AM745264)	98
AMF3667	JQ316255	3	(+)	(+)	*Paenibacillus* sp. D75 (HQ657320)	99
Rhodococcus						
AMF3816	JQ316217	1	(+)	(+)	*Rhodococcus* sp. *PSS3* (JF768732)	99
AMF3817	JQ316218	4	(+)	(+)	*Rhodococcus* sp. 4-8 (FJ905295)	98

AMF1174	JQ316219	3	(-)	(+)	*Rhodococcus* sp. L-15 (JN006270)	97
AMF1192	JQ316220	3	(-)	(+)	*Rhodococcus* sp. *RD6.2* (AY436807)	97
AMF3804	JQ316224	3	(+)	(+)	*Rhodococcus* sp. *RD6.2* (AY436807)	97
AMF3687	JQ316222	6	(+)	(+)	*Rhodococcus qingshengii* (HQ202829)	97
Nocardia						
AMF1157	JQ316431	3	(-)	(+)	*Nocardia* sp. *YU011-1* (AB092437)	99
Mycobacte rium						
AMF3831	JQ316215)	3	(-)	(+)	*Mycobacterium* sp. *NMR17-5* (AB286061)	99
AMF3833	JQ316216)	2	(-)	(-)	*Mycobacterium* sp. *NMR17-5* (AB286061)	99
Arthobacter						
AMF3782	JQ316231	1	(-)	(-)	*Arthrobacter* sp. *CFM 20* (FN666614)	97
AMF1288A	JQ316228	2	(-)	(-)	*Arthrobacter* sp. *D48* (HQ657321)	98
AMF1288B	JQ316229	1	(-)	(-)	*Arthrobacter* sp. (HQ657321)	96
AMF1087	JQ316230	1	(-)	(-)	*Arthrobacter* sp. KMSZP1 (JF768706)	98
Kocuria						
AMF1062	JQ316232	2	(-)	(+)	*Kocuria rhizophila* (AB274746)	98
Micrococcus						
AMF1273*	JQ316233	6	(++)	(+)	*Micrococcus luteus* (AB617561)	99
Streptomyces						
AMF1200	JQ316236	1	(-)	(-)	*Streptomyces pulveraceus* (GU296740)	97
AMF3811	JQ316234	1	(-)	(-)	*Streptomyces bikiniensis* (EU741193)	96
AMF1055	JQ316235	2	(-)	(-)	*Streptomyces nashvillensis* (FJ481063)	97
Flavobacterium						
AMF1579	JQ316421	2	(+)	(+)	*Flavobacterium ahuensis* (GQ284450)	97
AMF1599	JQ316423	1	(+)	(+)	*Flavobacterium* sp. (DQ072106)	96
AMF1563	JQ316422	1	(-)	(+)	*Flavobacterium ahuensis* (GQ284450)	98
AMF1281	JQ316425	2	(+)	(+)	*Flavobacterium* sp. 30C (EU057850)	98

AMF1286	JQ316426	3	(-)	(+)	*Flavobacterium* sp. 30C (EU057850)	98
Chatinophyga						
AMF4045	JQ316428	3	(+)	(+)	*Chitinophaga* sp. (FJ750951)	98

Isolates from Semisolid/solid hypoxic plates (incubated under 20 and 2% oxygen concentration)

Sinorhizobium						
AMF4038	JQ316269	2	(-)	(+)	*Sinorhizobium* sp. (HM151907)	98
AMF1082*	JQ316430	4	(-)	(+)	*Ensifer* sp. MN4 (JN082738)	97
Rhizobium						
AMF3123	JQ316286	8	(-)	(+)	*Rhizobium* sp. 3 (HM151908)	99
AMF2639	JQ316294	5	(-)	(+)	*Rhizobium* sp. CCBAU 33107 (DQ993274)	95
Phyllobacterium						
AMF1305	JQ316260	3	(+)	(+)	*P. myrsinacearum* (FJ161353)	99
AMF3562	JQ316258	4	(-)	(+)	*P. myrsinacearum* (FJ161359)	98
AMF3561	JQ316261	11	(-)	(+)	*P. myrsinacearum* (FJ161359)	98
Brevundimonas						
AMF3564*	JQ316295	5	(-)	(+)	*Brevundimonas intermedia* (JF915342)	97
AMF3565*	JQ316296	3	(-)	(+)	*Brevundimonas intermedia* (JF915342)	97
Burkholderia						
AMF3734	JQ316403	3	(-)	(+)	*Burkholderia cepacia* (HQ236034)	99
AMF3698	JQ316388	6	(-)	(+)	*Burkholderia sabiae* (AY773185)	98
Varivorax sp.						
AMF3553	JQ316395	6	(-)	(+)	*Variovorax paradoxus* (HQ219937)	99
Pseudomonas						
AMF3567[a]	JQ316303	29	(+)	(+)	*Pseudomonas brenneri* (FN393788)	99

AMF3570[a]	JQ316303	-	(+)	(+)	*Pseudomonas brenneri* (FN393788)	99
AMF3550[a]	JQ316303	-	(+)	(+)	*Pseudomonas brenneri* (FN393787)	99
AMF3569[a]	JQ316303	-	(+)	(+)	*Pseudomonas brenneri* (FN393787)	99
AMF3551	JQ316325	2	(+)	(+)	*Pseudomonas brenneri* (JF970596)	98
AMF3545[b]	JQ316328	23	(-)	(+)	*Pseudomonas chlororaphis* (AY216795)	99
AMF3556[b]	JQ316328	-	(-)	(+)	*Pseudomonas chlororaphis* (AY216795)	99
AMF3571[b]	JQ316330	-	(-)	(+)	*Pseudomonas chlororaphis* (AY216795)	99
AMF3554[b]	JQ316338	-	(-)	(+)	*Pseudomonas chlororaphis* (AY216795)	99
AMF3138[b]	JQ316329	-	(-)	(+)	*Pseudomonas chlororaphis* (JF970596)	99
AMF3540	JQ316307	4	(+)	(-)	*Pseudomonas brenneri* (JF970596)	98
AMF3546	JQ316309	2	(-)	(-)	*Pseudomonas brenneri* (FN393788)	97
AMF3544	JQ316308	7	(+)	(-)	*Pseudomonas brenneri* (AY864636)	97
AMF3578	JQ316324	9	(-)	(+)	*Pseudomonas brenneri* (JF970596)	98
AMF3575	JQ316314	1	(+)	(+)	*Pseudomonas* sp. *DVS6dla* (JF970596)	98
AMF3543	JQ316306	5	(-)	(+)	*Pseudomonas brenneri* (FN393788)	98
AMF3089	JQ316315	3	(-)	(+)	*Pseudomonas brenneri* (JF970596)	98
AMF3577	JQ316321	6	(+)	(+)	*Pseudomonas brenneri* (AB545749)	98
AMF3576	JQ316320	4	(-)	(+)	*Pseudomonas brenneri* (JF970596)	99
AMF3574	JQ316347	4	(+)	(+)	*Pseudomonadaceae* bacterium (JF970596)	97
AMF3541	JQ316312	3	(+)	(+)	*Pseudomonas brenneri* (JF970596)	98
AMF3552	JQ316323	1	(-)	(+)	*Pseudomonas brenneri* (FN393788)	99
AMF3568	JQ316313	7	(+)	(+)	*Pseudomonas brenneri* (JF970596)	98
AMF3132	JQ316334	5	(-)	(+)	*Pseudomonas chlororaphis* (AY216795)	97
AMF3555	JQ316333	1	(-)	(+)	*Pseudomonas chlororaphis* (AY216795)	99
AMF3558	JQ316332	9	(-)	(+)	*Pseudomonas chlororaphis* (AY216795)	98
AMF3559	JQ316339	8	(+)	(+)	*Pseudomonas fluorescens* (JN030498)	98
AMF3560	JQ316336	7	(+)	(-)	*Pseudomonas fluorescens* (JN030498)	97
AMF3572	JQ316337	7	(-)	(-)	*Pseudomonas chlororaphis* (AY216795)	95
AMF2675	JQ316359	9	(-)	(+)	*Pseudomonas* sp. *OS-17B* (EF612350)	99
AMF3660	JQ316363	3	(+)	(+)	*Pseudomonas plecoglossicida* (EU594553.1)	99

Enterobacter

AMF2472	JQ316386	7	(++)	(+)	*Enterobacter* sp. sw39 (FJ179170)	99
Bacillus						
AMF1207	JQ316237	5	(-)	(+)	*Bacillus* sp. *LT3* (FJ946999)	99
AMF3812	JQ316249	3	(-)	(-)	*Bacillus* sp. *13644B* (EU741095)	98
Rhodococcus						
AMF3538	JQ316225	3	(+)	(+)	*Rhodococcus qingshengii* (HQ202829)	98
AMF3536	JQ316221	1	(+)	(+)	*Rhodococcus* sp. *CmLB13* (HM352337)	98
AMF3537	JQ316223	3	(+)	(+)	*Rhodococcus qingshengii* (HQ202829)	97
AMF3539	JQ316226	1	(+)	(+)	*Rhodococcus qingshengii* (HQ202829)	98
Curtobacterium						
AMF3581*	JQ316432	2	(+)	(+)	*Curtobacterium citreum* (FN178369)	96
AMF3579*	JQ316227	7	(+)	(+)	*Curtobacterium citreum* (FN178369)	98
Flavobacterium						
AMF3566	JQ316427	6	(+)	(+)	*Flavobacterium* sp. 30C (EU057850)	97

Isolates from Semisolid medium (incubated under 20% oxygen concentration)

Rhizobium						
AMF3547	JQ316285	6	(-)	(+)	*Rhizobium* sp. PRNB-25 (HQ589028)	99
Brevundimonas						
AMF3276*	JQ316297	4	(-)	(+)	*Brevundimonas* sp. NBD8 (HQ256539)	99
AMF3266*	JQ316298	6	(-)	(+)	*Brevundimonas* sp. NCCP-147 (AB549434)	98
Burkholderia						
AMF3725	JQ316406	2	(-)	(+)	*Burkholderia* sp. CBPB-CHS (AY640617)	99
Xanthmonas sp.						
AMF3320	JQ316393	1	(-)	(+)	*Xanthomonas* sp. (DQ279313)	99

AMF2667	JQ316391	4	(-)	(+)	*Xanthomonas* sp. (DQ279313)	99
Pseudomonas						
AMF2763A[c]	JQ316326	31	(+)	(+)	*Pseudomonas brenneri* (FN393788)	98
AMF4009[c]	JQ316310	-	(+)	(+)	*Pseudomonas brenneri* (FN393788)	98
AMF2753[d]	JQ316322	4	(+)	(+)	*Pseudomonas brenneri* (FN393788)	98
AMF2763B[d]	JQ316305	-	(+)	(+)	*Pseudomonas brenneri* (FN393788)	98
AMF2636[d]	JQ316304	-	(+)	(+)	*Pseudomonas brenneri* (FN393788)	98
AMF2809B[e]	JQ316351	58	(-)	(+)	*Pseudomonas* sp. *OS-17B* (EF612350)	98
AMF3014[e]	-	-	(-)	(+)	*Pseudomonas* sp. *OS-17B* (EF612350)	99
AMF3003[e]	-	-	(-)	(+)	*Pseudomonas* sp. 3-11 (HM057102)	98
AMF3038[e]	JQ316357	-	(-)	(+)	*Pseudomonas* sp. *OS-17B* (EF612350)	99
AMF3322[e]	-	-	(-)	(+)	*Pseudomonas* sp. 3-11 (HM057102)	98
AMF3323[e]	-	-	(-)	(+)	*Pseudomonas* sp. *OS-17B* (EF612350)	99
AMF3147[e]	JQ316356	-	(-)	(+)	*Pseudomonas koreensis* (HM367599)	99
AMF3110[e]	-	-	(-)	(+)	*Pseudomonas* sp. 3-11 (HM057102)	99
AMF3319[e]	JQ316354	-	(-)	(+)	*Pseudomonas koreensis* (HM367598)	98
AMF2809A	JQ316311	8	(-)	(-)	*Thermoleophilum minutum* (HQ223108)	97
AMF3013	JQ316343	4	(-)	(-)	*Pseudomonas* sp. *A-BT-68* (JF901709)	97
AMF2668	JQ316341	5	(++)	(+)	*Pseudomonas* sp. *B-AS-44* (JF901706)	98
AMF2669	JQ316342	2	(++)	(+)	*Pseudomonas* sp. *B-AS-44* (JF901706)	98
AMF3010	JQ316345	4	(+)	(-)	*Pseudomonas* sp. (JF901709)	99
AMF2745	JQ316346	5	(+)	(+)	*Pseudomonas* sp. (GU595349)	99
AMF3005	JQ316353	14	(+)	(+)	*Pseudomonas* sp. (FJ786056)	96
AMF3006	JQ316355	11	(-)	(+)	*Pseudomonas* sp. (EF612350)	98
AMF2689	JQ316360	16	(-)	(-)	*Pseudomonas* sp. (EF612350)	99
AMF3573	JQ316319	11	(-)	(-)	*Thermoleophilum minutum* (HQ223108)	98
AMF3272	JQ316327	7	(-)	(+)	*Pseudomonas chlororaphis* (AY216795)	99
AMF1810	JQ316375	15	(++)	(+)	*Pseudomonas putida* (DQ986385)	96
Enterobacter						
AMF1353	JQ316381	5	(+)	(+)	*Enterobacter* sp. (HQ202542)	98

Rahnella

AMF3011	JQ316380	8	(+)	(-)	*Rahnella aquatilis* (AY253920)	99
AMF2806	JQ316377	9	(+)	(-)	*Rahnella aquatilis* (AY253921)	98
AMF2811	JQ316379	1	(+)	(-)	*Rahnella aquatilis* (AY253920)	97
AMF3007	JQ316378	3	(-)	(-)	*Rahnella aquatilis* (AY253921)	98

Flavobacterium

AMF2626	JQ316424	7	(-)	(+)	*Flavobacterium* sp. (JF772477)	95

* The *nif*H gene amplification was possible with a single PCR.