

CP007640.1:Bacillus_atrophaeus ...CA...T...AC...CA...G...T...
210 220 230 240 250 260 270 280 290 300

s.26 GACCTGAGAGGGTGATCGGCCACACTGGGACTGAGACACGGCCAGACTCCTACGGGAGGCAGGTAGGGAATCTTCCGCAATGGACGAAAGTCTGACG
CP063158.1:Bacillus_cereus
CP072774.1:Bacillus_cereus
CP053972.1:Bacillus_thuringien
CP051858.1:Bacillus_thuringien
MT372153.1:Bacillus_manliponen
MW250250.1:Bacillus_pacificus
MW115619.1:Bacillus_paramycoid
LC178546.1:Bacillus_subtilis
CP050532.1:Bacillus_subtilis
CP026662.1:Bacillus_subtilis
CP049741.1:Bacillus_velezensis
AB592329.1:Bacillus_lichenifor ...C...
MK855401.1:Bacillus_lichenifor
CP045814.1:Bacillus_lichenifor
CP042252.1:Bacillus_lichenifor
LR698983.1:Bacillus_lichenifor
AB680855.1:Bacillus_atrophaeus
CP002207.1:Bacillus_atrophaeus
CP007640.1:Bacillus_atrophaeus
310 320 330 340 350 360 370 380 390 400

s.26 GAGCAACGCCGCTGAGTGATGAAGGCTTTCGCGTCGTAAACTCTGTGTTAGGGAAGAACAAAGTGCAGTGAATAAGCTGGCACCTTGACGTACCT
CP063158.1:Bacillus_cereus
CP072774.1:Bacillus_cereus
CP053972.1:Bacillus_thuringien
CP051858.1:Bacillus_thuringien
MT372153.1:Bacillus_manliponen
MW250250.1:Bacillus_pacificus
MW115619.1:Bacillus_paramycoid ...★...★...★★★...★★★
LC178546.1:Bacillus_subtilis ...T...A...G...A.CGT.C...G.GC..T...
CP050532.1:Bacillus_subtilis ...T...A...G...A.CGT.C...G.GC..T...
CP026662.1:Bacillus_subtilis ...T...A...G...A.CGT.C...G.GC..T...
CP049741.1:Bacillus_velezensis ...T...A...G...A.CGT.CA...G.GC..
AB592329.1:Bacillus_lichenifor ...T...A...G...A.CGT.C...G.GC..T...
MK855401.1:Bacillus_lichenifor ...T...A...G...A.CGT.C...G.GC..T...
CP045814.1:Bacillus_lichenifor ...T...A...G...A.CGT.C...G.GC..T...
CP042252.1:Bacillus_lichenifor ...T...A...G...A.CGT.C...G.GC..T...
LR698983.1:Bacillus_lichenifor ...T...A...G...A.CGT.C...G.GC..T...
AB680855.1:Bacillus_atrophaeus ...T...A...G...A.CGT.CA...G.GC..
CP002207.1:Bacillus_atrophaeus ...T...A...G...A.CGT.CA...G.GC..

CP007640.1: *Bacillus_atrophaeus*T.....A.....G.....CGT.CA.....G.GC.....

410 420 430 440 450 460 470 480 490 500

S.26 AACCAGAAAGCCACGGCTAACTACGTGCCAGCAGCCGGGTAATACGTAGGTGGCAAGCGTTATTTTGGGCGTAAAGCGCGCGCAGGTTGGTT

[illegible]

510 520 530 540 550 560 570 580 590 600

s.26 TCTTAAGTCTGATGTGAAAGCCCACGGCTCAACCGTGGAGGGTCATTGGAAACTGGGAGACTTGAGTGCAGAAGAGGAAGTGGAAATTCATGTGTAGCG

[illegible]

.....C.....G.....GA.....G.....C.....

CP007640.1:Bacillus_atrophaeusC.....G.....GA.....G.....C.....
610 620 630 640 650 660 670 680 690 700
.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|
s.26 GTGAATGCGTAGAGATTTGGAGGAACACCACTGGCGAAGGCGACTTTCTGGTCTGTAACTGACCTGAGGCGCGAAGCGTGGGGAGCTAACAGGATTA
CP063158.1:Bacillus_cereus
CP072774.1:Bacillus_cereus
CP053972.1:Bacillus_thuringien
CP051858.1:Bacillus_thuringien
MT372153.1:Bacillus_manliponen
MW250250.1:Bacillus_pacificus
MW115619.1:Bacillus_paramycoid★.....★.....★.....★.....
LC178546.1:Bacillus_subtilisG.....C.....G.....A.....G.....
CP050532.1:Bacillus_subtilisG.....C.....G.....A.....G.....
CP026662.1:Bacillus_subtilisG.....C.....G.....A.....G.....
CP049741.1:Bacillus_velezensisG.....C.....G.....A.....G.....
AB592329.1:Bacillus_licheniforA.....G.....C.....G.....G.....
MK855401.1:Bacillus_licheniforG.....C.....G.....G.....G.....
CP045814.1:Bacillus_licheniforG.....C.....G.....G.....G.....
CP042252.1:Bacillus_licheniforG.....C.....G.....G.....G.....
LR698983.1:Bacillus_licheniforG.....C.....G.....G.....G.....
AB680855.1:Bacillus_atrophaeusG.....C.....G.....A.....G.....
CP002207.1:Bacillus_atrophaeusG.....C.....G.....A.....G.....
CP007640.1:Bacillus_atrophaeusG.....C.....G.....A.....G.....
710 720 730 740 750 760 770 780 790 800
.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

s.26 GATACCCCTGGTAGTCCACGCCGTAACGATGAGTGCTAAGTGTAGAGGGTTTCGCCCTTTAGTGCTGAGTTAACGCATTAAAGCACTCCGCCTGGGGA
CP063158.1:Bacillus_cereus
CP072774.1:Bacillus_cereus
CP053972.1:Bacillus_thuringien
CP051858.1:Bacillus_thuringien
MT372153.1:Bacillus_manliponen
MW250250.1:Bacillus_pacificus
MW115619.1:Bacillus_paramycoid★.....★.....
LC178546.1:Bacillus_subtilisG.....C.....C.....C.....
CP050532.1:Bacillus_subtilisG.....C.....C.....C.....
CP026662.1:Bacillus_subtilisG.....C.....C.....C.....
CP049741.1:Bacillus_velezensisG.....C.....C.....C.....
AB592329.1:Bacillus_licheniforC.....CA.....
MK855401.1:Bacillus_licheniforC.....CA.....
CP045814.1:Bacillus_licheniforC.....CA.....
CP042252.1:Bacillus_licheniforC.....CA.....
LR698983.1:Bacillus_licheniforC.....CA.....
AB680855.1:Bacillus_atrophaeusG.....C.....C.....C.....
CP002207.1:Bacillus_atrophaeusG.....C.....C.....C.....

CP007640.1:Bacillus_atrophaeusG.....C.....C..C.....

810 820 830 840 850 860 870 880 890 900

.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

s.26 GTACGGCTCGCAACGCTGAACCTCAAGGAATTGACGGGGGCCGCCACAGCGGTGGAGCATGTGGTTTAATTCGAAGCAACGCCAAGAACCTTACCAGGT

CP063158.1:Bacillus_cereus|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP072774.1:Bacillus_cereus|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP053972.1:Bacillus_thuringien|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP051858.1:Bacillus_thuringien|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

MT372153.1:Bacillus_manliponen|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

MW250250.1:Bacillus_pacificus|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

MW115619.1:Bacillus_paramycoid★.....★.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

LC178546.1:Bacillus_subtilisT.....A.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP050532.1:Bacillus_subtilisT.....A.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP026662.1:Bacillus_subtilisT.....A.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP049741.1:Bacillus_velezensisT.....A.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

AB592329.1:Bacillus_licheniforT.....A.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

MK855401.1:Bacillus_licheniforT.....A.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP045814.1:Bacillus_licheniforT.....A.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP042252.1:Bacillus_licheniforT.....A.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

LR698983.1:Bacillus_licheniforT.....A.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

AB680855.1:Bacillus_atrophaeusT.....A.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP002207.1:Bacillus_atrophaeusT.....A.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP007640.1:Bacillus_atrophaeusT.....A.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

910 920 930 940 950 960 970 980 990 1000

.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

s.26 CTTGACATCCTCTGAATAACCTAGAGATAGGGCTTCCTTCGGGSCAGAGTGACAGGTGGTGCATGGTTGCTCAGCTCGTGTCTGAGATGTTGGG

CP063158.1:Bacillus_cereus|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP072774.1:Bacillus_cereus|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP053972.1:Bacillus_thuringien|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP051858.1:Bacillus_thuringien|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

MT372153.1:Bacillus_manliponen|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

MW250250.1:Bacillus_pacificus|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

MW115619.1:Bacillus_paramycoid★.....★.....★.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

LC178546.1:Bacillus_subtilisC..T.....A.G..C.....G.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP050532.1:Bacillus_subtilisC..T.....A.G..C.....G.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP026662.1:Bacillus_subtilisC..T.....A.G..C.....G.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP049741.1:Bacillus_velezensisC..T.....A.G..C.....G.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

AB592329.1:Bacillus_licheniforC.....C.....G.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

MK855401.1:Bacillus_licheniforC.....C.....G.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP045814.1:Bacillus_licheniforC.....C.....G.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP042252.1:Bacillus_licheniforC.....C.....G.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

LR698983.1:Bacillus_licheniforC.....C.....G.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

AB680855.1:Bacillus_atrophaeusC.C.....C.....G.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP002207.1:Bacillus_atrophaeusC.C.....C.....G.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP007640.1:Bacillus_atrophaeusC.C.....C.....G.....

1010 1020 1030 1040 1050 1060 1070 1080 1090 1100

.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

s.26 TTAAGTCCCGCAACGAGCGCAACCCCTTGATCTTAGTTGCCAATCATTAGTTGGGCACCTCTAAGGTGACTGCCGGTGACAAACCGGAGGAAGGTGGGGATG

CP063158.1:Bacillus_cereus|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP072774.1:Bacillus_cereus|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP053972.1:Bacillus_thuringien|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP051858.1:Bacillus_thuringien|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

MT372153.1:Bacillus_manliponen|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

MW250250.1:Bacillus_pacificus|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

MW115619.1:Bacillus_paramycoid|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

LC178546.1:Bacillus_subtilis|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP050532.1:Bacillus_subtilis|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP026662.1:Bacillus_subtilis|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP049741.1:Bacillus_velezensis|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

AB592329.1:Bacillus_lichenifor|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

MK855401.1:Bacillus_lichenifor|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP045814.1:Bacillus_lichenifor|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP042252.1:Bacillus_lichenifor|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

LR698983.1:Bacillus_lichenifor|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

AB680855.1:Bacillus_atrophaeus|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP002207.1:Bacillus_atrophaeus|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP007640.1:Bacillus_atrophaeus|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

1110 1120 1130 1140 1150 1160 1170 1180 1190 1200

.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

s.26 ACGTCAAATCATCATGCCCTTATGACCTGGGCTACACACGTGCTACAATGGACGGTACAAAGAGCGAGACCGCGAGGTGGAGCTAATCTCAATAAA

CP063158.1:Bacillus_cereus|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP072774.1:Bacillus_cereus|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP053972.1:Bacillus_thuringien|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP051858.1:Bacillus_thuringien|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

MT372153.1:Bacillus_manliponen|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

MW250250.1:Bacillus_pacificus|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

MW115619.1:Bacillus_paramycoid|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

LC178546.1:Bacillus_subtilis|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP050532.1:Bacillus_subtilis|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP026662.1:Bacillus_subtilis|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP049741.1:Bacillus_velezensis|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

AB592329.1:Bacillus_lichenifor|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

MK855401.1:Bacillus_lichenifor|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP045814.1:Bacillus_lichenifor|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP042252.1:Bacillus_lichenifor|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

LR698983.1:Bacillus_lichenifor|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

AB680855.1:Bacillus_atrophaeus|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP002207.1:Bacillus_atrophaeus|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|

CP007640.1:Bacillus_atrophaeusA.A.....G.A..G.....TA...C...C...T

.....|.....

S.26CGGTTCTCA

CP063158.1:Bacillus_cereus|.....

CP072774.1:Bacillus_cereus|.....

CP053972.1:Bacillus_thuringien|.....

CP051858.1:Bacillus_thuringien|.....

MT372153.1:Bacillus_manliponen|.....

MW250250.1:Bacillus_pacificus★.....

MW115619.1:Bacillus_paramycoid|.....

LC178546.1:Bacillus_subtilisT.....

CP050532.1:Bacillus_subtilisT.....

CP026662.1:Bacillus_subtilisT.....

CP049741.1:Bacillus_velezensisT.....

AB592329.1:Bacillus_licheniforT.....

MK855401.1:Bacillus_licheniforT.....

CP045814.1:Bacillus_licheniforT.....

CP042252.1:Bacillus_licheniforT.....

LR698983.1:Bacillus_licheniforT.....

AB680855.1:Bacillus_atrophaeusT.....

CP002207.1:Bacillus_atrophaeusT.....

CP007640.1:Bacillus_atrophaeusT.....

Figure S3. Multiple sequence analysis of 16S rRNA gene, strain S26 against sequences retrieved from GenBank database. Stars correspond to the 58 major substitution position differentiated between *B. subtilis* and *B. cereus* groups. Strain S26 is identical to *B. cereus* groups sequences.