Data in Brief

Draft genome sequence of *Paenibacillus dauci* sp. nov., a carrot-associated endophytic actinobacteria

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ABSTRACT

*Paenibacillus dauci* sp. nov., a new kind of endophytic actinobacteria, is separated from the inner tissues of carrot sample, which forms intimated associations with carrot acting as biological control agents. Here we report a 5.37-Mb assembly of its genome sequence and other useful information, including the coding sequences (CDSs) responsible for biological processes such as antibiotic metabolic process, antimicrobial metabolism, anaerobic regulation and the biosynthesis of vitamin B and polysaccharide. This novel strain can be a potential source of novel lead products for exploitation in the field of pharmaceutical, agriculture and industry.

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Specifications

Organism/cell/tissue
Strain
Sequence or array type
Data format
Experimental factors
Experimental features
Consent
Sample source location
Paenibacillus dauci sp. nov.
H9T
Illumina Hiseq 2000
Raw and processed
DNA extracted from a wild-type strain, no treatment
Draft genome sequencing of *Paenibacillus dauci*, assembly and annotation
N/A
A carrot sample from Xinjiang Uyghur Autonomous Region (China)

1. Direct link to deposited data

Deposited data can be found here: http://www.ncbi.nlm.nih.gov/nucleotide/LAQQQ00000000.

Endophytic actinobacteria have a capacity to produce numerous secondary metabolites with a mass of biological activity, such as antibiotics, antitumor and anti-infection agents, plant growth promoters and enzymes, and may promote plant establishment under adverse environmental stresses [1]. Introducing such bacterial strains to plant tissues can result in increased plant growth, usually due to suppression of plant pathogenic microorganisms [2]. It seems to be pivotal for obtaining a healthy microfloral balance within plants, soil appearing to be an important and moderating source of bacterial endophytes [3]. Recently, our group has isolated from a carrot sample from Xinjiang Uyghur Autonomous Region (China) a novel species of *Paenibacillus dauci* sp. nov. (= CGMCC 100608T = JCM30283T), which can produce potential antimicrobial substances playing the part of endophytic actinobacteria [4]. Comparisons with 16S rRNA gene sequences as shown in Fig. 1 revealed that the novel strain had the highest similarity to *Paenibacillus hunanensis* Fel05T (97%). However, the phylogenetic distances from recognized species (Fig. 2) indicated that *P. dauci* sp. nov. is not affiliated to any of these recognized species. We can therefore conclude that this strain represents a novel species of the genus *Paenibacillus*. What’s more, high nitrogenase activity, strong antagonism against plant pathogenic fungi, extensive carbon source utilization, and stress resistance were also uncovered. In consequence, investigation of the genetic information and characteristics of *P. dauci* is desired to further investigate its mechanism of metabolic regulation. Knowledge of the genome sequence and bioinformatics will be of great help in this regard.

Here we present the draft genome sequence of strain *P. dauci* H9T obtained using the Illumina Hiseq 2000 system, which was performed by Shenzhen BGI, Tech. Co., Ltd. The reads were assembled with SOAPdenovo [5,6], the version is 2.04, and the sequence was annotated using the RAST annotation server (Fig. 3) [7]. A library containing 500-bp inserts was constructed. Sequencing
was performed based on the paired-end strategy of 473 reads to produce 790 Mb of filtered sequences, representing a 126-fold coverage of the genome. The sequence of \textit{Paenibacillus algorifonticola} XJ259 was 5,449,237 bases with a G + C content of 46.5%, which was assembled into 26 contigs and 19 scaffolds. It contains 4766 open reading frames (ORFs), 77 tRNA genes, and 1 rRNA gene (Table 1) identified by Glimmer 3.02 [8], Genemark [9], tRNAscan-SE [10], and RNAmmer [11].

According to the genomic analysis of strain \textit{P. dauci}, we analyzed 36 ORFs related to antibiotic metabolic process. 10 ORFs related to the antimicrobial peptide transport system. 4 ORFs about plant growth promoting (PGP) were found. Additionally, 12 ORFs were also discovered related to trehalose, which makes us believe that it could be related to the shock-resistant mechanism since the trehalose is regarded as a molecular chaperone. What’s more, the biosynthesis of vitamin B was annotated in the strain \textit{P. dauci} as there were 19 ORFs related to vitamin B12 production and vitamin B6 metabolism. Further studies will be performed to confirm their functions, and a complete genome sequence will be included in the future to reveal the unique molecular characteristics of strain \textit{P. dauci}.

![Multiple sequence alignment of Paenibacillus](image-url)
Fig. 1 (continued).
| Species       | DNA Sequence                                      | Length |
|--------------|--------------------------------------------------|--------|
| taichungen   | GCACTCTACGAGGACGAGCAGACATTGGCGATGCAAAGGGAGGAGA | 399    |
| dauci        | GCACTCTACGAGGACGAGCAGACATTGGCGATGCAAAGGGAGGAGA | 328    |
| polymyxa     | GCACTCTACGAGGACGAGCAGACATTGGCGATGCAAAGGGAGGAGA | 348    |
| wulumuqian   | GCACTCTACGAGGACGAGCAGACATTGGCGATGCAAAGGGAGGAGA | 337    |
| FeL05        | GCACTCTACGAGGACGAGCAGACATTGGCGATGCAAAGGGAGGAGA | 337    |
| FeL11        | GCACTCTACGAGGACGAGCAGACATTGGCGATGCAAAGGGAGGAGA | 337    |
| IHB          | GCACTCTACGAGGACGAGCAGACATTGGCGATGCAAAGGGAGGAGA | 337    |
| Ch380        | GCACTCTACGAGGACGAGCAGACATTGGCGATGCAAAGGGAGGAGA | 337    |
| SG3          | GCACTCTACGAGGACGAGCAGACATTGGCGATGCAAAGGGAGGAGA | 337    |
| B17a         | GCACTCTACGAGGACGAGCAGACATTGGCGATGCAAAGGGAGGAGA | 337    |
| pabuli       | GCACTCTACGAGGACGAGCAGACATTGGCGATGCAAAGGGAGGAGA | 337    |
| HA39         | GCACTCTACGAGGACGAGCAGACATTGGCGATGCAAAGGGAGGAGA | 337    |
| HA62         | GCACTCTACGAGGACGAGCAGACATTGGCGATGCAAAGGGAGGAGA | 337    |
| F33          | GCACTCTACGAGGACGAGCAGACATTGGCGATGCAAAGGGAGGAGA | 337    |
| CH-3         | GCACTCTACGAGGACGAGCAGACATTGGCGATGCAAAGGGAGGAGA | 337    |
| hunanensis   | GCACTCTACGAGGACGAGCAGACATTGGCGATGCAAAGGGAGGAGA | 337    |
| BD3526       | GCACTCTACGAGGACGAGCAGACATTGGCGATGCAAAGGGAGGAGA | 337    |
| YQ1          | GCACTCTACGAGGACGAGCAGACATTGGCGATGCAAAGGGAGGAGA | 337    |

**Fig. 1 (continued).**
Fig. 1 (continued).
| Species     | Sequence                 | Length |
|------------|--------------------------|--------|
| taichungen | GCGCCTTTTTTGTTGTTTAA     | 649    |
| dauci      | GCGCCTTTTTTGTTGTTTAA     | 638    |
| polymyxia  | GCGCCTTTTTTGTTGTTTAA     | 638    |
| wulumuqian | GCGCCTTTTTTGTTGTTTAA     | 638    |
| FeL05      | GCGCCTTTTTTGTTGTTTAA     | 637    |
| FeL11      | GCGCCTTTTTTGTTGTTTAA     | 637    |
| IHB        | GCGCCTTTTTTGTTGTTTAA     | 637    |
| Ch380      | GCGCCTTTTTTGTTGTTTAA     | 637    |
| SG3        | GCGCCTTTTTTGTTGTTTAA     | 637    |
| B17a       | GCGCCTTTTTTGTTGTTTAA     | 637    |
| pabuli     | GCGCCTTTTTTGTTGTTTAA     | 629    |
| HA39       | GCGCCTTTTTTGTTGTTTAA     | 625    |
| HA62       | GCGCCTTTTTTGTTGTTTAA     | 623    |
| F33        | GCGCCTTTTTTGTTGTTTAA     | 617    |
| CH-3       | GCGCCTTTTTTGTTGTTTAA     | 617    |
| hunanensis | GCGCCTTTTTTGTTGTTTAA     | 613    |
| BD3526     | GCGCCTTTTTTGTTGTTTAA     | 508    |
| YQ1        | GCGCCTTTTTTGTTGTTTAA     | 594    |
| taichungen | TCGGACATGGTTGGCGAGTTGAAA | 699    |
| dauci      | TCGGACATGGTTGGCGAGTTGAAA | 688    |
| polymyxia  | TCGGACATGGTTGGCGAGTTGAAA | 688    |
| wulumuqian | TCGGACATGGTTGGCGAGTTGAAA | 688    |
| FeL05      | TCGGACATGGTTGGCGAGTTGAAA | 687    |
| FeL11      | TCGGACATGGTTGGCGAGTTGAAA | 687    |
| IHB        | TCGGACATGGTTGGCGAGTTGAAA | 687    |
| Ch380      | TCGGACATGGTTGGCGAGTTGAAA | 687    |
| SG3        | TCGGACATGGTTGGCGAGTTGAAA | 675    |
| B17a       | TCGGACATGGTTGGCGAGTTGAAA | 687    |
| pabuli     | TCGGACATGGTTGGCGAGTTGAAA | 679    |
| HA39       | TCGGACATGGTTGGCGAGTTGAAA | 675    |
| HA62       | TCGGACATGGTTGGCGAGTTGAAA | 673    |
| F33        | TCGGACATGGTTGGCGAGTTGAAA | 667    |
| CH-3       | TCGGACATGGTTGGCGAGTTGAAA | 667    |
| hunanensis | TCGGACATGGTTGGCGAGTTGAAA | 663    |
| BD3526     | TCGGACATGGTTGGCGAGTTGAAA | 630    |
| YQ1        | TCGGACATGGTTGGCGAGTTGAAA | 644    |
| taichungen | TACCGGTGAAACCCCTAGTC      | 748    |
| dauci      | TACCGGTGAAACCCCTAGTC      | 737    |
| polymyxia  | TACCGGTGAAACCCCTAGTC      | 739    |
| wulumuqian | TACCGGTGAAACCCCTAGTC      | 737    |
| FeL05      | TACCGGTGAAACCCCTAGTC      | 736    |
| FeL11      | TACCGGTGAAACCCCTAGTC      | 736    |
| IHB        | TACCGGTGAAACCCCTAGTC      | 736    |
| Ch380      | TACCGGTGAAACCCCTAGTC      | 736    |
| SG3        | TACCGGTGAAACCCCTAGTC      | 724    |
| B17a       | TACCGGTGAAACCCCTAGTC      | 736    |
| pabuli     | TACCGGTGAAACCCCTAGTC      | 728    |
| HA39       | TACCGGTGAAACCCCTAGTC      | 724    |
| HA62       | TACCGGTGAAACCCCTAGTC      | 722    |
| F33        | TACCGGTGAAACCCCTAGTC      | 716    |
| CH-3       | TACCGGTGAAACCCCTAGTC      | 716    |
| hunanensis | TACCGGTGAAACCCCTAGTC      | 712    |
| BD3526     | TACCGGTGAAACCCCTAGTC      | 687    |
| YQ1        | TACCGGTGAAACCCCTAGTC      | 693    |

**Fig. 1** (continued).
taichungen: CTCTTGGGCTTAACTGAGGCGCAAGACGTCGTTAAGGGGACACAC: 798
dauci: CTCTTGGGCTTAACTGAGGCGCAAGACGTCGTTAAGGGGACACAC: 797
polymyxa: CTCTTGGGCTTAACTGAGGCGCAAGACGTCGTTAAGGGGACACAC: 799
wulsumugian: CTCTTGGGCTTAACTGAGGCGCAAGACGTCGTTAAGGGGACACAC: 787
FeL05: CTCTTGGGCTTAACTGAGGCGCAAGACGTCGTTAAGGGGACACAC: 786
FeL11: CTCTTGGGCTTAACTGAGGCGCAAGACGTCGTTAAGGGGACACAC: 786
IHB: CTCTTGGGCTTAACTGAGGCGCAAGACGTCGTTAAGGGGACACAC: 787
Ch380: CTCTTGGGCTTAACTGAGGCGCAAGACGTCGTTAAGGGGACACAC: 786
SG3: CTCTTGGGCTTAACTGAGGCGCAAGACGTCGTTAAGGGGACACAC: 774
B17a: CTCTTGGGCTTAACTGAGGCGCAAGACGTCGTTAAGGGGACACAC: 786
pabuli: CTCTTGGGCTTAACTGAGGCGCAAGACGTCGTTAAGGGGACACAC: 778
HA39: CTCTTGGGCTTAACTGAGGCGCAAGACGTCGTTAAGGGGACACAC: 774
HA62: CTCTTGGGCTTAACTGAGGCGCAAGACGTCGTTAAGGGGACACAC: 772
F33: CTCTTGGGCTTAACTGAGGCGCAAGACGTCGTTAAGGGGACACAC: 766
CH-3: CTCTTGGGCTTAACTGAGGCGCAAGACGTCGTTAAGGGGACACAC: 766
hunanensis: CTCTTGGGCTTAACTGAGGCGCAAGACGTCGTTAAGGGGACACAC: 762
BD3526: CTCTTGGGCTTAACTGAGGCGCAAGACGTCGTTAAGGGGACACAC: 737
YQ1: CTCTTGGGCTTAACTGAGGCGCAAGACGTCGTTAAGGGGACACAC: 743

Fig. 1 (continued).
taichungen: TGGGG AGTACGCTCAG AGAAGTCAAAACGAGAAACGGGAGCC : 946
dauci: TGGGG AGTACGCTCAG AGAAGTCAAAACGAGAAACGGGAGCC : 935
dolichos: TGGGG AGTACGCTCAG AGAAGTCAAAACGAGAAACGGGAGCC : 939
polymyxa: TGGGG AGTACGCTCAG AGAAGTCAAAACGAGAAACGGGAGCC : 935
wulumuqile: TGGGG AGTACGCTCAG AGAAGTCAAAACGAGAAACGGGAGCC : 934
FeL05: TGGGG AGTACGCTCAG AGAAGTCAAAACGAGAAACGGGAGCC : 934
FeL11: TGGGG AGTACGCTCAG AGAAGTCAAAACGAGAAACGGGAGCC : 934
IHB: TGGGG AGTACGCTCAG AGAAGTCAAAACGAGAAACGGGAGCC : 935
Ch380: TGGGG AGTACGCTCAG AGAAGTCAAAACGAGAAACGGGAGCC : 934
SG3: TGGGG AGTACGCTCAG AGAAGTCAAAACGAGAAACGGGAGCC : 922
B17a: TGGGG AGTACGCTCAG AGAAGTCAAAACGAGAAACGGGAGCC : 934
pabuli: TGGGG AGTACGCTCAG AGAAGTCAAAACGAGAAACGGGAGCC : 926
HA39: TGGGG AGTACGCTCAG AGAAGTCAAAACGAGAAACGGGAGCC : 922
HA62: TGGGG AGTACGCTCAG AGAAGTCAAAACGAGAAACGGGAGCC : 920
F33: TGGGG AGTACGCTCAG AGAAGTCAAAACGAGAAACGGGAGCC : 914
CH-3: TGGGG AGTACGCTCAG AGAAGTCAAAACGAGAAACGGGAGCC : 914
hunanensis: TGGGG AGTACGCTCAG AGAAGTCAAAACGAGAAACGGGAGCC : 910
BD3526: TGGGG AGTACGCTCAG AGAAGTCAAAACGAGAAACGGGAGCC : 885
YQ1: TGGGG AGTACGCTCAG AGAAGTCAAAACGAGAAACGGGAGCC : 891

Fig. 1 (continued).
| taichungen  | :GGGACGAGAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1096 |
| dauci      | :GGGACGAGAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1085 |
| polymyxna  | :GGGACGAGAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1089 |
| wulumugien  | :GGGACGAGAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1085 |
| Fe105      | :GGGACGAGAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1084 |
| Fe111      | :GGGACGAGAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1084 |
| IHB        | :GGGACGAGAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1084 |
| Ch380      | :GGGACGAGAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1084 |
| SG3        | :GGGACGAGAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1072 |
| B17a       | :GGGACGAGAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1076 |
| pabuli     | :GGGACGAGAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1079 |
| B139       | :GGGACGAGAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1064 |
| CH-3       | :GGGACGAGAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1064 |
| hunanensis | :GGGACGAGAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1060 |
| BD3526     | :GGGACGAGAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1035 |
| YQ1        | :GGGACGAGAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1041 |

| taichungen  | :ATTTGGTTAATACGGCCACACAGCCGACACCTTGTATGTTATCCCA  | :1146 |
| dauci      | :ATTTGGTTAATACGGCCACACAGCCGACACCTTGTATGTTATCCCA  | :1135 |
| polymyxna  | :ATTTGGTTAATACGGCCACACAGCCGACACCTTGTATGTTATCCCA  | :1139 |
| wulumugien  | :ATTTGGTTAATACGGCCACACAGCCGACACCTTGTATGTTATCCCA  | :1135 |
| Fe105      | :ATTTGGTTAATACGGCCACACAGCCGACACCTTGTATGTTATCCCA  | :1134 |
| Fe111      | :ATTTGGTTAATACGGCCACACAGCCGACACCTTGTATGTTATCCCA  | :1134 |
| IHB        | :ATTTGGTTAATACGGCCACACAGCCGACACCTTGTATGTTATCCCA  | :1134 |
| Ch380      | :ATTTGGTTAATACGGCCACACAGCCGACACCTTGTATGTTATCCCA  | :1134 |
| SG3        | :ATTTGGTTAATACGGCCACACAGCCGACACCTTGTATGTTATCCCA  | :1122 |
| B17a       | :ATTTGGTTAATACGGCCACACAGCCGACACCTTGTATGTTATCCCA  | :1134 |
| pabuli     | :ATTTGGTTAATACGGCCACACAGCCGACACCTTGTATGTTATCCCA  | :1126 |
| B139       | :ATTTGGTTAATACGGCCACACAGCCGACACCTTGTATGTTATCCCA  | :1122 |
| CH-3       | :ATTTGGTTAATACGGCCACACAGCCGACACCTTGTATGTTATCCCA  | :1114 |
| hunanensis | :ATTTGGTTAATACGGCCACACAGCCGACACCTTGTATGTTATCCCA  | :1110 |
| BD3526     | :ATTTGGTTAATACGGCCACACAGCCGACACCTTGTATGTTATCCCA  | :1095 |
| YQ1        | :ATTTGGTTAATACGGCCACACAGCCGACACCTTGTATGTTATCCCA  | :1091 |

| taichungen  | :CAACTGGCCCTCTCAGGAGAGACCAAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1195 |
| dauci      | :CAACTGGCCCTCTCAGGAGAGACCAAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1185 |
| polymyxna  | :CAACTGGCCCTCTCAGGAGAGACCAAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1189 |
| wulumugien  | :CAACTGGCCCTCTCAGGAGAGACCAAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1185 |
| Fe105      | :CAACTGGCCCTCTCAGGAGAGACCAAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1184 |
| Fe111      | :CAACTGGCCCTCTCAGGAGAGACCAAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1184 |
| IHB        | :CAACTGGCCCTCTCAGGAGAGACCAAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1184 |
| Ch380      | :CAACTGGCCCTCTCAGGAGAGACCAAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1184 |
| SG3        | :CAACTGGCCCTCTCAGGAGAGACCAAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1171 |
| B17a       | :CAACTGGCCCTCTCAGGAGAGACCAAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1175 |
| pabuli     | :CAACTGGCCCTCTCAGGAGAGACCAAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1171 |
| B139       | :CAACTGGCCCTCTCAGGAGAGACCAAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1171 |
| CH-3       | :CAACTGGCCCTCTCAGGAGAGACCAAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1171 |
| hunanensis | :CAACTGGCCCTCTCAGGAGAGACCAAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1164 |
| BD3526     | :CAACTGGCCCTCTCAGGAGAGACCAAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1135 |
| YQ1        | :CAACTGGCCCTCTCAGGAGAGACCAAGCAGCTGCTGTTCTGTCTCGTCGCTGTGGAG  | :1141 |

Fig. 1 (continued).
| Name         | Sequence                                                                 | Length |
|--------------|---------------------------------------------------------------------------|--------|
| taichungen   | 5TTGGGATGCTAGCAATCGGCAACTGCCTGAACATGTCCTGTGCTACGACATCC                | 1245   |
| dauci        | 5TTGGGATGCTAGCAATCGGCAACTGCCTGAACATGTCCTGTGCTACGACATCC                | 1235   |
| polymyxa     | 5TTGGGATGCTAGCAATCGGCAACTGCCTGAACATGTCCTGTGCTACGACATCC                | 1239   |
| wulumuqien   | 5TTGGGATGCTAGCAATCGGCAACTGCCTGAACATGTCCTGTGCTACGACATCC                | 1235   |
| Fel05        | 5TTGGGATGCTAGCAATCGGCAACTGCCTGAACATGTCCTGTGCTACGACATCC                | 1234   |
| Fel11        | 5TTGGGATGCTAGCAATCGGCAACTGCCTGAACATGTCCTGTGCTACGACATCC                | 1234   |
| IHB          | 5TTGGGATGCTAGCAATCGGCAACTGCCTGAACATGTCCTGTGCTACGACATCC                | 1234   |
| Ch380        | 5TTGGGATGCTAGCAATCGGCAACTGCCTGAACATGTCCTGTGCTACGACATCC                | 1234   |
| SG3          | 5TTGGGATGCTAGCAATCGGCAACTGCCTGAACATGTCCTGTGCTACGACATCC                | 1233   |
| B17a         | 5TTGGGATGCTAGCAATCGGCAACTGCCTGAACATGTCCTGTGCTACGACATCC                | 1221   |
| pabuli       | 5TTGGGATGCTAGCAATCGGCAACTGCCTGAACATGTCCTGTGCTACGACATCC                | 1225   |
| HA39         | 5TTGGGATGCTAGCAATCGGCAACTGCCTGAACATGTCCTGTGCTACGACATCC                | 1221   |
| HA62         | 5TTGGGATGCTAGCAATCGGCAACTGCCTGAACATGTCCTGTGCTACGACATCC                | 1219   |
| F33          | 5TTGGGATGCTAGCAATCGGCAACTGCCTGAACATGTCCTGTGCTACGACATCC                | 1213   |
| CH-3         | 5TTGGGATGCTAGCAATCGGCAACTGCCTGAACATGTCCTGTGCTACGACATCC                | 1214   |
| hunanensis   | 5TTGGGATGCTAGCAATCGGCAACTGCCTGAACATGTCCTGTGCTACGACATCC                | 1210   |
| BL3526       | 5TTGGGATGCTAGCAATCGGCAACTGCCTGAACATGTCCTGTGCTACGACATCC                | 1185   |
| YQ1          | 5TTGGGATGCTAGCAATCGGCAACTGCCTGAACATGTCCTGTGCTACGACATCC                | 1191   |

| Name         | Sequence                                                                 | Length |
|--------------|---------------------------------------------------------------------------|--------|
| taichungen   | CTACTACAATGGCCTCAGCTAACGACGTAGTTCAATGGACGACATCC                          | 1295   |
| dauci        | CTACTACAATGGCCTCAGCTAACGACGTAGTTCAATGGACGACATCC                          | 1285   |
| polymyxa     | CTACTACAATGGCCTCAGCTAACGACGTAGTTCAATGGACGACATCC                          | 1289   |
| wulumuqien   | CTACTACAATGGCCTCAGCTAACGACGTAGTTCAATGGACGACATCC                          | 1285   |
| Fel05        | CTACTACAATGGCCTCAGCTAACGACGTAGTTCAATGGACGACATCC                          | 1284   |
| Fel11        | CTACTACAATGGCCTCAGCTAACGACGTAGTTCAATGGACGACATCC                          | 1284   |
| IHB          | CTACTACAATGGCCTCAGCTAACGACGTAGTTCAATGGACGACATCC                          | 1284   |
| Ch380        | CTACTACAATGGCCTCAGCTAACGACGTAGTTCAATGGACGACATCC                          | 1283   |
| SG3          | CTACTACAATGGCCTCAGCTAACGACGTAGTTCAATGGACGACATCC                          | 1281   |
| B17a         | CTACTACAATGGCCTCAGCTAACGACGTAGTTCAATGGACGACATCC                          | 1283   |
| pabuli       | CTACTACAATGGCCTCAGCTAACGACGTAGTTCAATGGACGACATCC                          | 1275   |
| HA39         | CTACTACAATGGCCTCAGCTAACGACGTAGTTCAATGGACGACATCC                          | 1271   |
| HA62         | CTACTACAATGGCCTCAGCTAACGACGTAGTTCAATGGACGACATCC                          | 1269   |
| F33          | CTACTACAATGGCCTCAGCTAACGACGTAGTTCAATGGACGACATCC                          | 1263   |
| CH-3         | CTACTACAATGGCCTCAGCTAACGACGTAGTTCAATGGACGACATCC                          | 1264   |
| hunanensis   | CTACTACAATGGCCTCAGCTAACGACGTAGTTCAATGGACGACATCC                          | 1260   |
| BL3526       | CTACTACAATGGCCTCAGCTAACGACGTAGTTCAATGGACGACATCC                          | 1235   |
| YQ1          | CTACTACAATGGCCTCAGCTAACGACGTAGTTCAATGGACGACATCC                          | 1241   |

Fig. 1 (continued)
taichungen : TGAAGTCGAAATGGCAGTGACAGCAGCGACGGAATTGCGCTGGCGCGGCTGGCCTAG : 1394
dauci : TGAAGTCGAAATGGCAGTGACAGCAGCGACGGAATTGCGCTGGCGCGGCTGGCCTAG : 1384
polyzaxa : TGAAGTCGAAATGGCAGTGACAGCAGCGACGGAATTGCGCTGGCGCGGCTGGCCTAG : 1388
wulumeqian : TGAAGTCGAAATGGCAGTGACAGCAGCGACGGAATTGCGCTGGCGCGGCTGGCCTAG : 1384
Fei05 : TGAAGTCGAAATGGCAGTGACAGCAGCGACGGAATTGCGCTGGCGCGGCTGGCCTAG : 1383
Fei11 : TGAAGTCGAAATGGCAGTGACAGCAGCGACGGAATTGCGCTGGCGCGGCTGGCCTAG : 1383
IHB : TGAAGTCGAAATGGCAGTGACAGCAGCGACGGAATTGCGCTGGCGCGGCTGGCCTAG : 1383
Ch380 : TGAAGTCGAAATGGCAGTGACAGCAGCGACGGAATTGCGCTGGCGCGGCTGGCCTAG : 1382
SG3 : TGAAGTCGAAATGGCAGTGACAGCAGCGACGGAATTGCGCTGGCGCGGCTGGCCTAG : 1370
B17a : TGAAGTCGAAATGGCAGTGACAGCAGCGACGGAATTGCGCTGGCGCGGCTGGCCTAG : 1383
pabuli : TGAAGTCGAAATGGCAGTGACAGCAGCGACGGAATTGCGCTGGCGCGGCTGGCCTAG : 1375
HA39 : TGAAGTCGAAATGGCAGTGACAGCAGCGACGGAATTGCGCTGGCGCGGCTGGCCTAG : 1371
HA62 : TGAAGTCGAAATGGCAGTGACAGCAGCGACGGAATTGCGCTGGCGCGGCTGGCCTAG : 1369
P33 : TGAAGTCGAAATGGCAGTGACAGCAGCGACGGAATTGCGCTGGCGCGGCTGGCCTAG : 1362
CH-3 : TGAAGTCGAAATGGCAGTGACAGCAGCGACGGAATTGCGCTGGCGCGGCTGGCCTAG : 1363
hunansensis : TGAAGTCGAAATGGCAGTGACAGCAGCGACGGAATTGCGCTGGCGCGGCTGGCCTAG : 1359
BD3526 : TGAAGTCGAAATGGCAGTGACAGCAGCGACGGAATTGCGCTGGCGCGGCTGGCCTAG : 1334
YQ1 : TGAAGTCGAAATGGCAGTGACAGCAGCGACGGAATTGCGCTGGCGCGGCTGGCCTAG : 1340

Fig. 1 (continued).
Paenibacillus hunanensis strain Y22 (JQ579632.1)
Paenibacillus sp. BD3526 (KM978955.1)
Paenibacillus sp. YQ1 (KF834271.1)
Paenibacillus dauci (This study)
Paenibacillus sp. CH-3 (HQ329105.1)
Paenibacillus hunanensis strain FeL11 (EU741039.2)
Paenibacillus polymyxa strain YRL13 (EU373421.1)
Paenibacillus hunanensis strain FeL05 (NR_116440.1)
Paenibacillus wulumuqien (KM243343.1)
Paenibacillus sp. B17a (EU558286.1)
Paenibacillus sp. HA62 (KF011646.1)
Paenibacillus sp. HA39 (KF011623.1)
Paenibacillus sp. P33 (AM906086.1)
Paenibacillus sp. SG3 (JX402418.1)
Paenibacillus sp. IHB B2283 (HM23974.1)
Paenibacillus sacheonensis strain JH8 (NR_115947.1)
Paenibacillus taichungensis strain JN1 (KF150330.1)
Paenibacillus sp. P33 (AM906086.1)
Paenibacillus sp. SG3 (JX402418.1)

Fig. 1 (continued)

Fig. 2. Phylogenetic tree analysis of Paenibacillus dauci sp. nov. in this study and other strains belonging to the genus Paenibacillus (MEGA 3.1).
2. Nucleotide sequence accession numbers

This whole genome shotgun project has been deposited at DDBJ/EMBL/GenBank under accession number LAQQ00000000. The version described in this paper is the first version, with accession number LAQQ01000000.

Conflict of interest

The authors declare that there is no conflict of interest on any work published in this paper.

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