**Biocontrol of tomato bacterial wilt by a new strain *Bacillus velezensis* FJAT-46737 and its lipopeptides**

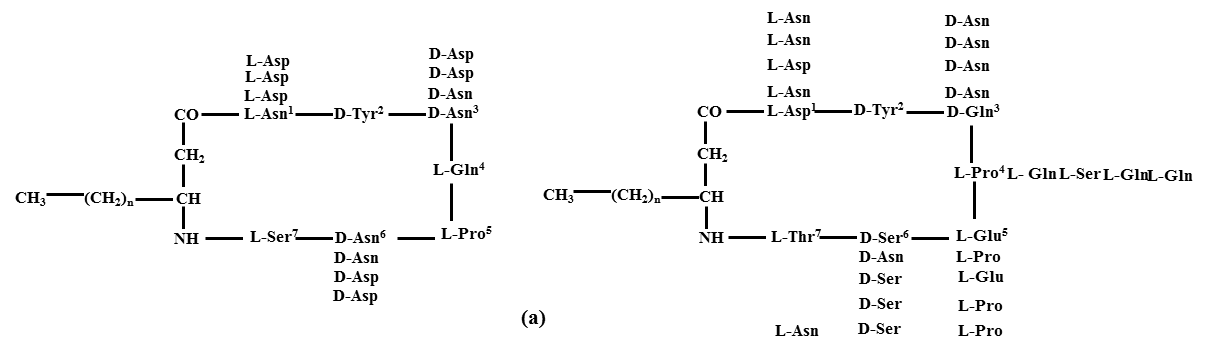
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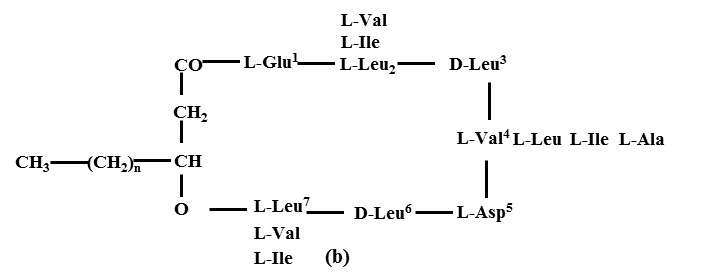
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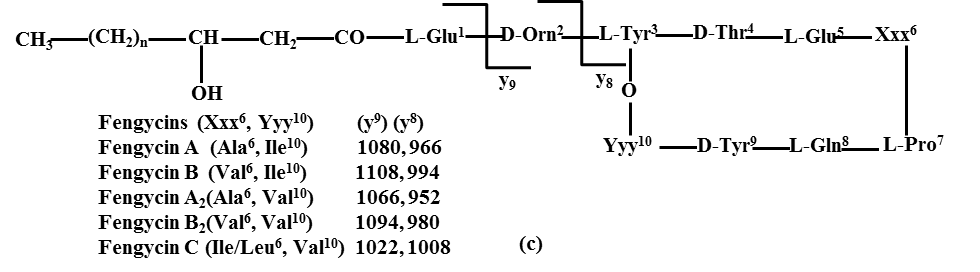


Figure S1. The chemical structure of three types of cyclic lipopeptides.



Figure S2. Morphology of *Bacillus* strain FJAT-46737

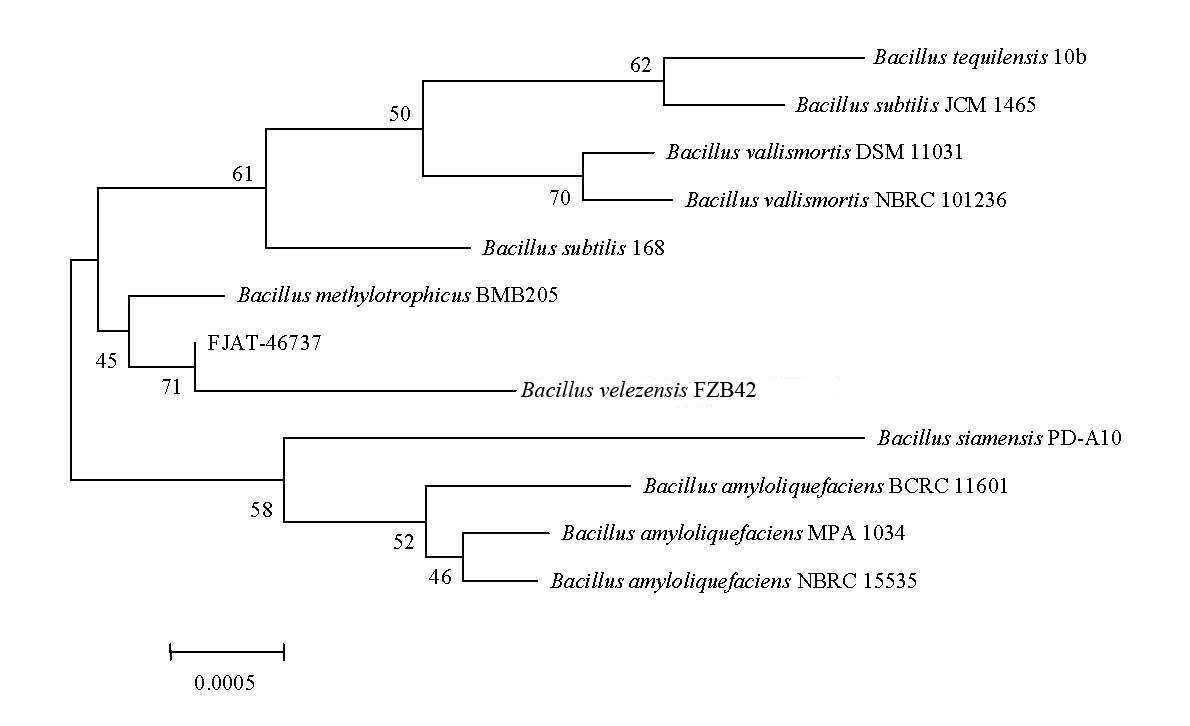


Figure S3. Phylogenetic tree based on the 16S rDNA sequences showing the position of strain FJAT-46737 (accession number: MG924092). The type strains of *Bacillus* sp. and representatives of some other related taxa. Scale bar represents 0.001 substitutions per nucleotide position. It is note that the strain *B. amyloliquefaciens* subsp. *plantarum* FZB42 was renamed as *B. velezensis*.

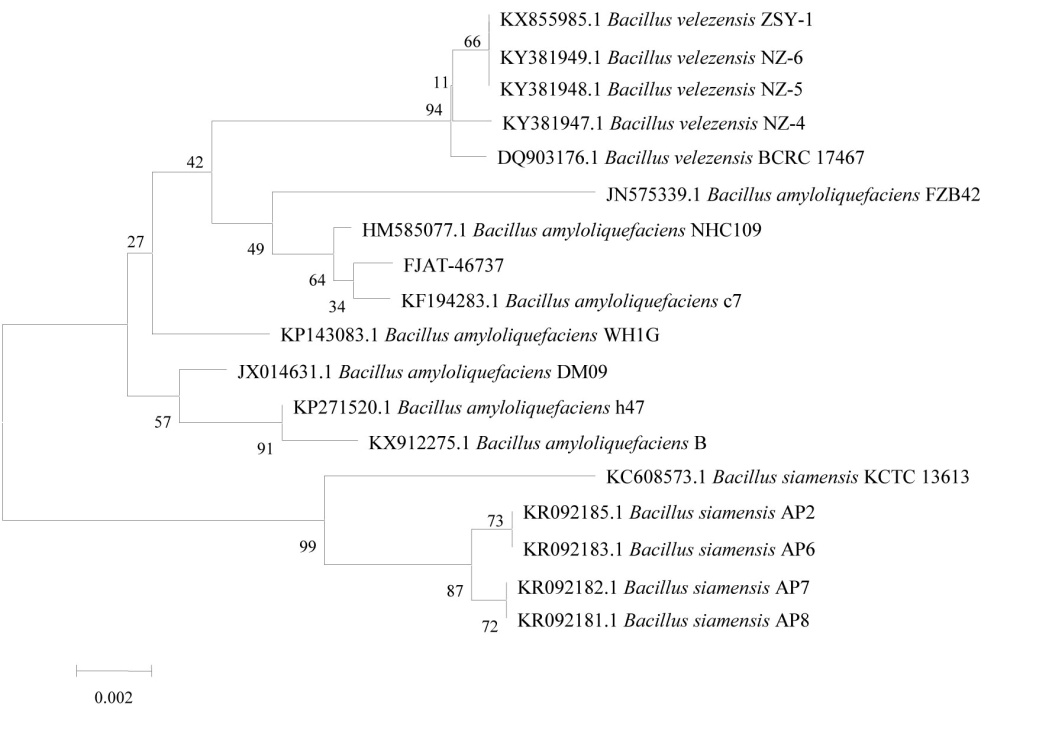
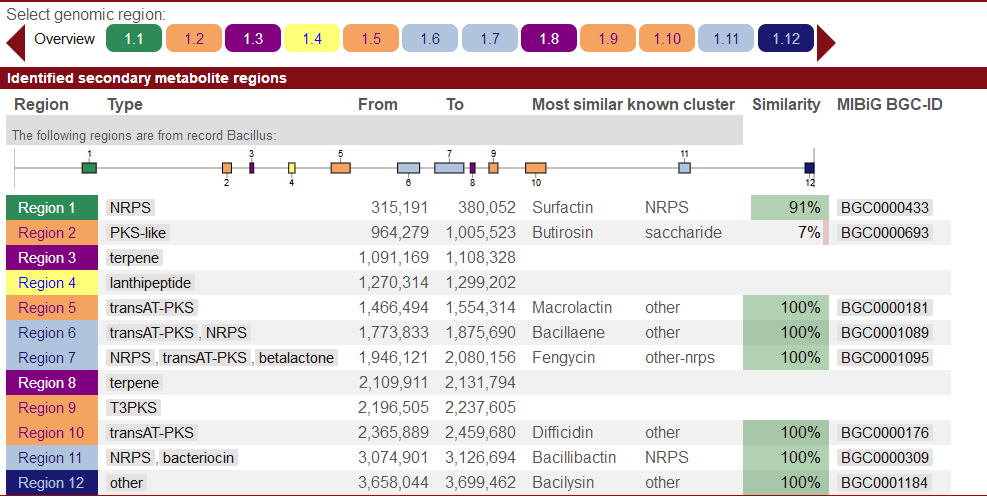


Figure S4. Phylogenetic tree based on the *gyrB* sequences showing the position of strain FJAT-46737 (accession number: MH470338). The type strains of *Bacillus* sp. and representatives of some other related taxa. Scale bar represents 0.001 substitutions per nucleotide position



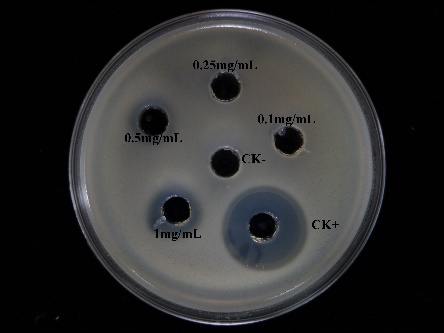
Figure S5. The prediction of gene clusters of bioactive secondary metabolites in strain FJAT-46737

Figure S6. The antibacterial photo of lipopeptide (0.1~1mg/mL) against *R. solanacearum* FJAT-91

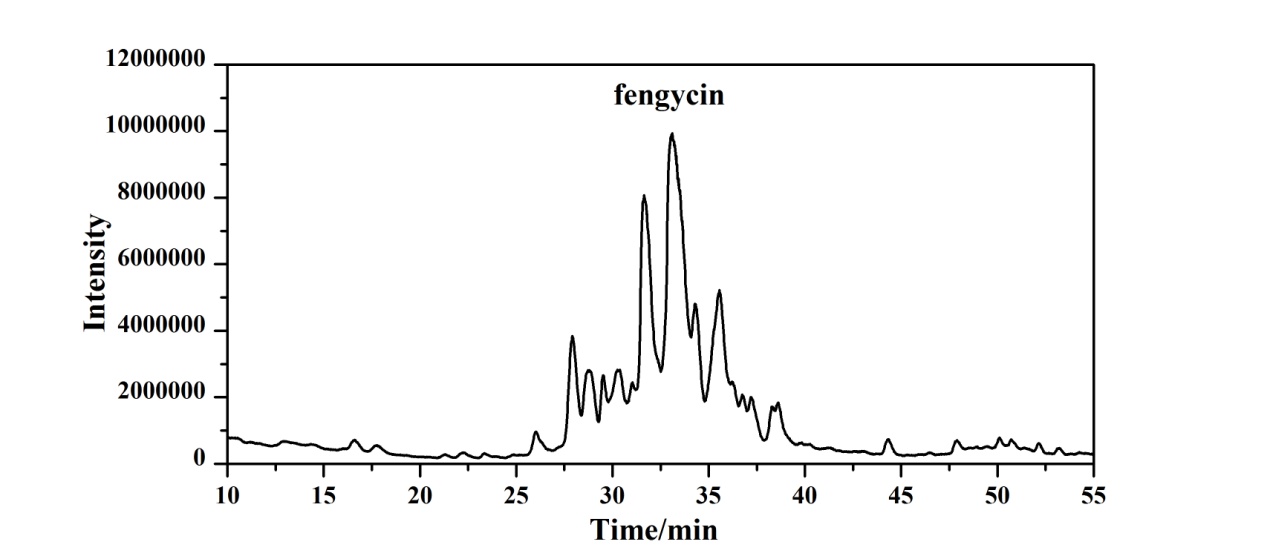


Figure S7. The full scan LC–ESI–MS chromatogram of fraction SPE70.

Table S1. Culture medium components

|  |  |  |
| --- | --- | --- |
| No. | medium | culture medium components (g/L) |
| 1 | A medium (LB) | tryptone 10, yeast extracts 5, NaCl 5 |
| 2 | B medium (NA) | beef Extract 3, peptone 5, glucose 10 |
| 3 | C medium | beef Extract 5, peptone 10, yeast extracts 5, NaCl 5, glucose 10 |
| 4 | D medium | beef Extract 5, peptone 10, yeast extracts 5, glucose 10 |
| 5 | E medium | Potato extract 5 peptone 10, NaCl 5, glucose 15 |
| 6 | F medium | beef Extract 8, yeast extracts 5, glucose 1 |
| 7 | PDA medium | potato, 200, glucose, 20, agar, 18 |