

## **Compounds produced by two robust *Bacillus amyloliquefaciens* biocontrol strains involved in antimicrobial activity and plant-growth promotion.**

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Several members of the *Bacillus* genus are potential candidates to be used as biological control agents to combat pests or plant diseases. The bacterial attributes associated to *Bacillus* behaviour are mainly: the production of antimicrobial compounds, the plant-growth promotion capability and the induction of systemic resistance in plant host. In previous works, we have demonstrated this multifaceted biocontrol activity of *B. amyloliquefaciens* CECT8237 (UMAF6639) and CECT8238 (UMAF6614) strains, which contributes to plant protection against bacterial and fungal pathogens.

In order to identify the bacterial features responsible for the outstanding biocontrol activity of these strains, their genomes were sequenced and analysed. Firstly, those features previously described for other *Bacillus* to be involved in the biocontrol activity were localized: i) Biosynthetic genes of secondary metabolites. Apart from the lipopeptides, formerly detected, we have demonstrated the production of other additional compounds that might participate in the antibiosis activity; ii) Biosynthetic genes of the volatile compounds 2,3-butanediol and acetoin, both involved in the induction of plant defence responses. Secondly, genetic singularities non-conserved within the *Bacillus* genus, which might contribute to the biocontrol ability of *B. amyloliquefaciens* CECT8237 and CECT8238 were identified in both genomes. Among them, we highlight two genomic regions hypothetically implicated in the production of non-characterized secondary metabolites.

Ongoing studies are focused on elucidating the functionality of these uncharacterized regions, leading to a better understanding of the mechanisms of action involved in the robust biocontrol skills of these strains.

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