

## Isolation, characterization and selection of *Pseudomonas* spp. as biological control agents from a suppressive soil

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Bacterial profile from a suppressive soil against *Rosellinia necatrix*, fungal pathogen of avocado roots, were obtained by 16S rRNA gene sequencing. The results revealed a significant increase in the bacterial class of *Gammaproteobacteria*, especially in some antagonistic representatives of *Pseudomonas* spp. For this reason, a collection of 246 bacterial isolates was obtained from this suppressive soil in order to identify new strains with antifungal activity against this fungal phytopathogen. First, we performed an isolation on a selective medium for *Pseudomonas*-like microorganisms. Then, we used different characterization tests in order to analyse the bacterial collection, including the identification of the general metabolic profile of glucose, the profiling of antifungals produced, both the putative production of antifungal compounds and lytic exoenzymes, as well as the evaluation of traits related with beneficial effects on plants. A final selection of representative strains resulted in antifungal isolates belonging to the genus *Pseudomonas* and related groups. These selected strains were tested for plant protection by an *in vivo* experiment using avocado and wheat plants challenged by the pathogen *R. necatrix*, showing all of them an antifungal ability and plant disease protection.

This work was supported by Plan Nacional I+D+I from MINECO (Spain) (AGL2014-52518-C2-IR) and co-financed by FEDER funds (EU). C.Vida was supported by a PhD fellowship from the FPI program of MINECO.

We would like to thank Irene Linares Rueda for her support as Laboratory technician of the group of Microbiology and Plant Pathology of the University of Malaga.