# HPLC-MS/MS-BASED METABOLOMIC ANALYSIS OF *PSEUDOMONAS* ISOLATES

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Field damage by phytopathogenic fungi can lead to significant crop losses, and their secondary metabolites can cause health risks in agricultural products. In plant protection, in addition to crop rotation, breeding resistant varieties, and using synthetic chemicals, biocontrol microorganisms such as *Bacillus*, *Streptomyces*, and *Pseudomonas* strains can also be used. However, their use is still limited due to varibale efficiency, low market availability, and farmers distrust.

In our study, the objective was to identify the metabolites responsible for the observed biocontrol effect in *Pseudomonas* isolates that had previously shown anatgonistic activity against a selected *Aspergillus flavus* strain. To achieve this, we created a mass spectrometry database based on bioactive compounds previously reported in the literature to be produced by *Pseudomonas* species. Then we analysed the metabolite profiles of 50 isolates by HPLC-ESI-HRMS, and six of these strains showed antagonistic activity in previous experiments.

By analysing the databases and metabolite profiles, we identified known bioactive compounds produced by the isolates, including various biocontrol metabolites, siderophores, cyclic lipopeptides, quorum-sensing molecules, and structurally related compounds. On the basis of our comparative analyses, the presence of these compounds could not be responsible for the observed antagonistic effect. However, we detected seven compounds that could not be identified on the basis of the database and were produced exclusively by the isolates showing antagonistic activity. These compounds were characterised by mass spectrometry, and on the basis of the available experimental data, we proposed a structure for one of the metabolites.