

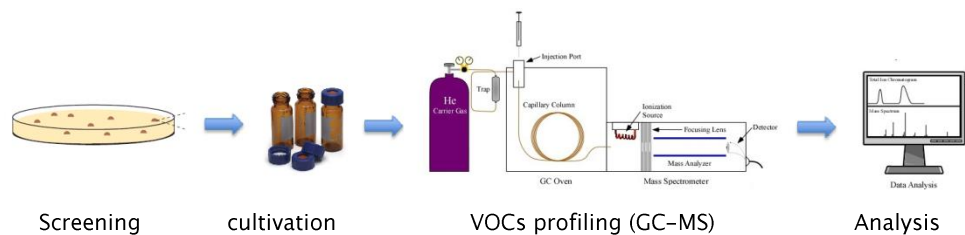
Vacant master/ diploma thesis project at the Institute of Environmental Biotechnology

„Bioprospecting metagenomes for bioactive volatiles”

is an acib (Austrian centre of industrial biotechnology) funded project in the field of natural product discovery. The project concentrates on the **identification of volatile organic compounds (VOCs)** with antimicrobial function for biotechnological application.

VOCs are important airborne transmitters for plant–plant, plant–microbe and microbe–microbe communication/interaction and constitute a promising remedy for bio–fertilisation and biocontrol. VOCs with antimicrobial function can be applied in agriculture to develop crop welfare and bring about more sustainable agriculture practices. They can further be used to control microbial hazards in human environments, like hospitals.

By sourcing metagenomes for antimicrobial VOCs one bypasses the need to cultivate microbes and gets access to the 95–98% of not cultivable microorganisms. Such an approach facilitates the identification of completely novel and unique antimicrobial compounds.



Project related tasks: The thesis project involves preparing and conducting screening assays of metagenomic libraries to identify clones which exhibit antimicrobial function. The VOCs profile of such clones will be analysed by Gas chromatography– mass spectrometry (GC– MS) to determine the VOC of interest. The project may involve participation in constructing metagenomic libraries as well as establishing alternative screening assays. Participation in general lab practises and group meetings is requested.

Starting time/ Duration: The project can start any time with the possibility to carry out a project lab prior to starting with the thesis project. The duration of the project is according to university demands and regulations (6–9 month).

Applicant´s background: The student ideally has a background in molecular biology and microbiology or any related field. Lab experience in molecular microbiology or basic know-how in analytical chemistry is of advantage. Good team working skills, a curious mind and the ability to work independently after a training period are desirable.

Language: Basic English speaking skills are essential, whereby supervision can be done in English and/or German.

With interest or in case of questions do not hesitate to contact



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