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Endophytic actinomycetes

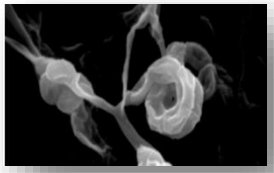
New taxa, bioactive compounds and PGPB

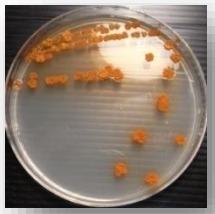
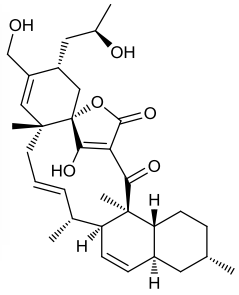
Endophytic actinomycetes isolated from Thai tropical plants including endemic, medicinal and agricultural important species are high potential sources for discovery of new genus/species, bioactive compounds and plant growth promoting (PGP) agents.

This aim is to identify new genus/species and bioactive compounds of endophytic actinomycetes and to screen for PGP properties

Endophytic actinomycetes interaction with plants

The aim of this project is to make mutants of endophytic actinomycetes at targeting genes involved in PGP traits and evaluate the PGP of those traits in pot experiment as well as studying transcription profile and proteomics of plant and endophyte interaction



New drug discovery from genome scanning of actinomycetes

After genome analysis of various actinomycete strains, there are several antibiotic gene clusters so-called ‘cryptic cluster’ that located in the genomes but have never been expressed in general culture condition. With development of new technology of gene manipulation, these gene clusters are tempting targets to be expressed in heterologous friendly host to force to production of new secondary metabolites.

Host manipulation and gene cluster cloning and expression

This aim of this project is to manipulate host strain to be able produce high level of secondary metabolites with low background of biosynthetic gene clusters. Whole genome sequencing of endophytic and marine actinomycetes will be analysed to search for interesting biosynthetic gene clusters involved in production of polyketides, non-ribosomal peptides and lantibiotics.

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