

Functional analysis of plant growth promoting bacteria



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Keywords	Microbial metabolism, Rhizosphere bacteria, Actinomycetes, Secondary metabolites		
Support Skills	<ul style="list-style-type: none"> • Isolation and cultivation of environmental bacteria. • Biochemical skills (protein analysis, enzyme purification, kinetic analysis) • Molecular biology (DNA analysis) 		

Research Contents Functional analysis of plant growth promoting bacteria

Various genera of bacteria cause pronounced effect on plant growth and are termed as plant growth promoting rhizobacteria (PGPR). The goal of our research is to develop the role of PGPR and to apply their functions in the agricultural technology. We focused on Actinomycetes bacteria that have plant growth promoting activities.

- ◇ Isolation of Actinomycetes bacteria from rhizosphere.
Isolation of Actinobacteria from plant rhizosphere and identification of their species by DNA analysis.
- ◇ Evaluation for the plant growth promoting activities of Actinobacteria.
Phosphate solubilization activity, plant hormone biosynthesis, siderophores production, etc.
- ◇ Screening and isolation of plant growth promoting secondary metabolites from Actinobacteria.
Isolation and identification of plant growth promoting compounds.
- ◇ Screening of Actinobacteria that degrade plant growth inhibiting compounds.
Analysis of inhibitor degrading metabolic pathway.



Tsuruoka Metabolome Campus
K-ARC Lab (KOSEN Applied Science Research Center).



Isolation of Actinobacteria from Dadacha soybean rhizosphere.

Available Facilities and Equipment

Bioclean-bench (Panasonic)	Centrifugal separator (TOMY)
Spectrophotometer (SHIMADU)	
Centrifugal concentrator (TOMY)	
Bio-incubator (TAITECH etc.)	
Thermalcycler (ABI)	