



Project Proposal for Ph.D.

Project Details

Project Title

Designer biosurfactants for nanoparticle synthesis

Project Summary

(Minimum 500 and maximum 2000 characters)

Biosurfactants are amphiphilic molecules produced by microorganisms. Various types of biosurfactants such as glycolipids, lipopeptides, polymeric etc. have been reported. Usually, a microorganism produces several congeners of biosurfactant molecules, for example as many as 60 congeners have been reported for Rhamnolipids. We propose to isolate potential biosurfactant producing microorganisms, characterize them. Further, recombinant microorganisms will be constructed which produce tailor made designer biosurfactants. For this purpose, heterologous host will be used or selective gene deletions will be performed in native host. The biosurfactant will be purified and used for biosurfactant assisted nanoparticle synthesis applications.

Ph.D. Supervisors

Role	Faculty	Academic Unit in IITD/Institute/University	Email ID (Official)
Supervisor 1	Prof. Preeti Srivastava	DBEB	preeti@dbeb.iitd.ac.in
Supervisor 2	Prof. Leena Nebhani	DMSE	lnebhani@mse.iitd.ac.in

Project requirements (Student qualifications, experience required, etc)

- M.Sc Microbiology

Source of fellowship/funding

(CSIR/UGC/DBT/ICMR/ICAR/NEET-PG/DST-INSPIRE/IRD/FITT Project details, if any)

Part-time candidates only

Role of Faculty Members involved:

PS: Biosurfactant biosynthesis, production and purification
LN: Biosurfactant mediated stabilization and synthesis of nanoparticles