



Characterization of Biosurfactant from *Bacillus* Isolates as Antifungal Agent

Pawan Kumar, Rani Sharma, Archana Gajbhiye *

Department of Biotechnology, Sir Padampat Singhania University, Bhatewar, Udaipur-313601, India

Address for Correspondence: Archana Gajbhiye; archana.gajbhiye@spsu.ac.in

ABSTRACT: Use of green compounds to achieve the sustainable agriculture is the present necessity. Biosurfactants are one of the green compounds reported to be produced by bacteria, yeasts, and fungi which are considered to be less toxic and eco-friendly with extensive applications in pharmaceutical, cosmetics, and food industries. *Bacillus* group is one of the examples of biosurfactant producers. In the present study, soil isolates of *Bacillus* species were screened for the production of biosurfactant by oil spread assay. The activity was found positive in three isolates which were assayed for antifungal activity against the phytopathogens *R. oryzae-sativae* and *F. solani*. The biocontrol activity was observed in both extracellular and the homogenized biomass fractions of *B. subtilis* BP-9, *B. subtilis* BP-13 and *Bacillus* isolate PRIS-1. Different methods as acid precipitation, organic solvent extraction and salting out by ammonium sulfate were used for isolation of biosurfactant lipopeptides from the extracellular fractions of *B. subtilis* BP-9, *B. subtilis* BP-13 and *Bacillus* species PRIS-1. The antifungal as well as biosurfactant property was confirmed in the acid precipitated fraction of *Bacillus* isolate PRIS-1. The compound was identified as a high molecular weight protein by SDS-PAGE with approximate size of 100kD. © 2014 iGlobal Research and Publishing Foundation. All rights reserved.

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