Antagonist *Streptomyces exfoliatus* MT9 as biocontrol agent against fruit-rotting fungi

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Biological control of phytopathogenic fungi continues to inspire the research and development of environmentally friendly bioactive alternatives. A fungal antagonist isolated from Loktak Lake, Manipur, India designated as *Streptomyces exfoliatus* MT9 was characterized and identified on the basis of fatty acid methyl ester and 16S rRNA gene analysis. The strain MT9 showed strong and broad spectrum antagonism towards tested fruit-rotting fungi. The antagonist MT9 secretes three vital fungal cell-wall lytic enzymes i.e., chitinase, β-1, 3-glucanase and protease along with low molecular weight antifungal secondary metabolite i.e., siderophores. In addition, extracellular fluid and its organic solvent extract also exhibited potential antagonism towards tested fruit-rotting fungi. Antifungal metabolites were characterized as polyene in nature. *In vivo* fruit decay bioassays also demonstrated the biocontrol potential of tested biocontrol agents i.e., cell suspension of *S. exfoliatus* MT9, extracellular culture fluid (ECF) and its n-butanol extract that suppressed both citrus and papaya-rotting fungi. Therefore, *S. exfoliatus* MT9 and its extracellular bioactive metabolites can be developed as new eco-friendly biofungicide or can be included in integrated approaches for controlling postharvest disease of citrus and papaya fruits.

Biography

Bharti Choudhary has done her BTech and MTech in Biotechnology and currently pursuing her PhD (Biotechnology) from Guru Gobind Singh Indraprastha University, Delhi, India. She has published four research articles, one review articles in SCI indexed, peer reviewed journals and have also filed one patent.

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