

Isolation, Molecular Identification and Evaluation of Antifungal Effects of the Bacilli Isolated from Rhizospheric Soil of Gorgan Region against *Tricophyton Mentagrophytes*

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Abstract

Background and objective: Soil bacteria, particularly *Bacillus* genus have the potential of producing a range of bioactive substances with antimicrobial and antifungal properties. They have the ability to produce hundreds of active and effective biologic compound against microorganisms. Therefore, it seems to be a proper candidate in the biocontrol of fungal pathogenesis.

Material and Methods: In this study, soil samples were collected from different parts of Gorgan in order to isolate *Bacillus* and to determine their antifungal activity against *T.mentagrophytes*. The Isolates that had the highest antifungal effects were analyzed by PCR and 16s rRNA sequencing.

Results: Of 54 strains, 14 have antifungal activity. The Isolates, S4 and S12, identified as *B.cereus* and *B.thuringiensis* respectively show the highest antidermatofit effect. These isolates based on 16s rRNA sequence analysis show 97% homology with *Bacillus cereus*strain KU4 and *Bacillus thuringiensis*strain ucsc27.

Conclusion: According to the results, it seems that the soil Bacilli have biocontrol potential against dermatophytic agents such as *T.mentagrophytes*.

Keywords: Antifungal effects; *Bacillus*; Rhizospheric soil; *T.mentagrophytes*

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