Separation and Identification of Micromonospora genus from soil and their antibacterial properties

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Abstract:

Aim and Background: The genus Micromonospora is a prolific source of various bioactive metabolites, such as antibiotics and enzyme inhibitors. Members of Micromonospora are widely distributed in a variety of habitats, notably soil rich. The aim of current study was to isolation, identification of the isolates to genus level by 16S rRNA gene amplification and determines the isolates antimicrobial activity.

Material and Methods: *Sixty soil samples collected from different parts of Iran. Each soil sample treated by 1.5% phenol and was cultured on different suitable media to isolation of Micromonospora. The isolates were subjected to genus identification by means of 16S rRNA amplification with genus specific primers. Extract of the isolates belongs to Micromonospora, were tested agianst pathogenic bacteria to determine their antibacterial activity.*

Results: *From 60 soil samples, 200 actinomycets were isolated which 15 isolates were confirmed as Micromonospora by means of 16S rRNA amplification with genus specific primers. Extract of the 5 isolates had antimicrobial activity against Methicillin-resistant Staphylococcus aureus (MRSA) ATCC 33591 and Bacillus cereus ATCC 1399 .*

Conclusion: Isolated *Micromonospora spp during this study, were able to produce the antimicrobial components against MRSA, one of the most challenge in the clinical setting.*

Key words: *Micromonospora, antibiogram*

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