

## ABSTRACT

### MOLECULAR IDENTIFICATION OF SOME DERMATOPHYTES ISOLATED FROM SOIL AND MAN

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2013, 59 sayfa

Dermatophytes are fungi which can break down the keratin substrate. Invasion of a strong material such as keratin is due to their keratinolytic activity. These fungi including genera *Microsporum*, *Trichophyton* and *Epidermophyton* can cause skin infections in animals and human.

It is divided into three ecological niches such as antropophilic (human), zoophilic (animal) and geophilic (ground). In our country, there are many examples of dermatophytes isolation studies from human beings and animals. But there is relatively less studies on the flora of dermatophytes in soil. In this study, the molecular diagnosis and enzyme potential of dermatophytes isolated from soil and human were aimed. Fifty soil samples were collected for the purpose of this study. Soil samples were examined with hair trap technique. Swab was taken from 20 volunteers who have skin itching, redness, thickening and discoloration of the nail. A total of 48 fungi, 41 from soil and 7 from human, were isolated. Genomic DNA was isolated from these fungi. ITS has been preferred as a marker for identification. Sequences of the PCR products have been analyzed by ClustalW, BLAST programs. Isolated keratinophilic and dermatophytes genera were *Debaryomyces*, *Chrysosporium*, *Arthroderma*, *Galactomyces*, *Paecilomyces*, *Trichophyton*, *Microsporum*, *Aphanoascus*, *Geotrichum*, *Lecanicillium*, *Beauveria*, *Penicillium*, *Scedesporium*, *Purpureocillium*, *Uncinocarpus*, *Acremonium*, *Pseudallescheria*. Twenty three per cent of fungi obtained were dermatophyte. Eleven dermatophytes were obtained from 48 isolates of which 7 *Arthroderma fulvum*, 2 *Microsporum gypseum* and 2 *Trichophyton rubrum*. 25 of fungi were examined for production of protease, lipase, phospholipase, elastase and keratinase. Pz value

was calculated based on the diameter of the zone formed and the growth diameter of fungus. Dermatophytes displayed high production of phospholipase and lipase. *B. bassiana* and *P. lilacinus* species drew attention with high elastase and keratinase activities.

**Key words:** Dermatophytes, ITS, keratinophilic