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Original Article

The Enzymatic Activity and Molecular Characterization of a Secreted Subtilisin-Like Protease in Microsporum gypseum and Trichophyton vanbreuseghemii

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Abstract:

Background: Subtilisin -like proteases are the group of proteases including keratinases found in dermatophytes which degraded keratin. Determination of the proteases activity of *Trichophyton vanbreuseghemii* isolates which were obtained from soil and clinical and soil isolates of *Microsporum gypseum* in Iran and characterization of their genome were aim of present study.

Methods: Ezymatic activity was determined by use of chromogenic substrates. The genes, which coded subtilisin-like proteases in above-mentioned dermatophytes, was identified and amplified by using specific primers in PCR.

Results: The highest yield of enzyme production was observed in only one isolate of *T. vanbreuseghemii* Ir-84 whereas low enzyme activity was observed in *M. gypseum* isolates. Homology study of obtained nucleotide as well as amino acid sequences indicated different rates of homology with other subtilisin-like proteases genes in other pathogenic dermatophytes.

Conclusion: Intra-strain differences were observed in production of serine proteinases and molecular characterization of genes encoding such enzymes could be of great interest for studies on pathogenicity and other purposes.

Keywords:

Keratinases ، *Subtilisin-like protease* ، *Trichophyton vanbreuseghemii* ، *Microsporum gypseum*

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