INDUCTION BY EPIDERMOPHYTON FLOCCOSUM OF HUMAN FIBROBLAST MATRIX METALLOPROTEINASE-9 SECRETION IN VITRO

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Abstract. Skin infection from pathogenic dermatophyte, \textit{Epidermophyton floccosum}, can cause serious health complications, especially in immuno-compromised patients. Proteolytic enzymes secreted from \textit{E. floccosum} are required for host tissue degradation, facilitating fungal invasion. However, little is known regarding host matrix metalloproteinase (MMP) expression during \textit{E. floccosum} infection. In this study human foreskin fibroblast (HFF) cell line was used to determine MMP-9 protease activity by gelatin zymography and amount by ELISA. \textit{E. floccosum} induced HFF secretion of MMP-9 in a time dependent manner, but HFF cell viability decreased. Treatment with an MMP inhibitor (SB-3CT) caused reduction in \textit{E. floccosum}-induced secreted MMP-9 and improvement in HFF cell viability. These findings indicate a possible control measure for protecting skin from \textit{E. floccosum} infection.

Keywords: \textit{Epidermophyton floccosum}, antifungal activity, fungal infection, human foreskin fibroblast, matrix-metalloproteinase-9, MMP inhibitor (SB-3CT)