Antimicrobial Activity of *Gelonium multiflorum*, A. Juss, Leaves

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ABSTRACT

Phytochemical analysis of the leaves of Gelonium multiflorum from Euphorbiaceae family resulted in the isolation and yield product of many compounds. Various solvent (hexane, dichloromethane and methanol) extracts of leaves were tested against 3 human pathogenic bacteria and 2 opportunistic fungi by the agar-well diffusion method. As a result of the low solubility of substances, therefore, the agar dilution method was employed instead. Solvent extract from dichloromethane expressed antifungal activity against Trichophyton mentagrophytes and Trichophyton rubrum with the minimum inhibitory concentration (MIC) at 3200 µg/ml. By column chromatography technique, purification of this extract yielded in three fractions, two of these had antifungal property and contained many constituents.

Key words: *Gelonium multiflorum* A. Juss., Antimicrobial activity

INTRODUCTION

Gelonium multiflorum A. Juss is a plant of the Euphorbiaceae family, native to the tropical forests of eastern Asia. It was used in traditional medicine to treat cancer, ringworm and venereal diseases (Phooputpong, 1987 ; Sunthorntummo, 1987). Some phytochemical components can be applied in many arrays of medicine, *e.g.* anti-cancer (Rosenblum et al., 1992), anti-parasitic (Surolia and Misquith, 1996) and anti-viral (Foa-Tomasi et al., 1982) effects by the plant proteins such as gelonin, a ribosome-inactivating protein (RIP) (Stirpe et al., 1980). MAP 30 and GAP 31 from *G. multiflorum* had anti-herpes simplex activity (Bourinbaiar et al., 1996). Although there are many studies of phytochemical molecules, there is little information about antifungal and antibacterial activities of *G. multiflorum.*

This study examined antibacterial and antifungal activities of *G. multiflorum.* At the beginning, the leaves of *G. multiflorum* were extracted by polarity order with hexane, dichloromethane and methanol. The selected fractions from previous step were subsequently isolated by column chromatography. Agar diffusion method