Pharmacognostic Identification and Antimicrobial Activity Evaluation of *Vetiveria Zizanioides* (L.) Nash. ex Small Root

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ABSTRACT

The study of Vetiveria zizanioides (L.) Nash. ex Small root from six different cultivars namely : Surat Thani, Phimai, Wiang Chai, Pang Bong, Rachaburi and Indonesia revealed a very minor difference in shape and size. The name of the cultivar was derived from the area in which it was first cultivated in Thailand and the samples we investigated came from Doi Tung Palace. Determination of antimicrobial activity revealed that crude methanolic extracts of 6 cultivars of V. zizanioides root showed antifungal activity against Trichophyton mentagrophytes at 1% W/V. Some cultivars showed antibacterial activity against Staphylococcus aureus ATCC 25923, Escherichia coli ATCC 25922 and Pseudomonas aeruginosa ATCC 278533 at 10% W/V. The most active cultivar was PangBong. We purified crude methanolic extract of cv. SuratThani by column and preparative thin layer chromatography. Five components were collected and analysed and four of them showed antifungal activity against T. mentagrophytes by using the agar diffusion method. The minimum inhibitory concentration (MIC) of the purified combined column chromatographic fractions against T. mentagrophytes, as determined by the agar dilution method, was 78 μg/mL, and MIC of one from four components was 1,628 μg/mL. In addition to the pharmacognostic identification and antimicrobial activity evaluation of these six cultivars, the crude methanolic extracts may be able to cure dermatophytic infection that is associated with some types of skin disorder.

Key words : V*etiveria zizanioides* (L.) Nash. ex Small, Pharmacognostic identification, Antimicrobial activity

INTRODUCTION

There are 11 species of Genus *Vetiveria* in the world but only 2 species are found in Thailand: *Vetiveria nemoralis* A. Camus and *V. zizanioides* (L.) Nash. ex Small which can grow in all types of soil and climate. It can conserve moisture, nitrogen and toxic substances and can prevent soil erosion. Kindra and Satayanaraya (1978) claimed that vetiver oil from *Vetiveria spp*. had antimicrobial activity. Present investigations report on pharmacognostic identification and antimicrobial activity of *V. zizanioides* root against some human pathogens.