THE ANTIBACTERIAL ACTIVITY OF THE AQUEOUS EXTRACT OF *SIDA ACUTA* BURM. F.

Wiyada Chumpol[1,2], Ratree Tavichakorntrakool[2,3], Aroonlug Lulitanond[2,3], Jureerut Daduang[2], Phitsamai Saisud[2,3], Pipat Sribenjalux[2,3], Vitoon Prasongwatana[4] and Patcharee Boonsiri[4]

[1]Graduate School, Khon Kaen University, Khon Kaen; [2]Centre for Research and Development of Medical Diagnostic Laboratories, Faculty of Associated Medical Sciences, Khon Kaen University, Khon Kaen; [3]Department of Clinical Microbiology, Faculty of Associated Medical Sciences, Khon Kaen University, Khon Kaen; [4]Department of Biochemistry, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand

Abstract. Increasing bacterial resistance to antimicrobial drugs had led to the search for new antibacterial agents. A Thai medicinal plant, *Sida acuta* Burm. F. (SA), has been used for wound healing. The objective of this study was to determine the antibacterial activity of the aqueous extract of SA (SA-AE) against the antimicrobial-susceptible strains including three gram-positive bacteria: *Enterococcus faecalis* ATCC 29212, *Staphylococcus aureus* ATCC 25923 and *S. aureus* ATCC 29213; and four gram-negative bacteria: *Escherichia coli* ATCC 25922, *Klebsiella pneumoniae* ATCC 700603, *Proteus mirabilis* DMST 8212 and *Pseudomonas aeruginosa* ATCC 27853, using the disc diffusion and broth microdilution methods. We also conducted high performance liquid chromatography (HPLC) profile on SA-AE to determine the major components. The results of disc diffusion test of SA-AE at 5 mg/disc showed no inhibition zone for all these strains. Minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) values for *S. aureus* ATCC 25923 and *S. aureus* ATCC 29213 were 16 mg/ml and 16 mg/ml, respectively, which were lower than MIC and MBC values of SA-AE for the other strains. HPLC reveals SA-AE contains para-hydroxybenzoic acid, ferulic acid and resveratrol. SA-AE should be explored further as an antimicrobial agent against *S. aureus*.

Keywords: *Sida acuta* Burm. F., antibacterial activity, *Staphylococcus aureus*

Correspondence: Dr Ratree Tavichakorntrakool, Department of Clinical Microbiology, Faculty of Associated Medical Sciences, Khon Kaen University, Khon Kaen 40002, Thailand.
Fax / Tel: +66 (0) 43 202086
E-mail: ratree.t@gmail.com, ratree.t@kku.ac.th
Dr Patcharee Boonsiri, Department of Biochemistry, Faculty of Medicine, Khon Kaen University, Khon Kaen 40002, Thailand.
Fax / Tel: +66 (0) 43 348386
E-mail: patcha_b@kku.ac.th