

"In Vitro Antibacterial Activity of *Aloe vera* (L.) Burm.f. (ရှာခောင်းလင်္ဂဝံ) Leaf Extracts"

Saw Myat Thwe, Thant Sin Win, Swe Swe, Nandar Ko, (2015)

Department of Medical Research (Pyin Oo Lwin Branch)

Abstract

Pathogenic bacteria are major causes of human morbidity and mortality. It is necessary to know antibacterial action of traditional herbal extract. *Aloe vera* (L.) Burm.f. (ရှာခောင်းလင်္ဂဝံ) is one of the most popular medicinal plants in our country, belonging to the family Aloaceae. The present study deals with in vitro antibacterial activity of *Aloe vera* (L.) Burm.f. (ရှာခောင်းလင်္ဂဝံ) leaf extracts. This was a laboratory based experimental study carried out at the Department of Medical Research (Pyin Oo Lwin Branch) during October 2015 to February 2016. The leaf samples were collected from Mandalay Region in October 2015. The collected plant was identified according to the taxonomic characters based on the Backer & Brick (1968) and Dassanayake (2000) by taxonomist. Extraction of leaves was done by maceration method. 95 % ethanol, methanol and distilled water were used as solvents. Strains of pathogenic bacteria were tested in this study such as *Pseudomonas aeruginosa*, *Staphylococcus aureus* and *Escherichia coli*. Agar disc diffusion technique in Modified Kirby and Bauer method was used to determine the zone of inhibition of three extracts of *Aloe vera*. The minimum inhibitory concentration (MIC) and the minimum bactericidal concentration (MBC) testing were done by broth dilution method. Among different extracts, the 95 % ethanolic extract showed larger zone of inhibition, i.e., 7 mm to 10 mm for *Pseudomonas aeruginosa*. The methanolic extract showed 7.5 mm and the distilled water extract did not show antibacterial activity. Three kinds of extract did not show antibacterial activity on *Staphylococcus aureus* and *Escherichia coli*. The MIC of 95 % ethanolic and methanolic extracts against *Pseudomonas aeruginosa* was 12.5 mg/ml. The MBC of 95 % ethanolic and methanolic extracts against *Pseudomonas aeruginosa* was 25 mg/ml. Therefore, the finding of research is very applicable for further studies of *Aloe vera*.