



617/E2

Antibacterial properties of *Walidda antidysenterica* extracts against common pathogenic bacteria

W S de Silva¹, E D de Silva^{1*} and K H Tennekoon²

¹Department of Chemistry, Faculty of Science, University of Colombo, Colombo 03

²Institute of Biochemistry, Molecular Biology and Biotechnology, Colombo 03

Medicinal plants are good sources of novel secondary metabolic products showing a variety of biological activities including antibacterial activities. *Walidda antidysenterica* (Walidda) is used in traditional medicine to treat tonsillitis and bronchial diseases. The valuable effects of this plant are not scientifically confirmed. Consequently, this study was carried out to evaluate antibacterial activities of the plant and to assess its potential as a source of antibacterial compounds. Different parts of the plant (root, leaves, bark and seeds) were air dried and powdered samples were sequentially extracted with 3 solvent systems (methanol, methanol: CH₂Cl₂-1:1 and CH₂Cl₂) and mixed together to yield the total extract of each plant part. These extracts were investigated for antibacterial properties against the common pathogenic bacteria, *Staphylococcus aureus* (ATCC 25928), *Bacillus subtilis* (ATCC 6633), *Escherichia coli* (ATCC 25922) and *Pseudomonas aeruginosa* (ATCC 27853) by agar disk diffusion method at 200 µg/disk concentration. Both leaf and seed extracts showed considerable activity against the Gram positive bacterium *S. aureus*. The highest antibacterial activity with a zone of inhibition 18 mm was reported from the leaf extract. Seed extract showed an inhibition zone of 11 mm. Further purification of the leaf extract was done by solvent / solvent partitioning using the kupchan partitioning scheme to give four fractions. The three polar fractions (CHCl₃, EtOAc and H₂O) were active against *S. aureus* (at 200 and 100 µg/disk concentrations) while the hexane fraction was not. The highest activities were shown by CHCl₃ and EtOAc fractions. The chloroform fraction was subjected to reverse phase column chromatography to give eight fractions, A to H. Fractions were tested for antibacterial activity against *S. aureus* and only fraction C showed a substantial activity against *S. aureus* (21 mm diameter of inhibition zone at 100 µg/disk concentration).

Based on the present study it can be concluded that *W. antidysenterica* extracts possess antibacterial activity against *S. aureus*. Leaf and seeds were the most active. Thus *W. antidysenterica* may be of use in the development of new antibacterial agents.

Keywords: Antibacterial, pathogenic, *Walidda antidysenterica*

Acknowledgments: Financial assistance by the Ministry of Higher Education