

Preliminary phytochemical screening and antibacterial activity of *Sphagnetocola calendulacea*

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preparation of Siddha drugs. *Sphagnetocola calendulacea* are belongs to the family of Asteraceae. Synonym(s) is *Wedelia chinensis*. *S. calendulacea* is called "Manjathakaraisal" in Tamil and "Kikirinda" in Sinhala [1]. Commonly it is used in the preparation of "Arjanam" (Eye ointment) for eye diseases and it also used in the preparation of hair oils. It is used in the treatment of liver diseases. Leaves are used as externally for the treatment of skin diseases. Hepatoprotective, cytotoxic and antioxidant properties of plant extracts have been reported previously. Anti-microbial activity of various organic solvent extract of leaves of *S. calendulacea* has been evaluated previously [2]. In Siddha Medicine whole plant is used in the preparation of Medicines [1]. Therefore, the aim of the study was to evaluate the antibacterial activity of decoction and ethanolic extract of whole plant *S. calendulacea* against *Staphylococcus aureus* (ATCC 25923), *Pseudomonas aeruginosa* (ATCC 27853), *Escherichia coli* (ATCC 25922) and *Enterococcus faecalis* (ATCC 29212) and to screen the phytochemicals of whole plant. The antibacterial activity was evaluated by using the standard cut well diffusion method with Nutrient Agar as the medium, while a control was maintained. The diameter of the zone of inhibition (ZOI) was measured after incubation. Replicates were made for the entire procedure. Qualitative phytochemical analysis was done to test for the presence of phytochemicals. The ethanolic extract possesses tannins, flavonoids, steroids, cardiac glycoside, alkaloids and terpenoids. The decoction contains cardiac glycoside, alkaloids and terpenoids. Ethanolic extract showed high degree of growth inhibition on both gram positive as well as gram negative bacteria (11 ± 0.32 mm - 36 ± 0.65 mm). The decoction of *S. calendulacea* did not show inhibitory activity against *E. coli* and *E. faecalis*. Both decoction and ethanolic extract showed inhibitory activity against *S. aureus* and *P. aeruginosa* ($17 \pm 0.66 - 28 \pm 0.77$ mm). The reason of this may be the more phytochemicals are in the ethanolic extract. The Ethanolic extract of *S. calendulacea* has a great potential antimicrobial compounds against microorganisms that can be used in treatment of infectious diseases caused by *S. aureus*, *P. aeruginosa*, *E. coli* and *E. faecalis*. Further study should be carried out against a wider spectrum of Organisms.

1. INTRODUCTION

Sphagnetocola calendulacea

Key words - Antibacterial activity, Phytochemical screening,

Organisms.

The freshly prepared Ethanolic extract (5 g plant material

refluxed with 50 ml of ethanol) and water extract (1 g of plant material boiled in 10 ml of water) were chemically tested qualitatively for the presence of chemical constituents such as alkaloids, saponins, tannins, steroids, flavonoids, glycosides and terpenoids. They were identified using characteristic colour changes using standard procedures described as below: