In vitro antibacterial activity of aqueous root extract of *Sida cordata* Burm on infectious bacteria of the urinary tract

RYC Ramasinghe[1#], HMNDM Herath[2], BMHD Samarasinghe[3], RD Widanagamage[4], RN Pathirana[5] and WD Ratnasooriya[6]

[1,2,3,4,5]Faculty of Allied Health Sciences, General Sir John Kotelawala Defence University, Sri Lanka
[6]Department of Zoology and Environment Sciences, University of Colombo, Sri Lanka
[#]raviyasaswin@gmail.com

Urinary Tract bacterial Infections are frequent amid resistant strains against antibiotics. In this context, the importance of newer, safer alternative remedies such as from medicinal plants appear necessary. Present study evaluated the *in vitro* antimicrobial activity of aqueous root extract of *Sida cordata* Burm. against certain common urinary tract infective bacteria, *E. coli* (ATCC 25922)*, S. aureus (*ATCC 25923), *K. pneumoniae* (ATCC 13883), and *E. Faecalis* (ATCC 29212). *S. cordata* extract has been known to possess pharmacological and antibacterial properties in Sri Lankan traditional medicine. Kirby-Bauer disc and well diffusion methods were used to determine the antibacterial activity. Macro broth dilution method was used to determine the minimum inhibitory concentrations. The root extract exhibited antibacterial activity against the uropathogens at all tested concentrations; 500, 750, and 1000 µg/mL. The highest antibacterial activity was shown against *E. coli* in both disc and well diffusion assays and the least antibacterial activity was against *E. faecalis.* Antibacterial activity was concentration dependent. The highest MIC value was shown against *E. faecalis* and the least MIC value was shown against *E. coli*. Qualitative phytochemical screening for the aqueous root extract revealed the presence of diterpenes, saponins, flavonoids and glycosides. This study justified the use of aqueous root extract of *Sida cordata* Burm. for treating urinary tract infections in traditional medicine and indicated the potential for developing a new drug.

Keywords: urinary tract infections, Sida cordata burm, root extract, antibacterial