



Phytochemical analysis and in-vitro antimicrobial activity of *Swertia chirata* in different solvents

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Abstract : The present study was undertaken with an aim to analyse the distribution of the phytochemicals in the different parts of *Swertia chirata* in methanol, acetone, petroleum ether and chloroform extracts. The phytochemical analysis revealed that the maximum bioactive compounds were present in the methanol extract. The methanol and acetone extracts of *Swertia chirata* were evaluated for antimicrobial activity against Gram-positive cocci (*Staphylococcus aureus* and *Streptococcus pyogenes*), Gram-negative bacilli (*Escherichia coli* and *Salmonella typhi*) and fungi (*Aspergillus flavus* and *Candida albicans*) by agar diffusion method and further

confirmed by disc-diffusion method. The leaf and stem portion of the methanol extract showed the most significant antimicrobial activity against Gram-positive, Gram-negative and fungal strains. The most significant antimicrobial activity was seen against *Staphylococcus aureus* which reflects its potentiality to be used in skin infections.

Keywords: *Swertia chirata*, phytochemicals, antimicrobial, agar diffusion method, disc-diffusion method.

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Introduction:

The use of medicinal plants play an important role to cover the basic health needs of human beings. *Swertia chirata* an annual herb is reported for an array of therapeutic uses. Hence, the present study was undertaken to evaluate the antimicrobial activity of *Swertia chirata* (Family; Gentianaceae) The plant is a native of temperate Himalayas, found at an altitude of 1200-3000 from Kashmir to Bhutan and in the Khashi hills at 1200-1500m (Clarke, 1885). It can be grown in subtemperate region between 1500 and 2100 altitudes. The plant extract have been reported to