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Phytochemical and Antimicrobial studies on Tuber of *Gloriosa superba* L

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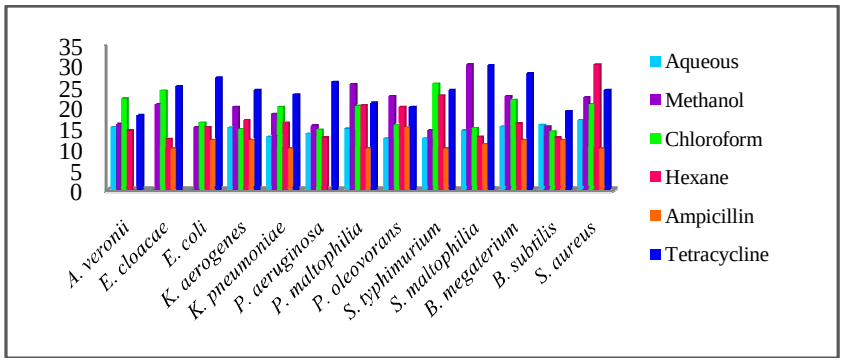
ABSTRACT

Gloriosa superba L family Colchicaceae, malabar glory lily in English. It is a medicinal important herbaceous, perennial climbing plant V-shaped rhizomes (tuber) that are white when young, and becoming brown with age found all over India. The plant usually used in traditional systems of medicine for the practice of several human diseases like cancer, gout, piles, scrofula and act as antipyretic, anti-abortive and purgative. But, it also initiated disorders and mortalities to humans and animals due to purposeful and accidental poisoning. The plant presently cultivated all over the world as an ornamental plant and medicinal herb. Alkaloid, glycosides, phenol, saponin, steroids, and tannin are present in the methanol extract of G. superba. The efficiency of antimicrobial activity from the aqueous and methanol, chloroform, hexane extracts of tuber was screened by agar diffusion method against gram-negative bacteria. The cold aqueous extract showed maximum inhibition zone of 16.8±0.2 mm in100% and13.4±0.4 mm in 50% concentrations against S. aureus. The methanol extract showed better inhibition zone of 30.2±0.1 mm in 2.5 mg mL^{-1} against S. maltophilia; 25.5±1.0 mm in 20 mg mL^{-1} against P. maltophilia and 22.6±1.4 mm in 10 mg mL^{-1} against B. megaterium. The antimicrobial effect of crude tuber extracts is better than standard antibiotic drugs ampicillin (10 mcg) and tetracycline (30 mcg). The ampicillin has shown low inhibit zone against all the organism and did not show any inhibitory effect against A. veronii and P. aeruginosa, but the Tetracycline showed a better inhibitory effect against both gram-positive and negative organism.

Graphical Abstract



Keywords: *Gloriosa superba*, Antimicrobial activity, Phytochemicals.