

Antimicrobial activity of *Morus alba* L.

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Antibacterial activity of methanol, ethanol and water extract of the stem of *Morus alba* L. belonging to the family Moreaceae was studied. The extract was extracted by soxhlet apparatus. The effect of the extracts against 15 bacterial and one fungal strains was tested by filter paper disc diffusion technique. Out of the three extracts, the ethanol extract was found to be more effective with all the bacteria and fungi.

Key words : Antibacterial, *Morus alba*, Methanol, Ethanol, Water.

The *Morus alba* L (Family : Moreaceae) is a short-lived, fast-growing, small to medium sized tree to 10–20 m tall, native to northern China, and widely cultivated elsewhere. It is commonly called Mulberry. The plant is used to treat fever, headache, red dry and sore eyes, as well as cough. The leaves are used to promote sweating, and the branches and bark for lowering blood pressure. It is also said that Mulberry can inhibit the premature graying of hair, and when used topically can promote hair growth. Mulberry can help treat chronic diseases of the digestive tract, improve digestion, stimulate the appetite, promote gastric juice secretion and eliminate constipation. It has also been used in treating chronic gastritis and hepatitis. It is helpful in cough, dyspepsia, facial dropsy, oedema injury and Oliguria. Ali and Azhar (1999) studied antimicrobial activity of some *Caesalpiniaceae* members. The antimicrobial activity of *Croton mucronifolius* and *C. triangularis* was determined by Lemos and Monte (1992). Padma Singh and Pratima Karnwal (2006) studied on antifungal activity of cassia fistula leaf extract against *Candida albicans*. Prasad *et al.* (2006) screened antibacterial activity against 59 plants (15). However, there is no report on the antimicrobial activity of *Morus alba* L. The present investigation was, therefore, undertaken to evaluate the antagonistic potential of the leaf and stem extracts of *Morus alba* L. against gram positive, gram negative bacteria and one fungus (human pathogens).

Antibiotic sensitivity test was employed to know the antimicrobial nature of the selected plants (Benson, 1990). The matured plant leaf and stem were collected from the area around the Acharya Nagarjuna University campus, dried in shade and crushed in a mortar. The crushed stem was extracted with methanol,

ethanol and water for 24 hours using Soxhlet apparatus. The solvent was removed by air-drying and crude extract was used. Three different dilutions (Table 1) of the extract was prepared in Dimethyl Sulphoxide (DMSO).

The antimicrobial property was determined by standard paper disc diffusion assay on Nutrient Agar media for bacteria and Sabouraud Dextrose Agar media for fungi (Bauer *et al.*, 1966). Filter paper discs of 6mm diameter were sterilized, soaked in the extracts separately and placed at equidistance on the medium. The Petridishes were incubated at 37 degrees C for 24 hr for bacteria and 48 for fungi for the development of inhibitory zones. The activity was measured in terms of diameter of inhibition zone appearing around the filter paper discs saturated with stem extracts.

The extracts prepared in all three solvents showed activity against the 15 bacterial and 1 fungal species. Comparatively, in all the three dilutions (Table 1) of extract, ethanol was found to possess more antibacterial and antifungal activity than that of methanol and water.