**RESEARCH ARTICLE**

**IN VITRO CYTOTOXIC ACTIVITIES OF METHANOLIC EXTRACT OF MIMOSA PUDICA**

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The present research was conducted to investigate the cytotoxic activities of methanolic extract of plant of *Mimosa pudica*. Cytotoxic activity was evaluated using brine shrimp lethality bioassay. For the determination of cytotoxicity, seven different concentrations (80, 100, 200, 400, 600, 800 and 1000 µg/ml) of methanol extract of *Mimosa pudica* were used. LC₅₀ value of methanolic extract of *Mimosa pudica* was found to be 2.6621 µg/ml. Methanolic extract of *Mimosa pudica* showed lethality in a dose reliant conduct. More exclusively 0%, 10%, 30%, 50%, 80% and 100% mortality were observed at the concentration of 80, 100, 200, 400, 600, 800 and 1000 µg/ml, respectively. The brine shrimp lethality bioassay results suggest that the plant can be a promising source of anticancer compounds.

Key words: Cytotoxicity, Brine shrimp lethality bioassay, *Mimosa pudica*, Mimosaceae.

**INTRODUCTION**

In the absence of an efficient primary health care system, traditional medicine occupies a central place in the provision of health care especially among rural communities of developing countries. The strong historical bond between plants and human health is well substantiated by plant species diversity and related knowledge of their use as herbal medicines. Lately, the uses of herbal medicines are increasing rapidly in developed countries too. As therapeutic uses of plants continued with the progress of civilization and development of human knowledge, scientists endeavored to isolate different chemical constituents from plants, put them to biological and pharmacological tests and thus have been able to identify and isolate therapeutically active compounds, which have been used to prepare modern as well as herbal medicines (Nahak and Sahu, 2010). Literature has shown several cases indicating cytotoxic potential of natural and synthetic compounds from diverse sources (Dahiya and Gautam, 2011; Jain et al 2011).

*Mimosa pudica* (Chhui-mui or sensitive plant or touch-me-not), is a short lived ever green shrub which can be treated as an annual or perennial herb (Figure 1). Peculiar movement of leaflets that are sensitive to touch, makes it as an interesting plant (Ghani, 1998; Vaidyaratanm, 2001). Its fem like leaves close up and droop down whenever touched either by hand or by any object, living or non-living. It is due to the specific characteristics of its leaves that mimosa is regarded as a plant of high ornamental value. It grows to height of 5 ft and spreads around 3 ft. Leaves are bipinnate, sensitive to touch, pinnae 1-2 pairs, leaflets 10-20 pairs, linear, glabrous, 9-12 mm long and 1.5 mm wide. Flowers head small, penduncle up to 2.5 cm long, globose, axillary, pink, purple; calyx, campanulate; petals, crenate towards base. Pods 1.5-2.5 cm long, closely prickly on the sutures. Stems are red-brown prickly. Seeds are bristles on seep pod cling to fur and clothing about 2 mm broad rounded, brown.