

Phytochemical Screening and Cytotoxicity Activity of Methanolic Extract of *Butea monosperma* (Lam) Flower on Breast Cancer Cell Lines

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Abstract—Among the various types of cancer, breast cancer is the most prevalent disease leading to the death of women every year. Despite the huge development of chemical synthesis, approximately 25% of prescribed drugs worldwide are derived from plant sources, suggesting that plants are still an important source of new drugs for many diseases. The present work focuses on phytochemical analysis and cytotoxicity activity of methanolic extract of *Butea monosperma* (Lam) Taub flower. *Butea monosperma* plant is widely available in Jharkhand region. Healthy flowers of *Butea monosperma* were collected during blooming period of plants from the medicinal garden of BIT, Mesra. The methanolic extract has been prepared by cold maceration method. Qualitative and quantitative phytochemical analysis was done. Methanolic extract was evaluated for their anti-cancer activity against breast cancer cell lines SKBR3 and MDA-MB-231. Tumor cells were cultured in Dulbecco's Modified Eagles Medium and maintained by different passaging at 37° C in a humidified atmosphere of 5% CO₂. To validate the cytotoxicity, MTT has been performed. Results were expressed in cell viability. The research extended to the analysis of apoptosis and mode of mechanism of apoptosis by Annexin V staining and FACS. Further studies on the methanolic extract of *Butea monosperma* flower may lead to the isolation of novel bioactive compounds.

Keywords: *Butea monosperma* (Lam) Taub, SKBR3, MDA-MB-231, anti tumor activity, FACS, cell viability.