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Anti-metastatic activity of Albizia lebbeck stem bark extract against breast cancer cell lines

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Breast cancer is the most usual cancer type and second most frequent cause of death among women worldwide. The incidence of breast cancer is still increasing because of irresponsive treatments. *Albizia lebbeck* is an important plant with medicinal properties and cultivated in different part of the world mainly the tropical and subtropical regions. Cytotoxicity, anti-proliferation and anti-metastatic potential of *A. lebbeck* methanolic extract was studied in MDA-MB 231 and MCF-7 cell models using tryphan blue, MTT and wound heal assay and organic composition of the plant was analyzed using gas chromatography-mass spectrometry (GC-MS). Both cells were treated with different concentrations ranging from 2.5 to 200 µg/mL and different incubation periods (24, 48 and 72 hours). Cytotoxicity and anti-proliferative effect of the extract on MDA-MB 231 and MCF-7 cell were found to be both concentration and time dependent. Lower concentration of the extract 2.5, 5.0 and 10.0 µg/mL showed no effect on cytotoxicity and proliferation of the cell lines and higher concentrations revealed significant effect with increasing concentrations when compared with the control group. The plant extract also revealed high anti-metastatic effect which is found to be concentration dependent as well. Important bioactive compounds were also identified from *A. lebbeck* metanolic extract, which might be responsible for anti-metastatic potential of the plant and it could be a promising tool for prevention of cancer metastasis.

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