

**Screening the effect of different extraction methods for callus extracts of cassava (*Manihot esculenta*) plants using polar and non polar solvents as anti-breast cancer cell growth****Nermeen M Arafa**

National Research Centre, Egypt

Cassava (*Manihot esculenta*) is a major industrial crop which is rich in lot of therapeutic applications such as antitumor activity. Leaf, stem and petiole of cassava in vitro plantlets were cultured on solid MS-medium containing different combinations and concentrations of 2,4-D, picloram or NAA as auxins and BA as cytokinins. Stem was chosen as the best explant for callus induction, stem derived calli (25.892±0.117 g) on the best selected medium for callus production (5 mg/l 2,4-D and 0.2 mg/l BA) with subculture intervals each 40 days of culture. The phytochemical components such as fatty acids and their ester derivatives constituents were extracted from calli of cassava using different solvents, ethylacetate as aprotic polar solvent, chloroform and hexane as non-polar solvent to examine the efficiency of these extracts for inhibition the growth of the breast cancer cell. All extracts recorded positive results for inhibition cancer cell proliferation. Ethylacetate extracts have maximum efficiency for inhibition breast cancer (2.63 ug IC50), followed by hexane extracts (3.44 ug IC50) and then chloroform extracts (6 ug IC50) recorded the least value. The objective of this study was analyzed the composition of lipid profile components for ethylacetate extract, chloroform extract and hexane extract by GC-Mass and determine the efficiency of these extracts as anti-breast cancer cell growth. Ethylacetate extracts showing higher concentration of the total fatty acids (76.53%), also, included caprylic acid (14.52%) and caproic ester (3.10%), while that hexane and chloroform extracts recorded less values of total fatty acids (69.26% and 39.77%, respectively) and recorded no value of both of caprylic acid and caproic ester. Therefore it could be recommended to use ethylacetate as aprotic solvent for the extraction of calli, as including most amounts of fatty acids and their derivatives compounds due to the most effect as anti-breast cancer.

**Biography**

Nermeen M Arafa has completed her PhD from Faculty of Agriculture, Cairo University and Postdoctoral studies from National Research Center, Egypt. She has published three papers in reputed journals.

[nermeenfouad87@yahoo.com](mailto:nermeenfouad87@yahoo.com)**Notes:**