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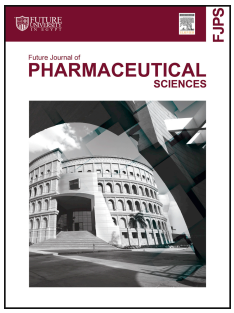

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Bioassay guided fractionation and cytotoxic activity of *Daucus carota* var. *boissieri*

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Abstract

The hexane extract and the hydro-distilled essential oil from red carrot fruits (*Daucus carota* var. *boissieri)* were evaluated for their cytotoxic activity against human tumor breast cell lines (MCF-7). Cell viability was evaluated by MTT assay. The extract exhibited good cytotoxic activity shown through its low IC_{50} (9.12±0.58µg/ml) against the standard 5-Flououracil (8.46±0.63µg/ml). Phytochemical investigation of the hexane extract using column chromatography yielded three compounds; 8-methoxypsoralen **(1)** , α-asarone **(2)** and 3,4,5-trimethoxy-benzaldehyde **(3)**, a compound isolated for the first time from *D. carota* and from family Apiaceae. Structure elucidation of the isolated compounds was carried out on the basis of their spectral data analysis (IR, MS, ^{1}H-NMR an ^{13}C-NMR) The three isolated compounds were evaluated for their cytotoxic activity using the same conditions. Only compound **(1)** exhibited good cytotoxic activity (IC_{50}; 9.38±0.78µg/ml), compound **(2)** had moderate activity (46.12±1.31µg/ml), while compound **(3)** had no cytotoxic activity (100.6±3.11µg/ml). These compounds need to be more investigated against other cell lines; also they are considered as a good substrate for future SAR study and modifications to produce more potent cytotoxic derivatives.