

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 hexane extract (0.58 g/ml) and the hydro-distilled essential oil (0.2085 g/ml) were evaluated for their cytotoxic activity against MCF-7 cell lines. Phytochemical investigation of the hexane extract using column chromatography yielded three compounds; 8-methoxypsoralen (1), /asarone (2) and 3,4,5-trimethoxybenzaldehyde (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, ¹H NMR and ¹³C NMR). The three isolated compounds were evaluated for their cytotoxic activity using the same MTT assay. Compound 1 (0.32208 g/ml), compound 2 (0.68034 g/ml), while compound 3 (0.3053 g/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.

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