

Cytotoxic Metabolites from *Tagetes minuta* L. Growing in Saudi Arabia

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Abstract : Phytochemical investigation of the methanolic extract of aerial parts of *Tagetes minuta* L. (Family: Asteraceae) using different chromatographic techniques led to the isolation of five compounds; ecliptal (1), scopoletin (2), P-hydroxy benzoic acid (3), patuletin (4), and patuletin-7-O- β -D-glucopyranoside (5) (Figure 1). Their structures were established based on physical, chemical, and spectral data [Ultraviolet (UV), Proton ^1H , Carbon thirteen ^{13}C , and Heteronuclear Multiple Bond Correlation (HMBC) NMR], as well as Electrospray Ionization Mass Spectroscopy (ESIMS) and comparison with literature data. Their cytotoxic activity was assessed towards human liver hepatocellular carcinoma (HepG2), human breast cancer (MCF-7), and human colon cancer (HCT116) cancer cell lines using sulphorhodamine B (SRB) assay. It is noteworthy that compound 1 demonstrated a significant cytotoxic potential towards HepG2, MCF7, and HCT116 cells with IC_{50} s ranging from 2.74 to 7.01 μM , compared to doxorubicin (IC_{50} 0.18, 0.60, and 0.20 μM , respectively), whereas compounds 2, 4, and 5 showed moderate cytotoxic potential with IC_{50} s ranging from 11.71 to 35.64 μM . However, 3 was inactive up to a concentration of 100 μM towards the three tested cancer cell lines.

Keywords : Asteraceae, cytotoxicity, metabolites, *Tagetes minuta*

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