

Effect of the Method of Preparation on the Composition and Cytotoxic Activity of the Essential Oil of *Pituranthos tortuosus*

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The aerial parts of *Pituranthos tortuosus* (Desf.) Benth and Hook (Apiaceae), growing wild in Egypt, yielded 0.8%, 0.6%, and 1.5% (v/w) of essential oil when prepared by hydro-distillation (HD), simultaneous hydrodistillation-solvent (*n*-pentane) extraction (Lickens-Nickerson, DE), and conventional volatile solvent extraction (preparation of the “absolute”, SE), respectively. GC-MS analysis showed that the major components in the HD sample were -myrcene (18.81%), sabinene (18.49%), *trans*-*iso*-elemicin (12.90%), and terpinen-4-ol (8.09%); those predominant in the DE sample were terpinen-4-ol (29.65%), sabinene (7.38%), -terpinene (7.27%), and -myrcene (5.53%); while the prominent ones in the SE sample were terpinen-4-ol (15.40%), dill apiol (7.90%), and *allo*-ocimene (4*E*,6*Z*) (6.00%). The oil prepared in each case was tested for its cytotoxic activity on three human cancer cell lines, *i.e.* liver cancer cell line (HEPG2), colon cancer cell line (HCT116), and breast cancer cell line (MCF7). The DE sample showed the most potent activity against the three human cancer cell lines (with IC₅₀ values of 1.67, 1.34, and 3.38 µg/ml against the liver, colon, and breast cancer cell lines, respectively). Terpinen-4-ol, sabinene, -terpinene, and -myrcene were isolated from the DE sample and subjected to a similar evaluation of cytotoxic potency; significant activity was observed.

Key words: *Pituranthos tortuosus*, Cytotoxic, Terpinen-4-ol