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The anticancer activity of five species of Artemisia on Hep ٢ and HepG ٢ cell lines

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Abstract

It has been reported that several Artemisia species (Astraceae) possess cytotoxic activity against different human cell lines. In this study, the toxicity of the A. kulbadica, A. sieberi, A. turanica, A. santolina and A. diffusa against human Caucasian hepatocyte carcinoma (HepG-٢) and human Caucasian larynx carcinoma (Hep-٢) cell lines have been investigated. These plants were collected from Khorasan province, northeast of Iran. Different concentrations (٢٠٠, ٤٠٠, ٦٠٠, ٨٠٠, ١٠٠٠, ١٢٠٠, ١٦٠٠ and ٣٢٠٠ µ g/mL) of ethanol extract of each sample were prepared. The cytotoxic effects of these concentrations against two human tumor cell lines Hep٢ and HepG٢ were determined by quantitative MTT assay. Results showed concentration- and time-dependent toxicity. In all extracts, toxic effects were significantly higher on HepG٢ cells compared with Hep٢ cells. HepG٢ cells are rich in phase I and phase II metabolic enzymes and it is probable that metabolic activation of some active ingredients of the extracts were converted to more toxic metabolites and caused more toxicity in these cells.

Reaxys Database Information

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Author keywords

Artemisia spp.; Hep٢; Hepatotoxicity; HepG٢; MTT assay

Indexed Keywords

EMTREE drug terms: ٣ (٤،٥ dimethyl ٢ thiazolyl) ٢،٥ diphenyltetrazolium bromide; alcohol; antineoplastic agent; Artemisia diffusa extract; Artemisia kulbadica extract; Artemisia santolina extract; Artemisia sieberi extract; Artemisia turanica extract; plant extract; unclassified drug

EMTREE medical terms: antineoplastic activity; Artemisia; Artemisia diffusa; Artemisia kulbadica; Artemisia santolina; Artemisia sieberi; Artemisia turanica; article; cancer cell culture; cell strain hep٢; cell strain HepG٢; concentration response; controlled study; drug cytotoxicity; enzyme linked immunosorbent assay; human; human cell; larynx carcinoma; liver carcinoma; metabolic activation; quantitative analysis; species difference

Chemicals and CAS Registry Numbers: ٣ (٤،٥ dimethyl ٢ thiazolyl) ٢،٥ diphenyltetrazolium bromide, ٢٩٨-٩٣-١; alcohol, ٦٤-١٧-٥

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