

The cytotoxicity evaluation of seven species of *Artemisia* on human tumor cell lines

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Abstract

It has been reported that several *Artemisia* species possess cytotoxic activity against different human cell lines . In this study, the toxicity of the *A. annua*, *A. campestris*, *A. chamaemelifolia*, *A. fragrans*, *A. incana*, *A. persica*, and *A. vulgaris* against human Caucasian hepatocyte carcinoma (HepG-2) and human Caucasian larynx carcinoma (Hep-2) cell lines have been investigated. Three species of these plants were collected from Golestan and Northern Khorasan provinces, northeast of Iran and the others from Eastern Azerbaijan province, northwest of the country. Different concentrations (20, 50, 100, 200, 400, 800, 1600 and 3200 µg/mL) of ethanol extract of each sample were prepared. The cytotoxic effects of these concentrations against two human tumor cell lines, HepG-2 and Hep-2 were determined by quantitative MTT assay. The extracts showed significant concentration-dependent toxicity. They showed more toxicity on HepG-2 compared with Hep-2. As HepG-2 cells contain high amounts of metabolizing enzymes, it seems that the active ingredients of the extracts are converted to more toxic metabolites as a result of hepatic metabolism.

Author keywords

Artemisia spp.; Astraceae; Cytotoxicity; Hep-2; HepG-2; MTT assay

Indexed Keywords

EMTREE drug terms: alcohol; *Artemisia annua* extract; *Artemisia campestris* extract; *Artemisia chamaemelifolia* extract; *Artemisia fragrans* extract; *Artemisia incana* extract; *Artemisia persica* extract; *Artemisia vulgaris* extract; plant extract; unclassified drug

EMTREE medical terms: *Artemisia*; *Artemisia campestris*; *Artemisia chamaemelifolia*; *Artemisia fragrans*; *Artemisia incana*; *Artemisia persica*; article; cell assay; cell specificity; cell strain HepG2; concentration response; controlled study; drug cytotoxicity; HEP 2 cell; human; human cell; IC 50; Iran; larynx carcinoma; liver cell carcinoma; liver metabolism; nonhuman

Chemicals and CAS Registry Numbers: alcohol, 74-11-0

ISSN: 1827862 • **Source Type:** Journal **Original language:** English

Document Type: Article