

Cancer chemopreventive activity of terpenoid coumarins from *Ferula* species

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Abstract

Several natural products have been found to have anti-tumor promoting activity. In the present study, we carried out a primary screening of ten terpenoid coumarins isolated from plants of the *Ferula* species, examining their possible inhibitory effects on Epstein-Barr virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol 13-acetate (TPA) in Raji cells. Auraptene (γ -geranyloxycoumarin, 1) and umbelliprenin (γ -farnesylloxycoumarin, 2) were found to significantly inhibit EBV-EA activation and preserved the high viability of Raji cells, suggesting that they might be valuable anti-tumor-promoting agents (IC₅₀ 1.8, 2 and 1.1 nM, respectively). Our findings revealed that the presence of a prenyl moiety in the terpenoid coumarins plays an important role in anti-tumor promoting activity as previously reported for xanthenes, coumarins, flavonoids and phenylpropanoids. © Georg Thieme Verlag KG Stuttgart.

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Author keywords

Anti-tumor promoting effect; Apiaceae; Cancer chemoprevention; Epstein-Barr virus activation assay; *Ferula*; Terpenoid coumarins

Indexed Keywords

EMTREE drug terms: antineoplastic agent; auraptene; badrakemone; beta carotene; conferone; coumarin derivative; curcumin; early antigen; Epstein Barr virus antigen; farnesiferol a; ferukrinone; feselol; galbanic acid; herniarin; methylgalbanate; mogoltacin; phorbol 12 acetate 13 myristate; umbelliprenin; undclassified drug

EMTREE medical terms: antineoplastic activity; article; cancer prevention; cell viability; chemoprophylaxis; controlled study; drug effect; drug isolation; drug mechanism; drug screening; Epstein Barr virus; fennel; *Ferula badrakema*; *Ferula flabelliloba*; *Ferula persica*; *Ferula szowitsiana*; human; human cell; IC₅₀; medicinal plant; Raji cell

MeSH: Anticarcinogenic Agents; Cell Line, Tumor; Coumarins; *Ferula*; Herpesvirus 8, Human; Humans; Lymphoma, B-Cell; Plant Extracts; Terpenes

Medline is the source for the MeSH terms of this document.

Species Index: Apiaceae; *Ferula*; Human herpesvirus 8