

عنوان مقاله:

Cytotoxic and apoptogenic effects of *Dracocephalum kotschy* Boiss., extracts against human glioblastoma U87 cells

محل انتشار:

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خلاصه مقاله:

Objective: Glioblastoma multiforme (GBM) is the most aggressive and malignant brain tumor and has a poor prognosis. This study was aimed to investigate the cytotoxic effects of *Dracocephalum kotschy* Boiss. (*D. kotschy*) extracts in GBM U87 cell line. **Materials and Methods:** The extracts of *D. kotschy* obtained by two different ways of Soxhlet and soaked. The cytotoxic effects of *D. kotschy* extracts were measured using MTT assay following treatment for different times of exposure (24, 48, and 72 hr) and at different concentrations of *D. kotschy* extracts. The effects of *D. kotschy* extracts on cellular oxidative stress were also evaluated by measuring cellular ROS levels. Furthermore, cellular death and apoptosis were studied by sub G1 analysis and Annexin V-FITC/propidium iodide (PI) staining using flow cytometry method, respectively. Characterization of the extracts was carried out using gas chromatography/mass spectrometry (GC/MS) analysis by Agilent GC-MSD system. **Results:** Our results indicated that *D. kotschy* extracts decreased U87 cell viability in a time- and dose-dependent manner. Moreover, treatment with *D. kotschy* extracted by Soxhlet for 24 and 48 hr significantly increased the levels of cellular ROS and Sub G1 population (p *D. kotschy* mainly consisted of β -caryophellene, α -pinene and limonene. **Conclusion:** Our findings demonstrated that *D. kotschy* extracts can exert cytotoxic effects against GBM U87 cell line in a time- and concentration-dependent manner, and these effects may be mediated through intracellular ROS accumulating. However, further studies should be performed to confirm the efficacy and exact mechanism of action of the extracts

کلمات کلیدی:

Dracocephalum kotschy Boiss, GC/MS, Glioblastoma, Oxidative stress

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