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Cytotoxic effects of essential oil and different extracts of *Pulicaria gnaphalodes* Bioss. on a panel of cancer cells

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Background: Several natural compounds have been identified for the treatment of malignancies. Due to a few safe drugs and the side effects caused by available chemotherapeutic agents, new drugs for the treatment of malignancies are request. The genus *Pulicaria* (*Compositae)* is represented in the flora of Iran by five species. Phytochemical studies have revealed that some compounds obtained from *Pulicaria* species have shown cytotoxic activity.

Objectives: The aim of this study was to evaluate the *in vitro* cytotoxic activity of different extracts and essential oil of *Pulicaria gnaphalodes* against HeLa, K562 and MDA-MB-468 cancer cell lines.

Materials and Methods: Methanol, petroleum ether and dichloromethane in different dilutions were used for extraction. Essential oil of this plant was obtained and its composition was evaluated by GC-MS. Different concentrations of extracts and essential oil were tested against 3 mentioned cancerous cell lines, using MTT assay.

Results: In this experiment, extracts and essential oil of *P. gnaphalodes* progressively inhibited cancer cells growth at final concentrations ranging from 0.625 to 2.5 mg/ml for extracts and 0.1 to 0.5 µl/ml for essential oil in 24 hours exposure. The cytotoxic effect in all 3 tested cell lines were concentration dependent.

Conclusions: Considering *P. gnaphalodes* cytotoxic activity, it was concluded this plant could be a good candidate for isolation of antiproliferative compounds which could serve as new lead structures for drug development.

Biography

Mina Mirian is Ph.D. student, member of Isfahan University of Medical Sciences, Isfahan, Iran. She is one of the researcher members of cell culture lab in Biotechnology Department, Faculty of Pharmacy, Isfahan University of Medical Sciences, Iran. She has published more than10 papers in reputed journals and 2 books.

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