



Cytotoxic activity of plants from East Azarbaijan province, Iran

M. Irani, R. Shahrestani, B. Bahmani, S. Esmaeili, N. Nader*

Traditional Medicine and Materia Medica Research Center, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

Background and objectives: Due to the high cancer mortality rates and side effects of different types of cancer treatments, discovering effective treatments without or with fewer side effects is the main purpose of many researchers all around the world. Plants play an important role in the discovery of new drugs. Iran owns rich and varied vegetation but the majority of these plants have not yet undergone chemical, pharmacological and toxicological studies. In the present study, some species from East Azarbaijan province of Iran were evaluated for cytotoxicity effects. **Methods:** Total methanol extract of 29 plants from 18 families were screened for their cytotoxic activities. The inhibition of cell growth for these extracts was evaluated against MCF-7, A-549, Hep-G2, HT-29 and MDBK cell lines. Their 50% inhibitions of growth (IC_{50}) were determined by MTT assay. Moreover, cytotoxic evaluation of different fractions (ether de petrol, chloroform and methanol) of the most potent species was performed. **Results:** Total extracts and fractions of *Bryonia aspera*, *Centaurea salicifolia*, *Cuscuta chinensis*, *Ecbalium elaterium*, *Gypsophila ruscifolia*, *Ononis spinosa* exhibited potent cytotoxic activity against one or more of the cell lines. Three of the mentioned total extracts presented cytotoxicity effects exclusively against HT-29 cells. Also three fractions (one ether de petrol and two chloroform fractions) demonstrated selective cytotoxicity effects against MCF-7 cells. **Conclusion:** It was concluded that these 6 potent species were proper candidates for identification and isolation of active ingredients with cytotoxic effects and further studies about these species are recommended.

Keywords: Azarbaijan, cytotoxicity, medicinal plants