

Screening of Potential Cytotoxic Activities of Some Medicinal Plants of Saudi Arabia

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Abstract : Phytochemicals from plant extracts belong to an important source of natural products which have demonstrated excellent cytotoxic activities. However, plants of different origins exhibit diverse chemical compositions and bioactivities. Therefore, the discovery of plants based new anticancer agents from different parts of the world is always challenging. In this study, methanolic extracts of different parts of 11 plants from Saudi Arabia have been tested in vitro for their anticancer potential on human liver cancer cell line (HepG2). Particularly, for this study, plants from Asteraceae, Resedaceae, and Polygonaceae families were chosen on the basis of locally available ethnobotanical data and their medicinal properties. Among 12 tested extract samples, three samples obtained from *Artemisia monosperma* stem, *Ochradenus baccatus* aerial parts, and *Pulicaria glutinosa* stem have demonstrated interesting cytotoxic activities with a cell viability of 29.3%, 28.4% and 24.2%, respectively. Whereas, four plant extracts including *Calendula arvensis* aerial parts, *Scorzonera musilii* whole plant, *A. monosperma* leaves show moderate anticancer properties bearing a cell viability ranging from 11.9 to 16.7%. The remaining extracts have shown poor cytotoxic activities. Subsequently, GC-MS analysis of methanolic extracts of the four most active plants extracts such as *C. comosum*, *O. baccatus*, *P. glutinosa* and *A. monosperma* detected the presence of 41 phytomolecules. Among which 3-(4-hydroxyphenyl) propionitrile (1), 8,11-octadecadiynoic acid methyl ester (2), 6,7-dimethoxycoumarin (3), and 1-(2-hydroxyphenyl) ethenone (4) were found to be the lead compounds of *C. comosum*, *O. baccatus*, *P. glutinosa* and *A. monosperma*, respectively.

Keywords : medicinal plants, asteraceae, polygonaceae, hepg2

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