Abstract

Background: Plants were used in medicine thousands of years ago, from which conventional medicine raised and there are many of the recently in traditional Palestinian used drugs extracted from plants. *Alhagi graecorum* Boiss. plant is used for the treatment of cancer in traditional Palestinian medicine. For that, our study aimed to isolate five solvents fractions of the plant, identify their chemical composition and to evaluate their cytotoxic activities.

Methods: The successive solvent extraction method was used to isolate five solvents fractions of *A. graecorum*. While the Gas Chromatography-Mass Spectrophotometry was used to characterize quantitatively and qualitatively the chemical components of these extracts. The cytotoxic activity was assessed using 3-(4,5-dimethylthiazol-2-yl)-5-(3-carboxymethoxyphenyl)-2-(4-sulfophenyl)-2H-tetrazolium) (MTS) assay against HeLa cancer cell line.

Results: A total of 165 compounds were identified in different extracts, while in the petrolatum ether extract was found a total of 55 compounds, and the major compounds were 2,5-cyclooctadien-1-ol (9.42%), 3-chloropropionic acid, heptyl ester (9.42%), carbonic acid, ethyl nonyl ester (9.42%) and chloroacetic acid, heptyl ester (9.42%). In methylene chloride was found a total of 11 compounds, and the major compounds were m-ainobenzenesulfonyl fluoride (14.35%), dodecane,2,6,10-trimethyl- (14.35%) and propanoic acid,2,2-dimethyl-,2-ethylexyl ester (14.35%). In chloroform was found a total of 23 compounds and the major compounds were 5-ethyl-1-nonene (21.28%), decanedioic acid, bis(2-ethylhexyl) ester (21.28%), 1-heptacosanol (5.60%), dotriacontyl pentafluoropropionate (5.60%) and hexacosanol, acetate (5.60%). In acetone was found a total of 47 compounds and the major compounds were phenol,2,4-bis(1,1-dimethylethyl)- (5.22%), 5-eicosene (4.21%), 9-eicosene (4.21%) and dichloroacetic acid and 4-hexadecyl ester (4.21%). In methanol was found a total of 29 compounds and the major compounds