



Malays. Appl. Biol. (2015) 44(4): 47-58

ANALYSIS OF BIOACTIVE PHYTOCHEMICAL COMPOUNDS OF TWO MEDICINAL PLANTS HORSETAIL *Equisetum arvense* AND *Alchemilla vulgaris* SEEDS BY USING GAS CHROMATOGRAPHY-MASS SPECTROMETRY AND FOURIER-TRANSFORM INFRARED SPECTROSCOPY

HUDA JASIM ALTAMEME ¹, IMAD HADI HAMEED ^{*1}, NIDAA ADNAN ABU-SERAG²

¹Department of Biology, Babylon University ,Hilla ,Iraq

²Department of Biology, College of Science, Babylon University, Hilla City, Iraq

*Corresponding author: Imad H. Phone number: 009647716150716, E-mail: imad_dna@yahoo.com

ABSTRACT

Twenty five bioactive phytochemical compounds were identified in the methanolic extract of *Equisetum arvense*

and

Alchemilla vulgaris

. The identification of phytochemical compounds is based on the peak area, retention time, molecular weight and molecular formula. GC

/

MS analysis of

Equisetum arvense

revealed the existence of the Cyclohexene, 4-isopropenyl-1-methoxymethyl, β -D-Glucopyranoside, O- β -D-Glucopyranosyl, Paromomycin, 3,6,9,12-Tetraoxatetradecan-1-ol, Bicyclo[3.2.1]oct-6-ene-6,8-dimethanol, 1,7-dimethyl-4-isopropyl, 2-Undecanone, 3-N,N-Dimethylaurilammonio) propanesulfonate, d-Mannose, 3-O-Methyl-d-glucose, 9,10-Secocholesta-5,7,10(19)-triene-3,24,25-triol, Benzaldehyde, 2-chloro-4-hydroxy-3, Cyclopropa[3,4]cyclopenta [1,2-a]naphthalene, Furo[2,3-b]quinoline, 4,6,7-trimethoxy, 2(1H)-Phenanthrenone.

GC

/

MS analysis of

Alchemilla vulgaris

revealed the existence of the Levoglucosenone, Spirost-8-en-11-one, 3-hydroxy, Ethanol, 2-(9-Octadecenyloxy), 2,7-Diphenyl-1,6-dioxopyridazino[4,5:2,3]pyrrolo, Estra-1,3,5(10)-trien-17 β -ol, Octadecanal, 2-bromo, Ethyl 9,12,15-octadecatrienote, 3-Pyridinecarboxylic acid, 2,7,10-tris(acetyloxy)-1, 5H-Cyclopropa[3,4]benz[1,2-e]azulen-5-one, Stigmastan-3,5-diene and Tocopherol. It contains chemical constitutions which may be useful for various herbal formulations as anti-inflammatory, analgesic, antipyretic, cardiac tonic and antiasthmatic. The FT-IR analysis of both

Equisetum arvense

and

Althaea rosea

seeds proved the presence of Alkenes, Aliphatic fluoro compounds, Alcohols, Ethers, Carboxylic acids, Esters, Nitro Compounds and Alkanes.

Keywords: *Alchemila vulgaris*, *Equisetum arvense*, FT-IR, Gas chromatography-mass spectrometry, Phytochemicals.