



Gas Chromatography-Mass Spectrometry Analysis of Pomegranate Stem Bark

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The objective of the experiment was to analyse the chemical components in stem bark of pomegranate. The extract was prepared by soxhlet apparatus using methanol as solvent during 8 hours. A Varian GCMS-QP2010 Ultra system was applied to detect the volatile chemical components of the extract sample. The sample after dilution was introduced into the ion trap Mass Spectrometer. Identification of the chemical compounds was taken place by retention time and using of database of National Institute of Standards and Technology (NIST08). GC-MS chromatogram revealed the presence of forty-nine peaks indicating the presence of 50 chemical constituents one of them related to the GC MS stationary phase. Some of these components might be biologically active and valuable in aspect of antiglycation ability or other beneficial activities. The most abundant volatile phytochemical constituents were pyrrolidine alkaloids 7.25% [(1,2-dimethylpyrrolidine and 1-ethyl-2-pyrrolidinyl) methanol] pyrrolidinemethanamine, 1-ethyl-), pseudopelletierin (2.92%) , dodecanamine (13.9%), decanoate group, (18.99%), hexadecanoic acid (2.01%), butyloctadecanoate (0.94%), undecane (0.9%), oxacycloheptadec-8-en-2-one (1.25%), heptadecanoic acid (1.61%), cyclotetradecanone oxime 2.16%, hydrocarbons (pentacosane, docosane, heneicosane, pentacosane, docosane, docosanoic acid, hexacosane, docosanoic acid) 22.14%, 2,3-diphenylcyclopropyl) methyl phenyl sulfoxide (15.73%), triacontane (4.46%), benzenemethanamine (1.74%), phthalic acid (1,2-benzenedicarboxylic acid) 3.99%. Similarly, several compounds of pomegranate were formerly identified through GC-MS such as undecane, n-hexadecanoic acid, octadecadienoic acid, decanoic acid, tetra decanoic acid or n-hexadecanoic [1]. There are two major alkaloids in root and stem bark including piperidine and pyrrolidines. In the present experiment both of the alkaloids were detected in the sample.

Keywords: Pomegranate, Stem bark, GC-MS, Piperidine, Pyrrolidines

References

[1] Growther, L.; Sukirtha, K.; N., S.; Niren A. S. **2012**. *Int. J. LifeSc. Bt & Pharm. Res.*