

**A129 Investigation of phenolic constituents of *Nepeta septemcrenata* and their biological activity**K.A. Abd El Shafeek<sup>a</sup>, A.H. Husseny<sup>a</sup>, M.M. El Missiry<sup>a</sup>, S.A. Nada<sup>b</sup> and M.M. Seif ElNasr<sup>a</sup><sup>a</sup> National Research Center, Pharmacognosy and Chemistry of Medicinal Plants Department, Cairo, Egypt. <sup>b</sup> National Research Center, Pharmacology Department, Cairo, Egypt.

The genus *Nepeta* (family Labiateae) is represented in Egypt by only one endemic (1) species known as *N. septemcrenata* Ehrenb. The aerial parts collected from north Sinai were air-dried, defatted with petroleum ether and extracted with aqueous methanol (80%). The alcoholic extract was partitioned with successive portions of chloroform and ethyl acetate. Six phenolic compounds were isolated using different chromatographic techniques (CC, PPC and PTLC). ferulic acid, caffeic acid, genkwanin and thymusin (2,3) from the chloroform extract, while vicenin-2 and thymusin 6-O-glucoside (4,5) from the ethyl acetate extract. All of them were identified using different spectroscopic techniques (UV, MS and NMR). This is the first report about the phenolic constituents of *N. septemcrenata*.

The toxicity of the defatted alcoholic extract was studied by intraperitoneal injection (i.p.) (6) to rats. The LD<sub>50</sub> was found to be 421.8 mg/kg also the i.p. injection in conc.=1/20 LD<sub>50</sub> produced a reduction in cholesterol and triglyceride levels. In addition, the study of the antimicrobial activity of the different extracts (80% aqueous methanol, chloroform, ethylacetate) and the isolated ferulic acid against some selected microorganisms (Gr<sup>+</sup>, Gr<sup>-</sup>, yeast and fungi) was done using the diffusion method and measuring the inhibition zone (7). The results revealed that the chloroform extract had the higher activity against *Staphylococcus aureus* and the ethyl acetate extract had the higher activity against *Escherichia coli* and *Saccharomyces cerevisiae*. The isolated ferulic acid showed only antifungal activity against *Aspergillus niger*.

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**A130 Antimicrobial activity of volatile oil and lipids of *Nepeta septemcrenata***K.A. Abd El Shafeek<sup>a</sup>, A.H. Husseny<sup>a</sup>, M.M. El Missiry<sup>a</sup>, A.A. Hamdy<sup>b</sup> and M.M. Seif ElNasr<sup>a</sup><sup>a</sup> National Research Center, Pharmacognosy and Chemistry of medicinal plants Department, Cairo, Egypt. <sup>b</sup> National Research Center, Chemistry of Natural and Microbial Products Department, Cairo, Egypt.

The genus *Nepeta* (family Labiateae) is represented in Egypt by only one endemic species: *N. septemcrenata* Ehrenb. (1). The fresh aerial parts collected from northern Sinai (St. Cathren region) at the end of August were subjected to steam distillation (2) to give a pale yellow oil having characteristic odor (0.26% v/w). The GC/MS analysis of the oil revealed the presence of a mixture of 56 compounds with nepetalactone as the major one (53.65%).

The air-dried powdered plant was extracted with petroleum ether. The extract was dissolved in hot acetone, the acetone insoluble fraction was dissolved in chloroform and crystallized in methanol to give the fatty alcohols as white bright crystals. The GC/MS of the fatty alcohols mixture revealed the presence of hexacosanol (12.24%), heptacosanol (4.95%), octacosanol (34.78%), nonacosanol (7.16%), triacontanol (27.04%), hentriacontanol (3.89%) and dodetriacontanol (9.91%).

The acetone soluble fraction was saponified. The GLC analysis of the unsaponifiable fraction revealed the presence of n-alkanes mixture (C13-C30, 37.12%), lupeol (30.77%),  $\alpha$ -amyrin (0.29%), squalene (4.88%),  $\beta$ -amyrin (3.11%),  $\beta$ -sitosterol (5.01%) and stigmasterol (3.17%). The saponifiable fraction was methylated to afford the corresponding fatty acid methyl esters which were identified using GLC analysis as tridecanoic (1.16%), myristic (2.13%), palmitic (28.39%), margaric (1.42%), oleic (12.48%), linoleic (9.87%), linolenic (8.35%), arachidic (13.02%) and behenic acids (12.96%). The unsaturated fatty acids constitute 30.7% and the saturated 69.3%.

The antimicrobial activity of the different fractions (volatile oil, fatty alcohols, unsaponifiables and fatty acids) was studied against some selected microorganisms (Gr<sup>+</sup>, Gr<sup>-</sup>, yeast and fungi) using the diffusion method and measuring the inhibition zone (3). The results revealed that the fatty acids fraction has the highest activity against *Staphylococcus aureus*, the unsaponifiable fraction has high activity against *Aspergillus niger*, the volatile oil has moderate activity against the all tested organisms and the fatty alcohol fraction showed no activity.

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