

A257 Phytochemical and biological activity investigation of selected folk medicinal plants of PakistanA. Saleem^a, A. Ammar^b and K. Pihlaja^a^aDepartment of Chemistry, University of Turku, 20014 Turku, Finland. ^b Faculty of Information Technology (Data Communication), Turku Polytechnic, Sepänkatu 1, 20700 Turku, Finland.

Forty-nine Pakistani folk medicinal plant organs were phytochemically studied. Their phenolic contents were related to their lipid peroxidation inhibition capacity. The extracts of *Nymphaea lotus* L. flowers, *Acacia nilotica* (L.) Delile beans, *Terminalia belerica* Roxb. and *Terminalia chebula* Retz. fruits showed stronger antioxidant potential than α -tocopherol [IC₅₀ (μ g/ml), 397.3, 422.3, 553.3, 529.5, 834.1, respectively]. Phenolic acids and flavonol aglycones were the major phenolics in these extracts (1). The extracts of *A. nilotica* leaves and *Peganum harmala* L. seeds showed stronger affinity towards α_{2A} , α_{2B} and α_{2C} adrenoceptors in competition binding assays (88–89% displacement of the radiolabel). The antagonistic nature of the glycoalkaloid-rich fractions of the extracts was confirmed by their ability to inhibit epinephrine-stimulated ³⁵S-GTP γ S binding (2). *T. chebula* fruit extract showed dose dependent cancer cell growth inhibitory activity potential against four cancer cell lines in assays of cell proliferation and cytotoxicity. Growth inhibitory-guided fractionation and isolation of its 70% methanol extract yielded ellagic acid, chebulinic acid and its novel derivative 2,4-chebuloyl- α -D-glucopyranose (3). Chebulinic acid and 2,4-chebuloyl- α -D-glucopyranose (IC₅₀ μ M = 53.2 and 78.5 respectively) were found to be the most growth-inhibitory compounds. The chemical structures of the isolated compounds of chebulinic acid and 2,4-chebuloyl- α -D-glucopyranose were elucidated using HPLC-DAD, HPLC-ESI-MS and NMR. The stereostructures of chebulinic acid and 2,4-chebuloyl- α -D-glucopyranose were studied in detail by ¹H and ¹³C NMR. The absolute configuration of three stereo centers of chebuloyl group were reassigned from what has been reported previously in the literature. The glucose unit of chebulinic acid was observed to adopt an inverted chair conformation (¹C₄), while the glucose unit in 2,4-chebuloyl- α -D-glucopyranose adopted a twisted conformation.

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A258 Analysis of herb mixtures used in Inani Tibb medicine of the Near East: The Syrian mixturesMaría Dolores Carmona^a, Concepción Obón^b, Rafael Llorach^a and Diego Rivera^a^a Departamento de Biología Vegetal, Facultad de Biología, Universidad de Murcia, 30100 Murcia, Spain. Email: drivera@um.es.^b Departamento de Biología Aplicada, EPSO, Universidad Miguel Hernández, Orihuela, Alicante, Spain.

Inani Tibb medicine uses often complex mixtures of herbs and spices with the purpose of preventing or curing diseases. Sometimes these mixtures includes toxic species. Here we are dealing with the complex mixtures sold by the attarin of Damascus and Aleppo that are somewhat peculiar. These mixtures are sold in large bags of 500 to 1000 g or as crude mixtures of slightly broken dried material. The samples were analysed using binocular microscope and separated the different plant materials. These were identified using the herbarium specimens for comparison and local floras. The weight of each component was measured using an analytical balance.

The Arba'in or Mixture of the Forty was reported as commonly sold in Palestine (1). But this is mostly based in imported exotic species fundamentally spices as nutmeg, black pepper, allspice, cinnamon, mixed with local herbs, fruits and vegetables as coriander, fennel, parsley, zit-el harmel. Instead the Syrian mixtures comprise mostly locally grown (autochthonous or exotic) or wild plants up to the number of 22 different species. This is a relevant difference. The basic species in all samples are: *Alcea damascena* (Mout.) Mout., *Aloysia triphylla* (L'Hérit.) Britt., *Eleagnus angustifolia* L., *Matricaria recutita* L. and *Rosa x damascena* Miller. Some interesting species found in the mixtures and not so far reported as medicinal in the literature surveyed are: *Alcea dissecta* Baker, *Colutea cilicica* Boiss & Ball., *Cytisopsis pseudocytisus* (Boiss.) Fertig, *Micromeria myrtifolia* Boiss. & Kotschy and *Phlomis syriaca* Boiss.

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