Phytochemical Research of Peganum harmala

Amangeldieva, Ayaulym (School: School-Gymnasium No. 4 Named After Zhambyl Zhabayev)

Peganum hermala l. is a medicinally important herb of the family Zygophyllaceae. Peganum hermala l. is a perennial herbaceous, glabrous plant growing in the arid and semiarid regions, steppe areas, and sandy soils, related to medicinal, dyeing and food plants. Various parts of Peganum harmala including its seeds, fruits, root, and bark, have been used as folk medicine for a long time in different countries. In this work, chemical components of the aerial part of plants Peganum hermala l. are identified. The compositions of the aerial part of Peganum hermala l. were extracted with hexane and analyzed by gas chromatography – mass spectrometry (GC-MS). Six compounds were detected and their concentrations were determined by the method of normalization of peak areas. Among them, the major compounds are esters of fatty acids (60,732%), amides (7,071%), alkanes (0,142%), alcohols (8,757%), fatty acids (1,958%), ketones (0,042%). High performance liquid chromatography was used in combination with an ultraviolet detector and real-time tandem mass spectrometry (ESI-MS/MS) to analyze the polyphenolic compounds of the extracts. Polyphenolic major compounds are gallic acid 6.19%, quercetin-3-glucoside 3.23% (leaves), gallic acid 5.12%, 10.80% (stems). Also identified of metallic content of Peganum hermala l. in the stem, leaf, fruit. As a result of the study, 38 micro and macro elements were found in plant. The antioxidant activity of permanganates was determined (Leventhal method) in plants. The result was 236 mg O2/l. Analysis of each part of the plant and more detailed information on the specific plants were investigated.

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