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RESEARCH ARTICLE

COMPOSITION OF ESSENTIAL OILS OF THE PLANT *ASTRAGALUS STENOCYSTIS*

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ABSTRACT

Plants named *Astragalus stenocystis* growing in Namangan region of the Republic of Uzbekistan were collected during the flowering period and carried out para-hydrodistillation, then identified the presence of essential oils in the composition by chromatata-mass spectrometry analysis.

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INTRODUCTION

Since ancient times, plants have been used by humans to cure various ailments. The earliest records of herbal remedies are in the Mesopotamian monuments of 5000 BC (Sumner, 2001). *Astragalus* is a plant, family of Fabaceae legumes, with about 3,000 species can be found as grasses, small and large shrubs. *Astragalus* species spread in Southeast Asia (largest region with 1000-1500 species), in the Himalayan region of China (500 species), Northwest America and South America (400-450 and 100 species, respectively). It can also be found in Europe (133 species) (Heywood, 1972). Up to now, more than 100 species of astragal have been studied. Three main groups of them, biologically active substances - polysaccharides, flavonoids and saponins were analyzed. Other biologically active compounds include sesquiterpene-flavonol complexes, sterols, lignans, coumarins and phenol acids. Three toxic groups of phytoconstitutes - indolizidine alkaloids, aliphatic nitro compounds and iron-selenium derivatives were found (Pistelli, 2002; Verotta, 2001). *Astragalus* has been shown to have flavonoids such as flavonoids, flavonols, flavanones, flavanonols, balconies, aurons, isoflavones, isoflavones and pterocarpans (Viktor M. Bratkov; 6.

<https://www.ncbi.nlm.nih.gov/pmc/articl es/P MC47 91984/>). *Astragal* is a medicinal plant that is widely used in modern medicine. It is widely used in diseases of neurosis, circulatory system, inflammation, gastrointestinal tract, atherosclerosis and renal failure. Some types are used as diuretic and hemostatic drugs. Many *Astragal* species contain chemical elements in their composition. These elements are mainly metals: Fe, Al, Mg, Ca, Na, Ba, Sr, Mo, B, Mn, and Metals: P, Si, Se. In addition, astragal herb also contains medicines, such as cedar, polysaccharides, apple acid, bicaric acid, citric acid, essential oils, flavanoids, steroids, organic acids, vitamins C and E. *Astragal* root also has medicinal properties. Roots are gathered mainly in spring and autumn. Many *Astragal* species are also used as fodder for livestock because of its nutritional value (7.pda.litres.ru/urijy-konstantin). The material is dried in a shade and in a ventilated room. The plants were collected from hills and the hills of Kasansay district of Namangan region. Essential oils were extracted with para-hydrodistillation for 3-4 hours. The extracted essential oil was stored in 4 ° C tightly sealed vials before dehydration with Na₂SO₄. Essential oils are a yellowish orange fluid with a distinctive odor. Extracts and essential oil analysis were performed on a chromatata-mass spectrometer Agilent 5975S inert MSD / 7890A GC. Component mixture in a quartz capillary Agilent HP-INNOWax (30m × 250mm × 0.25mm) 50 ° C (1 min) - 4 ° C / min 200 ° C (6 min), 15 ° C / min 250 °

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Table 1. The composition of the *Astragalus stenocystis* plant

№	Substances	RT	RI	amounts
1.	Caproaldehyde; Hexaldehyde	3.197	681,68	0.63
2.	Eucalyptol	5.300	1 097,36	1.97
3.	tridecane	7.821	1 346,72	0.14
4.	Tetradecane	10.631	1 499,87	0.84
5.	furan-3-carbaldehyde	11.965	545,62	0.99
6.	(1S,4S)-4,7,7-trimethylbicyclo(2.2.1)heptan-3-one	13.140	1 086,01	4.32
7.	Pentadecane	13.582	1 501,19	1.63
8.	Pyrimidine,2-amino-4-methyl-(6CI,7CI,8CI); 2-Amino-4-methylpyrimidine; 2-Amino-6-methylpyrimidine; 4-Methyl-2-aminopyrimidine; 4-Methyl-2-pyrimidinamine; 6-Methyl-2-pyrimidinamine;	15.212	556,65	42.12
9.	4,7,7-trimethylbicyclo(4.1.0)hept-4-ene	15.931	1 081,12	1.46
10.	Hexadecane	16.552	1 602,33	2.56
11.	Heptadecane	19.516	1 707,04	0.70
12.	beta-Methylnaphthalene	22.301	1 103,43	0.34
13.	beta-Methylnaphthalene	23.193	1 119,09	0.67
14.	Toluene	23.365	722,11	1.82
15.	2-Phenylethanol	24.250	837,66	0.91

C(15 min)). The sample volume was 0.2 mL (hexane, benzene), and the flow rate in the moving phase was 1.1 mL / min. The injector temperature is 220 ° C. EU-MS spectra m / z 10-550 a.e.m. range. Component identification is compared with the mass spectrometry data available in electronic libraries W9N11.L, W8N05ST.L, and NIST08 and compared with the retention index (RI), (S9-S24) n-alkane compounds compared to the retention time and the mass spectra of the fragments in the literature. The results showed that Pyrimidine, 2-amino-4-methyl- (6CI, 7CI, 8CI) was extracted from the extract obtained by para-hydrodistillation; 2-Amino-4-methylpyrimidine; 2-Amino-6-methylpyrimidine; 4-Methyl-2-aminopyrimidine; 4-Methyl-2-pyrimidinamine; 6-Methyl-2-pyrimidinamine (C₅H₇N₃) standing time: 15,212, standing: 42,12 and (1C, 4S) -4,7,7-trimethylbicyclo (2.2.1) heptan-3-one (C₁₀H₁₆O): 13,140 with a yield of 4.32. A total of 15 items were extracted from the surface of the *Astragalus stenocystis* plant using a chromatomass spectrometry method and identified by comparing the library data with W8N05S.T and NIST08.

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