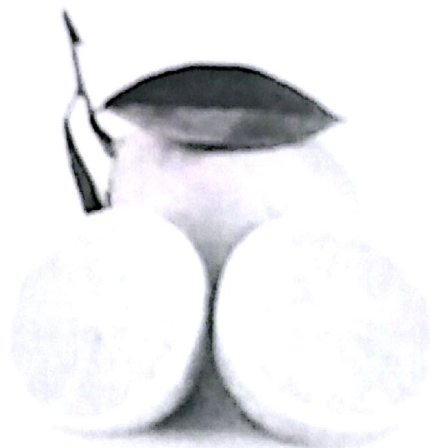




4th International Symposium on Edible Plant Resources and the Bioactive Ingredients

Abstracts



Dushanbe, Tajikistan
July 24th to 28th, 2014

Central Asian Center of Drug Discover and Development of Chinese Academy of Sciences
Academy of Sciences of Republic of Tajikistan

COMPARATIVE PHYTOCHEMICAL ANALYSIS FROM THE CLIMACOPTERA SUBCRASSA, CLIMACOPTERA KORSHINSKYI, CLIMACOPTERA AMBULOSTEGIO AND THEIR BIOLOGICALLY ACTIVITY

^aA.K. Kipchakbayeva., ^bB.K. Yeskaliyeva., ^cG.Sh. Burasheva., ^dH.A.Aisa.

^aAl-Farabi Kazakh National University, Faculty of Chemistry and Chemical Technology, Almaty; 050040, Kazakhstan., tel (+7-727) 3773608 aliya_k85@mail.ru

^bXinjiang Technical Institute of Physics and Chemistry (CAS), Urumqi, Xinjiang 8300011 China, haji@ms.xjb.ac.cn

In recent years, expanding the study of wild plants are widely growing in saline and arid soils of the Republic of Kazakhstan, and adapted to extreme conditions. The object of our study is the aerial parts of some plants of genus *Climacoptera* collected in the flowering stage in the Almaty region. Comparative phytochemical analysis of the three component species of the genus *Climacoptera* revealed the presence of biologically active substances indicates that plant species *C. subcrassa* is promising.

To isolate the bioactive compounds from three species of the genus *Climacoptera* (*C. korshinskyi*, *C. subcrassa* and *C. ambylostegia*) carried out the selection of solvents, ratio is established: raw material - solvent extraction specified multiplicity, time and temperature of extraction.

Climacoptera subcrassa: Moisture content – 6.02%, ash – 12.78%, extractives- 28.82%, carbohydrates -1,7% saponin - 2.42% flavonoids - 1.29%, phenol – 1.52%, coumarin – 0,80%, alkaloids – 0,026%.

Climacoptera subcrassa: Moisture content – 7.37%, ash – 19.53%, extractives- 36.23%, carbohydrates -1,1% saponin - 2.76% flavonoids - 1.1%, phenol – 0.94%, coumarin – 0,13%, alkaloids – 0.075%.

Climacoptera subcrassa: Moisture content – 7.36%, ash – 21.12%, extractives- 35.65%, carbohydrates -1,9% saponin – 1.21% flavonoids – 0.8%, phenol – 0.73%, coumarin – 1.03%, alkaloids – 0,027%.

For the isolation of biologically active compounds conducted selection of solvents optimized technological regime. In order to optimize the extraction process of biologically active substances, studied the influence of relations, raw-solvent extraction time and temperature. The most appropriate 70% ethyl alcohol (in a ratio of raw materials: extractant 1:5, 3 days, room temperature) extracted in these conditions up to 60% of biologically active substances.

The combined extract was concentrated and extracted successively with hexane, chloroform, ethyl acetate and n-butanol; to give four working extract - hexane, chloroform, ethyl acetate, butanolls. Established that a qualitative chemical composition of the investigated different time allow offering the general scheme of separation and isolation of different classes of compounds such as triterpenoids, flavonoids, saponins. [1, 2] The ethyl acetate extract of the determination of antioxidant activity by DPPH, showed 63.08 ± 2.91 . Inhibition in comparison with standard antioxidant vitamin C 5.34 ± 0.42 Determination of antidiabetic activity by PTP1B showed 11.86 ± 0.52 . PTP1B Inhibitor 1.46 ± 0.40

Using silica gel column chromatography of the chloroform the concentrate elution using chloroform-ethyl acetate (8:2) allocated substance 1, and from the ethyl acetate fraction (eluent: chloroform - ethyl acetate 1:1, 1:2) were obtained from 2, 3 and 4.

On the basis of physico-chemical data and comparison with literature selected compounds were identified as follows: 7,3'-dimethoxy 3,5,4'-trihydroxyflavone, 3-O- α -L-rhamnopyranoside 5,7,4'-trihydroxy-3'-methoxyflavone, 3-O- β -D-glucopyranoside-5,4'-dihydroxy-7,3'-dimethoxyflavone, 7-O- β -D-glucopyronazide-3-O- α -L-rhamnopyronazide 5,7,3', 4'-tetrahydroxyflavone.

Investigation work from the worked extracts continues.

References

1. Burasheva G.Sh. Rakhimov KD, Abilov JA, biologically active complex - alhidina and its pharmacological activity, Almaty, Kazakh National University, 2001, 180 p.
2. Mabry T.J., Markham K.R., Thomas M.B., *The systematic Identification of flavonoids*, Berlin, Springer - Verlag, 1970, 354 p.