eISSN 2409-6334

ASFENDIYAROV KAZAKH NATIONAL MEDICAL UNIVERSITY

ISJM

INTERNATIONAL STUDENT'S JOURNAL OF MEDICINE

SPECIAL ISSUE | APRIL 21-22 | 2016

FOURTH INTERNATIONAL SCIENTIFIC - PRACTICAL CONFERENCE OF STUDENTS AND YOUNG SCIENTISTS

SCIENCE AND MEDICINE: A MODERN VIEW OF YOUTH

ALMATY 2017

«ҒЫЛЫМ ЖӘНЕ МЕДИЦИНА: ЖАСТАРДЫҢ ЗАМАНАУИ КӨЗҚАРАСЫ» АТТЫ СТУДЕНТТЕР МЕН ЖАС ҒАЛЫМДАРДЫҢ IV ХАЛЫҚАРАЛЫҚ ҒЫЛЫМИ-ТӘЖІРБИЕЛІК КОНФЕРЕНЦИЯСЫНЫҢ ЖИНАҒЫ
Алматы, 20-21 сәуір 2017 жыл

СБОРНИК IV МЕЖДУНАРОДНОЙ НАУЧНО-ПРАКТИЧЕСКОЙ КОНФЕРЕНЦИИ СТУДЕНТОВ И МОЛОДЫХ УЧЕНЫХ «НАУКА И МЕДИЦИНА: СОВРЕМЕННЫЙ ВЗГЛЯД МОЛОДЕЖИ»
Алматы, 20-21 апреля 2017 года

COLLECTION OF IV INTERNATIONAL SCIENTIFIC-PRACTICAL CONFERENCE OF STUDENTS AND YOUNG SCIENTISTS «SCIENCE AND MEDICINE: A MODERN VIEW OF YOUTH»
Almaty, 20-21 April, 2017

СОДЕРЖАНИЕ

IDENTIFICATION OF FLAVONOIDS IN HOSTA PLANTAGINEA LEAVES

Ziad Mahmoud Kadhim, fifth year student
Viktoriia V. Protska, PhD student
National University of Pharmacy, Kharkiv, Ukraine
Supervisors: D. Pharm. Sc, professor, I. O. Zhuravel, Cand. Pharm. Sc., assoc. prof. I. G. Gurieva
Department of Chemistry of Natural Compounds

Date. Plants are an important source of different groups of biologically active compounds with significant pharmacological effect. Flavonoids are one of such groups. They are a class of secondary metabolites with a large number of structures found in high amounts in fruits and vegetables. Flavonoids possess antioxidant and anti-inflammatory properties which is typical for phenolic compounds, but above all they also have antiallergic, hepatoprotective, antibacterial, antiviral ,diuretic, hypotensive, cardioprotective and even antitumor properties [1, 4].

Hosta is a genus of flowering plants distributed in subtropical and temperate regions. First of all, the plants of this genus are known for their ornamental value, but some species are edible, and others are known for their therapeutic properties. For example, Hosta plants are used in Chinese and Japanese folk medicine to treat otitis, pharyngolaryngitis, mastitis, urethritis, and even bruises and snake bites [2]. The study of Hosta plantaginea in particular has shown the presence of steroidal saponins and alkaloids that show antitumor effect [3].

Since flavonoids also possess antitumor effect, it is interesting to study this group of compounds and its impact on the therapeutic activity of Hosta plantaginea leaves.

Purpose and objectives. The purpose of the experiment was to study the qualitative composition of flavonoids in Hosta plantaginea leaves.

Materials and methods. The object of the study were Hosta plantaginea leaves collected in 2016 (May - August). The paper chromatography method and quality tests were used to identify the flavonoids. 50% ethanol extracts of Hosta plantaginea leaves were used for the identification. The plates were chromatographed in the system butanol-acetic acid-water (4:1:2) and 15% acetic acid, firstly observed under the UV-light, and then sprayed with 2% aluminum chloride alcohol solution. The formation of yellow and greenish-yellow spots after processing the chromatograms with detection reagent evidenced the presence of flavonoids. The cyanidin formation test, Wilson's test, tests with sodium hydroxide, lead acetate, iron (III) chloride, 2% aluminum chloride alcohol solution were used for the identification.

Results and discussion. The preliminary identification was carried out using chemical identification tests, which showed positive results and allowed to detect flavonoids in the 50% ethanol extract of Hosta plantaginea leaves. Further chromatographic analysis with standard samples of flavonoids allowed identifying quercetin, kaempferol and their glycosides in Hosta plantaginea leaves.

Conclusion. The results obtained will be used for the further standardization of Hosta plantaginea leaves.

LIST OF REFERENCE:

1. García-Lafuente, A., Guillamón, E., Villares, A., Rostagno, M. A., & Martínez, J. A. (2009). Flavonoids as anti-inflammatory agents: implications in cancer and cardiovascular disease. Inflammation Research, 58(9), 537-552.
2. Li, R., Wang, M. Y., & Li, X. B. (2012). Chemical constituents and biological activities of genus Hosta (Liliaceae). Journal of Medicinal Plants Research, 6(14), 2704-2713.
3. Liu, J. Q., Wang, C. F., Qiu, M. H., & Hu, W. X. (2010). Sterodial saponins from flowers of Hosta plantaginea and their antitumor activities. Chinese Traditional and Herbal Drugs, 41, 520-524.
4. Tapas, A. R., Sakarkar, D. M., & Kakde, R. B. (2008). Flavonoids as nutraceuticals: a review. Tropical Journal of Pharmaceutical Research, 7(3), 1089-1099.