9TH INTERNATIONAL CONFERENCE OF PHARMACY SCIENCE AND PRACTICE

2018

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ABSTRACT BOOK

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The 9th international conference of Pharmacy Science and practice is organized by Lithuanian University of Health Sciences (LUHS) Faculty of Pharmacy and Lithuanian University of Health Sciences Faculty of Pharmacy Alumni in collaboration with Lietuvos Farmacijos sąjunga, Lietuvos vaistininkų sąjunga ir Studentų farmacininkų draugija

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Language of abstracts was not corrected.

WELCOME

Dear participants and quests of the conference,

It is my great pleasure to welcome you to the 9th International Pharmaceutical Conference „Science and Practice 2018" in the Lithuanian University of Health Sciences, Faculty of Pharmacy. The 9th International Pharmaceutical Conference is dedicated to the 100th anniversary of independent Lithuania's Pharmacy. Lithuania celebrates the centenary of the restoration of its Independence and 100 years ago pharmacists and students of pharmacy started returning back to their country and under especially unfavourable circumstances were faithful to the humanistic principles. We should be proud and strong of our history to stimulate our professional unity.

To be an expert of medications, pharmacist needs to be highly trained and this is a long way which begins with University studies and continues during all life, conducting relevant scientific research and efficient practical training and University teachers, social partners and international collaboration take part in this development. Today we have the opportunity to meet experts and professors from Riga Stradins University and University of Latvia (Latvia), Jagiellonian University and Bialystok Medical University (Poland), University of Strathclyde (UK), University of Belgrade (Serbia), National University of Pharmacy (Ukraine), Lithuanian State Medicines Control Agency, Department of Pharmacy of Ministry of Health of Republic of Lithuania, Committee on Health Affairs of Lietuvos Respublikos seimas. This annual meeting enables the building of a productive dialogue and fruitful contacts between scientists of pharmaceutical field and the community pharmacists of various countries. We believe, the results presented at the conference will serve for the integration and cooperation in developing new scientific ideas, new solutions and new opportunities.

I wish the participants a very successful meeting and fruitful deliberations. Thank you!

On behalf of the organizing committee,

Prof. Ramunė Morkūnienė
Dean of The Faculty of Pharmacy
Lithuanian University of Health Sciences

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Determination of the effect of extraction multiplicity on the yield of biologically active substances from the bark of white willow

Ie.V. Gladukh*, Y.S. Kukhtenko, D.P. Soldatov
National University of Pharmacy, Kharkiv, Ukraine
**Corresponding author: glad_e@i.ua*

Certain requirements are put to the choice of herbal sources of phytopreparations: plants should have sufficient and rapidly renewable raw stocks, have a diverse chemical composition and some experience of use in folk or officinal medicine.

Previous phytochemical studies have shown that white willow (*Salix alba* L.) bark contains a significant amount of biologically active compounds: derivatives of salicylic acid, flavonoids, organic acids, carbohydrates, tannins.

The purpose of our work was to determine the effect of willow bark extraction multiplicity on the yield of biologically active substances.

To study the optimum conditions for the extracting, we have determined the technological parameters of the VRM: moisture content, grinding degree, specific gravity, volumetric and bulk weight, porosity, fractional void volume, free volume of the layer, extractant absorption coefficient.

The most complete extraction of the sum of hydroxycinnamic acids, flavonoids and the sum of phenolic compounds is achieved at obtaining of extracts using 70% ethanol as at increase in the concentration of ethanol the content of extractive and biologically active substances did not increase.

Filtration extraction method was used. Each of the extractions was sampled fractionally in the DER step 1:1. The extraction process was performed until a total extract of DER 1:10 was obtained. For each sample, a quantitative determination was made and the main indicators of the process dynamics were calculated. The maximum number of extraction steps to obtain the extract should be considered 5, since the further increase in the portions of the extractant does not result in a significant increase in the yield of the finished product. The total extract yield for 5 steps of extraction was over 41%.

Thus, the influence of the extractant type on the yield of biologically active substances on each step of extraction has been investigated. The use of 70% ethanol as an extractant has been grounded experimentally. The extraction process dynamics was investigated on the basis of which the choice of the extraction process multiplicity as DER 1: 5 has been substantiated.

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FF-18-08

Choice of the optimum composition of venotonic action phytogel

O.S. Kukhtenko, Ie.V. Gladukh, H.P. Kukhtenko*
National University of Pharmacy, Kharkiv, Ukraine
**corresponding author, E-mail address: galinakukh@gmail.com*

Background. The commonly used methods for venous insufficiency treatment are pharmacotherapy, compression therapy and surgical methods of treatment. Among the main drugs used at all stages of the disease, the most widespread are venotonics, or phleboprotectors. These are various pharmacological preparations that are united by a common property - stabilization of the structural components of the venous wall and an increase in its tone. At the same time, topical medicines (ointments and gels) occupy an important place in the treatment of venous insufficiency and are very popular with both doctors and patients. Ointments and gels based on venoactive drugs, along with some distracting action, can have veno-and capillaroprotective effects [1]. We were interested in the possibility of creating a phytogel with a venotonic effect containing a complex thick extract extracted from a mixture of medicinal plant materials: horse chestnut seeds (Aésculus), Japanese sophora fruits (Styphnolóbium japónicum), Melilótus grass and comfrey roots (Sýmphytum).This extract has anti-inflammatory, venotonic, fibrinolytic, anticoagulant action. The components of the extract are part of the gels for the treatment of chronic venous insufficiency, varicose veins, hemorrhoids. The use of the gel for topical treatment of venous insufficiency is most preferable, since this dosage form is characterized by ease of application, good release of biologically active substances and their penetration deep into the tissues.

Materials and methods. The standardized thick extract obtained at the Department of Industrial Pharmacy of the NUPh. To substantiate the choice of the gel base, the structural and mechanical properties of gels of different origin have been studied: xanthan and guar gum, hydroxypropylmethylcellulose, Ammonium Acryloyldimethyltaurate / VP Copolymer, carbomer. In the work, 0.2%, 0.4%, 0.6%, 0.8% and 1.0% gels have been used. Structural and mechanical properties were studied using a laboratory rheometer Rheolab QC from Anton Paar equipped with coaxial cylinders C-CC27/SS, measurements were carried out at a temperature of 25ºC. The analysis of structural and mechanical properties was performed on the parameters of structural viscosity, elasticity, plasticity, flow type, yield stress and shear stress [2, 3].

Results. Based on the results of the study, it was found that the hydroxypropyl methylcellulose gels do not show a yield stress in the studied range of concentrations. Gels of xanthan gum and guar gum increase the structural viscosity in proportion to the increase in their concentration. Carbomer and VP Copolymer gels have high values of yield stress and shear stress точки (предела) at the yield point and also a high value of structural viscosity. With an increase in the carbomer and VP Copolymer concentration, the plastic properties of the gels get more pronounced. The introduction of an aqueous solution of the thick extract in the amount of 20% reduces the effective viscosity to varying degrees, while retaining the spreadability.

Conclusions. The rheological behavior of gels has been studied. The carried out pharmacotechnological studies of the gel with the content of a complex phytoextract of the venotonic action have made it possible determining the optimum composition of the auxiliary substances in the development of the preparation.

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