DETERMINATION OF CARBOXYLIC ACIDS COMPOSITION AND CONTENT IN THE «PRUNOFIT» AND POLYESHCHARIDINE COMPLEX OBTAINED FROM *PRUNUS DOMESTICA* FRUITS

Mohammed Shahm B., Upyr T. V.
Scientific supervisor: assoc. prof. Lenchyk L. V.
National University of Pharmacy, Kharkiv, Ukraine
larysa.lenchyk@gmail.com

Introduction. Pharmacological studies of the extract «Pronofit» and the polysaccharide complex (PSC) obtained from *Prunus domestica* fruits have established a pronounced hepatoprotective effect. It is known that hepatoprotective agents include vitamins, amino acids, carbohydrates, flavonoids and carboxylic acids.

Aim. Therefore, the aim of our research was to study the composition and content of carboxylic acids of these extracts.

Materials and methods. The «Pronofit» contained fibers of plum fruit remaining after obtaining a water extract. The PSC was obtained from *Prunus domestica* fruits by adding ethyl alcohol 96% to plum fruit water extract in ratio 3:1.

For research, extracts with 30% ethanol from PSC and «Pronofit» were obtained.

The qualitative composition of the carboxylic acids in «Pronofit» and PSC was determined by paper chromatography (PC) in the solvent systems as 2% acetic acid, 15% acetic acid and propanol-water (85:15) with reliable samples of carboxylic acids. The dried chromatograms were treated with a solution of 0.3% bromophenol blue and 0.1% solution of methyl red in methanol followed by heating in a drying oven at a temperature of 105 ° C. Organic acids appeared in the form of yellow spots on a blue background.

Determination of the content of carboxylic acids in PSC and «Pronofit» was carried out with direct titrimetry, using as a titrant a solution of sodium hydroxide (0.1 mol / L) and indicators of 1% solution of phenolphthalein and 0.1% solution of methylene blue. Titration was carried out until the appearance of purple-red color. The content of carboxylic acids was calculated in terms of malic acid.

Results and discussion. According to the results of PC in "Prunofit" and PSC four carboxylic acids were identified: citric, malic, oxalic, and succinic with the highest content of malic acid in both extracts. According to the results of titrimetric analysis, it was found that content of carboxylic acids in "Prunofit" and PSC was determined as 19.2 % and 12.8 % respectively in terms of dry weight.

Conclusions. The obtained data showed promising further study of «Prunofit» and PSC and will be used for standardization and development of new drugs from *Prunus domestica* fruits.

PHENOL CARBOXYLIC ACIDS OF THE IMMORTELLE (HELICHRYSUM BRACTEATUM)

Moskalenko A.M.
Scientific supervisor: Professor Popova N.V.
National University of Pharmacy, Kharkiv, Ukraine
anmosk2002@gmail.com

Introduction. In modern medicine, often a doctor and patient, having discuss the most optimal and rational approach to prevention and treatment, to choose for herbal medicines than the use of synthetic drugs. Phytochemical research of herbal drugs is carried out in two directions. One direction is a scientific search for new biologically active substances in the plants which are already used for the production of drugs; the other direction is a pharmacological study of new plants. Herbal medicines, as a rule, have an excellent tolerability profile and a minimum of contraindications. It is known that phenol carboxylic acids are contained in almost every plant, and they can be both in the free state and in the form of glycosides. Among phenol carboxylic acids in plants, hydroxycinnamic acids are particularly prevalent. Phenol carboxylic acids have a pronounced pharmacological effect and can be important as independent biologically active substances for medicines.

The Aim of this study is to identify phenol carboxylic acids in the flowers and herb of immortelle.

Materials and methods. As an object of this study used flowers and herb of the immortelle. For preliminary analysis of phenol carboxylic acids, paper chromatography (Filtrak No. 11) and TLC (Sorbfil, Merck plates) were used in the following solvent systems: 1) benzene – methyl alcohol – acetone (8: 2: 10); 2) benzene – acetic acid (5: 2); 3) benzene – methyl alcohol (8: 2); 4) 15% solution of acetic acid; 5) isopropanol – chloroform – acetic acid glacial (15: 15: 0.5); 6) anhydrous formic acid – water – ethyl acetate (10:10:80);

Results and discussion. As a result of the analysis, 8 phenol carboxylic acids were determined in the flowers and herb of the immortelle: gallic, hydroxyphenylacetic, coffeic, coumaric, ferulic, synapic, cinamic, quinic acids.

Conclusions. For the first time, this research was carried out to study on the qualitative composition of phenol carboxylic acids in herb and flowers of the immortelle using the paper chromatography (Filtrak No. 11) and TLC (Sorbfil, Merck plates) method. The data obtained as a result of this research indicate the promise of further phytochemical studies of the immortelle and the development on its basis of new drugs and dietary supplements.

ANTI-ALLERGIC INFLAMMATORY POTENTIAL OF HERBS AND HERBAL NATURAL PRODUCTS

Mykhailenko O.O. , Korinek M.[2,3,4], El-Shazly M.[2,5], Tsai Y.-C.[2], Ayoub I.M.[5], Thabet A.A.[5], Youssef F.S.[5], Wu Y.-C.[2], Chang F.-R.[2], Chen B.-H.[3], Hwang T.-L.[4]

Scientific supervisors: prof. Kovalyov V.M.[1], prof. Georgiyants V.A.[1]

[1]National University of Pharmacy, Kharkiv, Ukraine

[2]Graduate Institute of Natural Products, College of Pharmacy, Kaohsiung Medical University, Kaohsiung 807, Taiwan

[3]Department of Biotechnology, College of Life Science, Kaohsiung Medical University, Kaohsiung 807, Taiwan

[4]Graduate Institute of Natural Products, College of Medicine, Chang Gung University, Taoyuan 333, Taiwan

[5]Department of Pharmacognosy, Faculty of Pharmacy, Ain-Shams University, Cairo 11566, Egypt

mykhailenko.farm@gmail.com

Introduction. During recent decades, various allergic diseases such as allergic rhinitis, asthma, atopic dermatitis and food allergy have become more prevalent globally. The discovery of novel anti-allergic treatment from natural sources is an important and demanding field in order to maintain human health. Plants have been used as traditional natural medicines worldwide for healing various diseases, but allergic inflammation has been one of the challenging diagnosis. In particular, various oriental medicinal herbs are reported to have anti-allergic activity both *in vitro* and *in vivo* [1, 2]. However, the active constituents and mechanisms of action of most herbs are largely unknown. Flavonoids are low-molecular-weight polyphenolic secondary plant metabolites. In addition, they are natural products with antioxidant, anti-inflammatory and anti-allergic properties as well as immune-modulating effects used as complementary and alternative medicine [3].

The aim of the study was to screen various natural products for anti-allergic inflammatory activity.

Materials and methods. Mast cells are crucial effectors of inflammatory allergic reaction. Upon activation of mast cells by an antigen, histamine, *β*-hexosaminidase and other mediators are released from these cells triggering allergic inflammatory symptoms. We utilized degranulation assay [4], which is based on *β*-hexosaminidase release from RBL-2H3 cells activated either by calcium ionophore A23187 or antigen (IgE plus DNP-BSA). Elastase release (degranulation) and superoxide anion generation (respiratory burst) assays were used to evaluate anti-inflammatory activity in human neutrophils.

Results and discussion. Over 200 samples were screened for anti-allergic activity revealing a potential of several plants. For instance, ornamental plant *Dietes bicolor*, seeds of *Aquilaria malaccensis*, aerial parts of *Pandanus amaryllifolius* and *Liriope platyphylla*, leaves of *Carica papaya*, leaves of