

**ANTI-INFLAMMATORY ACTIVITY  
GLUCOSE AMMONIUM SALTS AND GLUCOSYL AMIDES  
OF NITROBENZOIC AND N-PHENYLANTHRANILIC ACIDS**

Uldochev D.

Scientific supervisor: assoc. prof. Yaremenko V. D.

National University of Pharmacy, Kharkiv, Ukraine

medchem@nuph.edu.ua

**Introduction.** Inflammatory processes are the common adverse factor that complicates the course of many pathological conditions. Additionally, arthritis and arthrosis of various joints causes a frequent disability of patients when untimely treatment. Benzoic and N-phenylanthranilic acids, as well as compounds with glucosamine are the objects of close attention of foreign and local scientists. Their derivatives have been widely used in medical practice as non-steroidal anti-inflammatory drugs and compounds that improve cartilage trophism.

**Aim.** This research has a deal with the synthetic preparation of glucose ammonium salts and glucosyl amides of 2-chlor-5-nitro-, 2-chlor-3,5-dinitrobenzoic, 5-nitro- and 3,5-dinitro-N-phenylanthranilic acids, with the further study of their level of anti-inflammatory action compared to the test drug voltaren.

**Materials and methods.** The starting materials for obtaining the desired compounds were 2-chlor-3-nitro- (5-nitro-, 3,5-dinitro-) benzoic acids of our own production, from which 3-nitro- and 3,5-dinitro- N-phenylanthranilic acids, their methyl esters, followed by glucosammonium salts and glucosylamides.

Glucosammonium salts are obtained by the interaction of the alcohol solutions of the corresponding benzoic and N-phenylanthranilic acids with the alcohol solutions of D - (+) - glucosamine. Glucosylamides have also been synthesized by the interaction of alcohol D - (+) - glucosamine with methyl esters of substituted benzoic and N-phenylanthranilic acids. The yield of the planned compounds was 65-91% of theoretically scheduled.

The structure of the obtained compounds was confirmed by the modern methods of analysis: infrared, ultraviolet, nuclear magnetic spectroscopy, and the degree of purity – by thin-layer chromatography.

The study of anti-inflammatory (anti-exudative) activity of the obtained compounds was performed on a sample of carrageenan edema in mice 16-20 gr of weight. The compounds were administered at a dose of 25 mg / kg orally once. As the reference drug, voltaren was used, which was administered at a dosage of 8 mg / kg.

**Results and discussion.** The synthesized substances exhibited a pronounced anti-inflammatory (anti-exudative) effect. Their activity in the experiment was 27.3 - 38.1%. The activity of the test drug voltaren was 37.5%.

**Conclusions.** It is advisable to continue the study of the anti-inflammatory activity of the compounds described in other dosages, as well as using other routes of administration.

## ORGANIC SURFACTANTS IN COSMETOLOGY

Vasylenko S.O.

Scientific supervisor: assoc. prof. Boriak L.I.

National University of Pharmacy, Kharkiv, Ukraine

Vasilenko\_Snezhana@ukr.net

**Introduction.** During the rapid development of synthesis, modern cosmetic specialists need not only specialized knowledge, but also information about the chemical nature. They will help the effective and safe use of cosmetics.

**Aim.** To explore the arsenal of organic surfactants in cosmetic practice.

**Material and methods.** The information from the open internet sources and print publications.

**Results and discussion.** Surfactants include various in composition. They are capable of reducing surface tension and stabilizing dispersed systems of emulsions and suspensions. The foaming properties of these compounds provide the detergent effect of cosmetics, promote the mixing of cosmetic compositions.

In addition, surfactants lead to the swelling of the upper layer of the epidermis, increase its permeability to cosmetic components, promote skin cleansing. Along with the positive effects, surfactants can disrupt the barrier functions of the epidermis, up to the destruction of the lipid layer, protein denaturation and enzyme inactivation.

All surfactants are classified by nature of the polar group. Thus, anionic surfactants in hydrolysis form negatively charged ions with a long hydrocarbon chain. These include: alkyl sulfates (lauryl sulfate) triethanolamines alkyl sulfates (sodium sarcosinate), sulfated castor oil, polyethoxycarboxylates. Such substances are used to stabilize emulsions and create foam agents. Since the lipid layer of the skin has a weak negative charge, the anionic surfactants gently interact with it.