An original method for the rapid determination of Fluphenazine hydrochloride in tablets was developed. The drug are determined by a spectrophotometric technique based upon the absorbance of the sulphoxide derivative of the drug. The sulphoxide derivative are formed rapidly and quantitatively at the room temperature by the addition of a solution of potassium peroxomonosulphate (Oxone). The absorbance of the solutions on 348 nm is proportional to the concentration of the phenothiazine drug in the preparation and is specific for the intact drug in the presence of excipients and oxidative and photochemical decomposition products (It is taken into account by the behavior of the blank experiment (in the absence of oxidizer). It has been experimentally found that the molar absorption coefficient of fluphenazine sulfoxide ε is $5.9 \cdot 10^3$ l mol^{-1} (λ_{max} 348 nm).

To examine the precision and accuracy of results various statistical analysis such as relative standard deviation (RSD≤ 2%) and δ=($\bar{x}$-μ) 100%/μ (μ is the true value) was also calculated for each sample. The proposed method was validated by recovery analysis, the standard additions method (δ <RSD). The proposed methods was applied to the analysis of pharmaceutical preparations containing the drugs, and the results obtained compared favourably with those obtained by pharmacopoeial methods.

Conclusions. The obtained validation characteristics of the spectrophotometric method for determining the content of FLZ in the tablets "Fluphenazine hydrochloride" 5 mg meet the eligibility criteria for SPU, which indicates the possibility of its implementation in the practice of analysis of analytical laboratories.

DEVELOPMENT OF METHODS FOR THE QUANTITATIVE DETERMINATION OF 5-METHYLPYRIDINE-2-AMIDE 4-HYDROXY-1-R-2,2-DIOXO-1H-2Λ^6,1-BENZOTHIAZINE-3-CARBOXYLIC ACID BY NITROGEN CONTENT

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Introduction. Nonsteroidal anti-inflammatory agents (NSAIDs) - one of the most used group of drugs that exhibit anti-inflammatory, analgesic and antipyretic effect. Most of the medicines of this group in the chemical structure relates to derivatives of acids, namely: salicylic (aspirin), anthranilic (mefenamic acid), arylacetic (diclofenac sodium), indolocic (indomethacin), propionic (ibuprofen) and enolic (oxicams and pyrasolones).

It is known that the anti-inflammatory effect of NSAIDs is realized by inhibiting the activity of the COX-2 enzyme, and the main side effects (erosive-ulcerative gastrointestinal lesions) appear when inhibiting COX-1. That is why, recently, in the treatment of inflammatory processes, preference is given to drugs with selective action on COX-2, such as oxicams.

Oxicams related to 4-hydroxy-1,2-benzothiazinecarboxamides of enolic acid showed high anti-inflammatory and analgesic effects, however, and they were not devoid of side effects. One of the major inconveniences of oxicamas is their complete incompatibility with many diseases. It is not recommended for use in people who have recently undergone surgery, pregnant, lactating, adolescents, and it has an adverse effect on the gastrointestinal tract and cardiovascular toxicity. That is why, in order to create more advanced painkillers with minimal side effects by modifying the structure of the oxicams at the Department of Pharmaceutical Chemistry of NPhU pyridylamides of 4-hydroxy-1-R-2,2-dioxo-1H-2λ6,1-benzothiazine-3carboxylic acid were synthesized.

One of these substances is 5-methylpyridine-2-amide 4-hydroxy-1-pentyl-2,2-dioxo-1H-2λ^6,1-benzotiazine-3-carboxylic acid which is showed high level of analgesic activity and can be offered as a new drug.

Aim. The aim of our investigation is to develop a method of quantification of the substance of 5-methylpyridine-2-amide 4-hydroxy-1-pentyl-2,2-dioxo-1H-2λ^6,1-benzotiazine-3-carboxylic acid. Since

the structure of the substance contained three nitrogen atoms we have decided to conduct quantitative determination of the content of nitrogen.

Materials and methods. For development of quantitative determination the accurate weight of 5-methylpyridine-2-amide of 4-hydroxy-1-pentyl-2,2-dioxo-1H-2λ6,1-benzotiazine-3-carboxylic acid. The Kjeldahl procedure which is one of the method sof determination of nitrogen involves three major steps: digestion, distilation and titration. The target of the digestion is to break all nitrogen bonds in the sample and convert all of the organically bonded nitrogen into ammonium ions (NH_4^+). For this purpose, the sample of analyzed substance is mixed with sulfuric acid at temperatures between 350 and 380 ºC, potassium sulfate is added to increase the speed and efficiency of the digestion procedure. Next step of our determination is distillation. During this step NH_4^+ by the reaction with NaOH are converted into ammonia (NH_3) which is transferred into the receiver vessel by means of steam distillation. The receiving vessel for the distillate is filled with the aqueous solution of boric acid in order to capture the dissolved ammonia gas. The concentration of the captured ammonium ions is determined acid-base titration. It is performed using titrant solutions of 0.01M hydrochloric acid and a mixture of indicators or potentiometrically with a pH-electrode.

The mass for analysis was measured by analytical scale Axis ANG-200.

The quantitative determination was carried out by automatic Kjeldahl apparatus – Automatic steam distillation unit SDU 300 BEGER.

The results of quantitative determination of the object were subjected to the statistical processing.

Results and discussion. Processing of quantitative determination showed that the relative uncertainty did not exceed the average value of 0.83 %.

Conclusions. The Kjeldahl method can be used for quantitative determination of 5-methylpyridine-2-amide of 4-hydroxy-1-pentyl-2,2-dioxo-1H-2λ6,1-benzotiazine-3-carboxylic acid.

DEVELOPMENT OF THE GC / MS METHOD FOR THE DETERMINATION OF ANTIDEPRESSANTS

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Introduction. Among the physicochemical methods used in the analysis of organic substances, the gas-chromatography-mass-spectrometry (GC/MS) method is distinguished by such characteristics as high sensitivity, clarity and, especially, the possibility of determining a small amount of a substance to be tested in complex compounds. It is shown that this method is widely used in the determination of metabolites derived from toxic substances as a result of the metabolic process occurring in the body and in processes where an unknown substance causes intoxication or no standard sample.

One of the most powerful and universal methods for studying the structure of unknown substances in expert laboratories is the gas chromatographic determination with mass spectrometric detection (GC/MS), combining the possibility of a highly selective separation of the mixtures being studied, the possibility of identifying unknown substances by signals of molecular and fragment ions in mass spectra and high sensitivity. It is important to note that the method is based on the ionization of atoms and molecules of matter by splitting or releasing electrons, with the formation of positive ions and by determining the magnitude of the ratio of mass to charge.

In a comparative aspect, the reliability of identification is significantly increased as a result of using the specific characteristics of the substance on the basis of the mass spectrum indices, as well as the retention parameters in chromatographic separation. Due to the fact that the mass spectrum reflects the structure of the molecule, its detailed study, based on the known patterns of ion formation, allows us to conclude on the structure and formula of the unknown compound being analyzed.