

PRACTICAL APPLICATION OF SPECTROPHOTOMETRIC METHOD IN PHARMACEUTICAL ANALYSIS IN UKRAINE

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Today in Ukraine conducted the search of innovative medicines and dosage forms that are more effective and have fewer side effects, unlike existing drugs. For the development of new dosage forms and quality control of existing drugs increasingly used the following physical and chemical methods of analysis, including the widely used spectrophotometry.

Spectrophotometry - physical and chemical methods of research solutions and solids based on the study of the absorption spectra in the ultraviolet (200-400 nm), visible (400-760 nm) and infrared (> 760 nm) spectral regions. Basic dependence studied in spectrophotometry - the intensity of incident light absorption wavelength. [5]

This method is used to identify compounds that studies the composition, structure and quantitative analysis of individual substances and multicomponent systems. Qualitative analysis of substances by their absorption spectra carried out in two ways: on the known parameters of the absorption spectrum of the substance; comparing the absorption spectra of the solution of the standard substance and solution of the substance of the same composition.

Using spetrofotometry can analyze not only painted but also colorless solutions. To conduct this analysis is not visible, and ultraviolet - or infrared parts of the spectrum. The main instruments are the spectrophotometers, which, monohromatyzatsiya provided with special optical devices - monochromator that allow you to continuously change the wavelength of the electromagnetic radiation that passes through a solution that is analyzed.

In Ukraine, more established methods to quantify drugs in formulations using spectrophotometry. During the years 2011-2013 in Zaporozhye State Medical University (ZSMU) has been developed and published works on developing methods

spectrophotometric quantification of drug substances such as dimedrol, nimodipine, and glucosamine in medications.

Today the search and development of new dosage forms nimodipine for rational and effective therapy for cardiovascular diseases also need to develop new methods for accurate and sensitive quantification of the substance in the composition of new dosage forms. In 2011 is developed a new spectrophotometric method for the quantitative determination of nimodipine in pharmaceutical formulations. [1] This method is based on measurement of ethanolic nimodipine solutions absorption at 359 nm.

Glucosamine preparations appeared relatively recently in the pharmaceutical market of Ukraine, quality control of dosage forms containing glucosamine, is an urgent problem of our time. So, a new spectrophotometric method for the quantitative determination of glucosamine in pharmaceutical formulations is developed in 2012. [2]. This method is based on measurement of aqueous glucosamine solutions absorption at 510 nm. The proposed method is valid according to the validation requirements of Ukrainian Pharmacopeia.

Therapeutic activity dimedrol and low price ensures its popularity among patients and pharmaceutical manufacturers. Therefore it is necessary ensure quality control of medicines containing dimedrol. [3] And in 2013 are developed a new spectrophotometric method of quantitative determination of dimedrol based on its interaction with bromthymol blue in acetone solution and measuring the absorption of the reaction product in the visible spectrum at a wavelength of 400 nm.

The method was used for quantitation of dimedrol in two dosage forms - tablets produced by various Ukrainian pharmaceutical companies. The basic characteristics validated by the State Pharmacopoeia of Ukraine.[4] According to the obtained experimental data, the technique can be correctly reproduced and is suitable for use in pharmaceutical and forensic analytical laboratories.

Conclusions. In accordance with the above information, today in Ukraine actively using the spectrophotometric method of analysis for the development and control of new dosage forms.

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