

QUANTIFICATION OF METHYLURACIL BY THE METHOD OF SPECTROPHOTOMETRY

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Introduction: the search of easy and not-time consuming methods of analysis of active pharmaceutical ingredients is being carried out at the Pharmaceutical Chemistry Department of National University of Pharmacy. Methyluracil (6-methyl-1,2,3,4-tetrahydropyrimidine-2,4-dione) belongs to non-steroidal anabolic medications for the systemic use and the external application. It accelerates the processes of cellular regeneration and healing of wounds. It also has an anti-inflammatory effect. A characteristic feature of the medication is the stimulation of erythropoiesis and especially leucopoiesis, hence it is also referred to the group of leucopoiesis stimulants. Methyluracil is not included neither in the European Pharmacopoeia no in the State Pharmacopoeia of Ukraine but is present in the Russian Pharmacopoeia. The assay of methyluracil by the Russian Pharmacopoeia is carried out by the method of non-aqueous acid-base titration that needs the special appliance and such hazardous organic solvents as methanol and benzene.

Purpose of the study: The aim of our work was to check the possibility of usage of ultraviolet spectrophotometry method for the quantification of methyluracil and the development of a procedure for its assay.

Materials and methods: We used the analytical balance Axis ANG-200 and the measuring glass wear of class A. For the spectrophotometric investigations we used the spectrophotometer Evolution 60S. The statistical studies were carried out by the common procedure.

The electron absorption spectra of methyluracil in water and ethanol were studied. It was found that its spectra in water and ethanol have the absorption maximum at 265 nm and 267 nm.

The specific absorbance of methyluracil in water solution in the maximum at 265 nm was calculated. Its metrological characteristics were determined.

As the spectrophotometric quantification of methyluracil can be carried out by the methods of specific absorbance and the method of standard the corresponding procedures were developed. The validation characteristics that prove the possibility of the suggested methods for the assay of methyluracil were obtained.

Results and conclusion: The simple UV spectrophotometric procedure for the assay of methyluracil that provides good accuracy of the results has been developed.