PHOSPHORIMETRIC DETERMINATION OF β-ADRENOACCEPTOR BLOCKERS IN MULTI-INGREDIENT PHARMACEUTICAL PREPARATIONS

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It is well known that nitrogen heterocyclic compounds play one of key roles in processes of vital activity of human body. Owing to the high biological activity they are widely applied in medicine for treatment of various diseases. More than 60% of the most widespread synthetic preparations contain heterocyclic compounds as an active component. Pindolol and propranolol are a beta-adrenoacceopter blockers with wide variety of indications in medical practice, such as treatment of hypertantion, cardiac arrhythmia, angina and thyrotoxicosis.

Because of the growth the amount of falsificated products in the markets of developing countries, the development of time consuming methods for the analytical control of pharmaceutical preparations is an important problem. At the present time according to the US Pharmacopoeia, titration (for pure substances) and high-performance liquid chromatography (for combined preparations) are methods used for the determination.

Luminescence analytical methods found wide application for the determination of active components in pharmaceutical preparations. The determination of the target component in the presence of fluorescing impurities by conventional fluorimetric procedures is commonly complicated by spectral overlaps, absorption of the fluorescence of one component by the others, etc. A more reasonable technique consists in the determination of some nitrogen heterocyclic compounds on the basis of phosphorescence measurements, because the triplet states of the analyte molecules are more characteristic in comparison with the singlet states. The selectivity of the determination is substantially improved by the time selection of the analytical signal.

The aim of this work was is to examine the possibility of the determination of pindolol in multi-ingredient pharmaceutical preparations by measuring the phosphorescence intensity at room temperature in aqueous, homogeneous micellar and mixed micellar solutions.

The direct determination of the beta-adrenoacceopter blockers in multi-ingredient medicinal preparations was performed according to the developed procedure. Results of the determination of the active components in pharmaceutical preparations using RTP in micellar and aqueous solutions are presented and will be discussed in details.