

BROMHEXIN EXPLOSION FROM BIOLOGICAL MATERIAL BY GENERAL METHODS

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Introduction. The object of our study is the drug mucolytic action bromhexine (bivalvon). Indications for use are diseases of the respiratory tract that occur with the formation of viscous secretions. Bromhexine is used in acute and chronic bronchitis, pulmonary tuberculosis, acute and chronic pneumonia. The literature describes cases of poisoning with bromhexine, therefore the drug is of interest in the chemico-toxicological attitude.

Aim. One of the most responsible stages, which includes the entire further course of chemical and toxicological analysis, is the stage of separation of substances from objects of biological origin. The purpose of our study was to investigate the effectiveness of conventional methods for isolating substances of the basic nature in relation to bromhexine.

Materials and methods. When bromhexine was isolated from biological material, we used the commonly used methods of isolation: the method of A. O. Vasilieva (water isolation with oxidized oxidation of oxalate), the Stas-Otto method (the isolation with oxidized acid oxidation). Identification and quantitative determination of the drug in the extracted extracts was carried out.

Results and discussion. The identification of bromhexine was carried out by chromatography in a thin layer of sorbent (solvent systems of hexane-toluene-diethylamine (75:15:10), developers - Dragendorff reagent and azo-coupling reaction), UV - spectroscopy ($\lambda_{\max} = 245 \text{ nm}$ and $\lambda_{\max} = 310 \text{ nm}$), color reactions (Freed and Mandelin reagents). Quantitative determination was performed using extraction photometry with methyl orange and UV - spectroscopy in 0,1 M chloride acid solution ($\lambda_{\max} = 310 \text{ nm}$). Comparing the amount of the selected substance with the indicated methods, it was established that by A. O. Vasilieva method 12-15% of bromhexine is isolated, by Stas-Otto method 4-6%.

Conclusions. This comparative evaluation of the selection of bromhexine from biological material generally accepted in the chemico-toxicological analysis methods (water, acid oxidized oxalate, alcohol, acidified acid oxalate). It is established that these methods allow to distinguish from 4% to 15% bromhexine from a biological material.

DETECTION OF VERAPAMIL BY REACTION STAINING AND BY TLC

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Introduction. Verapamil – 2-(3,4-dimethoxyphenyl)-5-[2-(3,4-dimethoxy-phenyl)ethyl-methylamino]-2-propan-2-ylpentanenitrile – is a medication used for the treatment of high blood pressure, chest pain from not enough blood flow to the heart, and supraventricular tachycardia. It may also be used for the prevention of migraines and cluster headaches.

Forensic medical diagnosis of intoxication by verapamil is a difficult task. This is one hundred clinical picture of poisoning with medication is uncommon. Moreover, it does not cause a specific morphological changes in the organism.

Therefore, the development of methods of forensic chemical analysis of verapamil is an urgent task.

Aim. The aim of our work is to develop a detection of verapamil conditions in the presence of other drugs with similar pharmacological effects, with color reactions and Thin-layer chromatography (TLC).

Materials and methods. Color reactions are performed on the white ceramic plates, using a 0.05% solution in ethanol etmozina obschealkaloidnye and reagents: Stamps, Mandelina, Erdman, Lieberman, Fred. To detect of verapamil TLC glass plates used for high-performance thin layer chromatography