

## QUALITATIVE ANALYSIS OF MEDICINES

### CO-TRIMOXAZOLE

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In addition of the research of the department of analytical chemistry a qualitative analysis of the drug "Co-trimoxazole", tablets (400mg / 80mg) № 20 in blisters was carried out. Active ingredients: 1 tablet contains sulfamethoxazole – 400.0 mg trimethoprim - 80.0 mg. Co-trimoxazole – is a combined antibacterial drug chemical therapeutic agent with wide spectrum of bactericidal action, conditioned by blocking of biosynthesis of folates in microbial cells: sulfamethoxazole violates syntheses of dihydrofolic acid, trimethoprim prevents its turning in tetrahydrofolic acid.

The drug has been adopted in the treatment of respiratory infections; urinary tract; digestive tract; surgical infections and other infectious diseases.

During the experiment parameters confirming the authenticity of the substances Sulfamethoxazole and Trimethoprim were studied. Legacy IR absorption spectra tablets KBr (1%); the results of UV-absorption spectra in 0.1 M hydrochloric acid solution, absorption peaks were recorded for sulfamethoxazole with  $\lambda_{max} = 265\text{nm}$  ( $A = 0.394$ ,  $c = 1.57 \cdot 10^{-4} \text{ mol / dm}^3$ ), for trimethoprim with  $\lambda_{max} = 270\text{nm}$  ( $A = 0.612$ ,  $c = 2.7 \cdot 10^{-5} \text{ mol / dm}^3$ ).

Chromatography sulfamethoxazole solution in methanol plates «Silufol» in the system chloroform-isopropanol-diethylamine (6:5:1) revealed the manifestation spot UV light,  $R_f = 0.33$ . For trimethoprim in the same conditions  $R_f = 0.52$ . Sulfamethoxazole was identified in qualitative reaction on the primary aromatic amine (the formation of the diazonium salt, followed by coupling, with a solution of  $\beta$ -naphthol in alkaline medium); additional test was performed which was proposed by the British Pharmacopoeia on Trimethoprim using 2% solution of  $\text{KMnO}_4$  in 0.1 M NaOH, formaldehyde solution, sulfuric acid at reflux. When adding chloroform its layer under UV light acquired green fluorescence.

To confirm the authenticity of the drug "Co-trimoxazole" the method of thin layer chromatography in a solvent system of chloroform-isopropanol-diethylamine (6:5:1) was tested in the presence of standard samples of substances witnesses - substances sulfamethoxazole and trimethoprim that meet regulatory requirements.