

THE ASPECTS OF IDENTIFICATION OF SULFANILAMIDE PREPARATIONS WITH THE HELP OF TEST-KITS WITH THE HEAVY METALS SALTS

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In the modern world, the express methods of investigation are getting used more and more often in different spheres of science and everyday life. Relatively simple, cheap methods and means of analysis, called test-kits, are used. Using test kits for quality control is promising and can significantly reduce the time and substances, while maintaining a sufficient level of quality. At present, a test-kit based on FeCl_3 has been introduced to the pharmaceutical practice. The development of other test-kits with the salts of heavy metals (CuSO_4 , CoCl_2) is being conducted.

The aim of our work was to check the possibility of using test-kits for identification of sulfanilamide preparations while conducting the pharmaceutical analysis of extemporal medicines (EM). The role of sulfanilamide preparations in medicine is hard to overestimate. Being used in many spheres (ophthalmology, otolaryngology, etc.) even now, in “the era of antibiotics”, they haven’t lost their value and popularity. While conducting the experiment reagents responding to the requirements of the State Pharmacopoeia of Ukraine, “F” brand filtration paper, proper substances of medical preparations: sulfacylum-natrium, norsulfazolum natrium and aethazolum natrium, have been used. The choice of substances we justified in that sodium salts of sulfonamides give clear analytical colorful effects and do not require the addition of alkali during the reaction with Cu^{2+} , Co^{2+} , Fe^{3+} .

The results of the investigation of sulfanilamide preparations with the test-kits based on the filtration paper, modified FeCl_3 , CuSO_4 , CoCl_2 have been compared to the results in test-tubes and object plates, and with the results of blank experiments where the substances under investigation have been replaced by purified water.

After the experiments have been conducted it was determined, that the test-kit based on FeCl_3 gives an opportunity to identify the presence of sulfanilamides in the substances, however, due to the same analytical effect on the three medical preparations under investigation they can’t be distinguished. With the help of the test-kits of modified CuSO_4 and CoCl_2 chemist analyst can easily distinguish one sulfanilamide from another one: with CuSO_4 sulfacylum-natrium provides bluish green colouring, norsulfazolum natrium – dark purple, aethazolum natrium – green; with CoCl_2 : norsulfazolum natrium provides bluish purple colouring, aethazolum natrium – pinkish white and sulfacylum-natrium doesn’t provide a certain analytical effect with the given analytical tool.

Test-kits based on filtration paper with the salts of heavy metals can be used to identify sulfanilamide preparations in aqueous solutions of EM. Test-kits made of copper (II) sulfate are preferable as they help to distinguish different sulfanilamide preparations. Test-kits made of cobalt(II)chloride can be used to identify aethazolum and norsulfazolum natrium, and test-kits made of ferum(III) chloride aren’t optimal for identification of the given sulfanilamide preparations.