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NATIONAL UNIVERSITY OF PHARMACY

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For a wide audience of scientists and pharmaceutaical and medicinal employees.

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DEVELOPMENT OF CONDITIONS FOR ORNIDAZOLE DETECTION BY THE METHOD OF THIN-LAYER CHROMATOGRAPHY

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Introduction. Ornidazole is attributed to the group of antiprotozoal medicines and widely used for treatment of infectious diseases; at the same time it is possessed of quite a number of side effects showed by classic symptoms of acute intoxication, especially when interacting with alcohol.

Aim. The research purpose is to develop the conditions of ornidazole identification by the method of chromatography in thin layers of sorbent.

Materials and methods. Ornidazole of pharmacopoeial purity was used in the experiment; its solutions in ethanol with the concentration of 1 mg/mL and 0.1 mg/mL were prepared.

The chromatographic plates Sorbfil® PTLC-PH (silica gel STC-1HP, PETP, silica sol, 8 ÷ 12 µm fraction, 100 µm layer thickness) purchased from IMID LLC (Russia) were used as the thin layers.

Results and discussion. The chromatographic behaviour of ornidazole has been studied in 18 mobile phases: 1. chloroform – acetone (8:2); 2. ethyl acetate; 3. chloroform – methanol (9:1); 4. ethyl acetate – methanol – 25% NH₃ (85:10:5); 5. methanol; 6. methanol – *n*-butanol (6:4); 7. methanol – 25% NH₃ (100:1.5); 8. cyclohexane – toluene – diethylamine (75:15:10); 9. acetone; 10. chloroform – dioxane – acetone – 25% NH₃ (47.5:45:5:2.5); 11. toluene – acetone – ethanol – 25% NH₃ (45:45:7.5:2.5); 12. chloroform – *n*-butanol – 25% NH₃ (70:40:5); 13. chloroform; 14. chloroform – methanol – CH₃COOH conc. (90:10:1); 15. toluene – CH₃COOH conc. (3:1); 16. toluene – methanol – CH₃COOH conc. (9:1:1); 17. ethyl acetate – methanol – CH₃COOH conc. (85:10:2.5); 18. chloroform – methanol (1:1).

When using the mobile phases 3, 5, 8, 9 the investigations were carried out also at the plates processed previously with 0.1 mole/L KOH solution in methanol and then dried at 110°C for 30 min. In the mobile phase 6 the plates were previously processed with 0.1 mole/L NaBr solution.

UV-light, ninhydrin spray, the Dragendorff spray, acidified iodoplatinate solution, the Van Urk reagent and 0.1 mole/L KOH solution in methanol were used for developing the spots of ornidazole at the plates.

Conclusions. The chromatographic mobility of ornidazole has been studied under the conditions of TLC-screening using general and some individual systems of solvents. The reagents for the ornidazole spots development on chromatographic plates have been offered; their sensitivity has been ascertained.

CHOICE OF DEVELOPING REAGENTS FOR EFAVIRENZ ANALYSIS BY THE METHOD OF TLC

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Introduction. Efavirenz is a non-nucleoside reverse transcriptase inhibitor and attributed to the group of antiretroviral medicines used for treatment of HIV infection. Efavirenz is possessed of quite a number of side effects showed by psychiatric symptoms, including insomnia, nightmares, memory loss, depression, and anxiety. Treatment with efavirenz accompanies with certain neuropsychological symptoms in 50% of cases; its neurotoxicity exceeds other antiretroviral medicines

Aim. To choose the developing reagents and conditions of their application for efavirenz identification by the method of chromatography in thin layers of sorbent.