Results and discussion. Two mobile phases of chloroform – acetone (80:20) (R_f=0.36) and methanol – *n*-butanol (60:40) (R_f=0.84) (or methanol – 25% ammonia (100:1.5) (R_f=0.78), or toluene – acetone – ethanol – 25% ammonia (45:45:7.5:2.5) (R_f=0.87), or ethyl acetate – acetone – 25% ammonia (50:45:4)(R_f=0.78)) had a low correlation of R_f values (are given for Merk plates). Absorption maxima were detected at wavelength of 228±2 and 254±2 nm. The calibration curve was described by the following equation: y=(0.0566±0.0008)x+(0.070±0.008)·(r=0.9996), LOD and LOQ values were of 0.2 μg/ml and 0.7 μg/ml, respectively. The linearity of the calibration curve was within the range of cinnarizine concentrations from 1.0 to 18 μg/ml.

Conclusions. The developed methods of cinnarizine detection and quantitative determination using TLC and UV spectrophotometry are sensitive and selective enough for chemical-toxicological analysis.

UV-SPECTROPHOTOMETRIC DETERMINATION OF TINIDAZOLE IN ACID MEDIUM

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Introduction. Tinidazole – 1-[2-(ethylsulfonyl)ethyl]-2-methyl-5-nitro-1H-imidazole – is the derivative of 5-nitroimidazole and the medicine from the group of antiprotozoal compounds widely used for treatment of infectious diseases.

Aim. To develop UV-spectrophotometric procedure of tinidazole quantification using 0.1 M HCl solution as a solvent and carry out step-by-step validation of the developed procedure to choose the optimal variant for further application.

Materials and methods. Tinidazole was of pharmacopoeial purity. All spectrophotometric measurements were carried out using a single beam UV/VIS spectrophotometer SPEKOL®1500 (Analytik Jena AG, Germany).

The stock and model solutions were prepared by dissolving tinidazole in 0.1 M hydrochloric acid solution.

The absorbance of the solutions was measured 3 times with randomization of cell position. 0.1 M hydrochloric acid solution was used as a compensation solution.

Results and discussion. UV-spectrum of the tinidazole solution in 0.1 M HCl has the absorption maximum at λ_{max} = 277 nm. The value of specific absorbance has been calculated for the concentration range of 5 – 35 μg/mL and $A_{1\,cm}^{1\%}$ = 253.

Validation of the developed procedure has been carried out by model solutions in the variants of the method of calibration curve and method of standard. Such validation parameters as in process stability ($\delta^{model\ stability}$ = 0.48%), linearity/calibration model (*D* = 25% – 175% in normalized coordinates, b^{model} = 0.990±0.020, a^{model} = –0.966±1.647, RSD_0^{model} = 1.571% and R_c^{model} = 0.9994), accuracy ($\bar{Z}^{model}$ = 100.74%, $\overline{RR}^{model}$ = 99.95%) and precision (Δ_Z^{model} = 4.54%, Δ_{RR}^{model} = 3.62%) have been estimated by model solutions.

The total results of validation allow to point to the conclusion about acceptable linearity, accuracy and precision of the developed UV-spectrophotometric procedure of tinidazole quantitative determination in the variants of the method of calibration curve and method of standard.

Conclusions. A new procedure of tinidazole quantitative determination by the method of UV-spectrophotometry has been developed using 0.1 M HCl solution as a solvent; its acceptability for application has been shown.