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# **BOOK OF ABSTRACTS**

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## The use of IR-spectroscopy for identification of hydrochlorothiazide in finished dosage forms

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Currently, when analyzing active pharmaceutical ingredients (APIs) in medicines the method of absorption spectrophotometry in the infrared region is finding increasing use. This method is pharmacopoeial and is widely used in the analysis of individual substances. At the same time, in recent years the American and British Pharmacopoeias use the method of IR-spectroscopy for identification of active substances in dosage forms.

The aim of this work was the application of the method of IR-spectroscopy for identification of hydrochlorothiazide in individual and combined dosage forms, such as “Hydrochlorothiazide” tablets of PJSC SPC “Borschagovsky CPP”, “Triampur Compositum”, “Captopres – Darnitsa”, “Capotiasidum®” (Arterium Corporation), “Enalapril-H” (LLC Zdorovye), “Liprazid”, “Ramizes Com” (JSC Farmak) with the content of APIs of 50 mg and magistral formulas (powders and syrups).

Extraction of hydrochlorothiazide from dosage forms was performed with sodium hydroxide solution according to the method of the monograph “Hydrochlorothiazide Tablets” USP 38, and after transferring in the acid form it was extracted with ether. In its turn, according to the monographs of the British Pharmacopoeia “Hydrochlorothiazide Tablets”, “Co-amilozide Tablets”, “Co-triamterzide Tablets” hydrochlorothiazide from drugs was extracted with acetone. In the first and the second case the organic solvent was removed by drying. The IR spectra were recorded in potassium bromide tablets on a “Tensor 27” (“Bruker optic GmbH”) spectrophotometer in the region of 400-4000 cm<sup>-1</sup> or recorded on a “Smart Performer” accessory with ZnSe crystal of “Nicolet 380” FT-IR Spectrometer (Thermo Fisher Scientific) in the region of 500-4000 cm<sup>-1</sup>.

It has been found that the IR spectra of extracts obtained by two ways from medicinal forms coincide with the IR spectrum of the pharmacopoeial reference standard of hydrochlorothiazide. The exception is the drug mixtures of hydrochlorothiazide with captopril, namely tablets – “Captopres-Darnitsa” and “Capotiasidum®”, since the characteristic bands that are present in both compounds are observed in the IR spectra of extracts of these tablets.

Therefore, the results obtained after studying the validation characteristics can be included in the monograph of the State Pharmacopoeia of Ukraine for identification of hydrochlorothiazide in finished dosage forms.