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**DEVELOPMENT OF UV-SPECTROPHOTOMETRIC METHOD OF
QUANTITATIVE DETERMINATION OF THE ANTIDEPRESSANT
MELIPRAMINE**

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Introduction. Antidepressant poisonings occupy a leading position among the psychotropic drug intoxications all over the world. Melipramine (10,11-Dihydro-*N,N*-dimethyl-5H-dibenz[*b,f*]azepine-5-propanamine hydrochloride) is a tricyclic antidepressant. Cases of acute and lethal poisoning by melipramine has been registered. Postmortem fluid and tissue distribution of melipramine were within the range for various cases: blood 0.8 – 13 mg/L, liver 75 µg/g, urine 0.8 – 12.7 mg/L. According to the literature the main trend of development of bioanalytical methods for melipramine determination is the prevalence of gas chromatography and high-pressure liquid chromatography with mass spectrometric detection [1, 2]. However, these methods of the analysis are not always available for the toxicological laboratory.

Aim of the study. The aim of this study was to develop simple and sensitive method for melipramine quantitative determination with using UV-spectrophotometry suitable for the chemotoxicological analysis.

Materials and methods. The UV-spectrum of melipramine in 0.1 M hydrochloric acid solution was measured over 215–380 nm wavelength range, 10 mm light pathway cuvette was used. The reference solution was 0.1 M hydrochloric acid. Stock solution (30 µg/mL) and 9 working standard solutions (WSS) (1.5; 3.0; 6.0; 9.0; 12.0; 15.0; 18.0; 24.0 and 27 µg/mL) of the drug were prepared.

Results. Melipramine had the absorption maximum at 251 nm ($E_1^1 = 284$; $\varepsilon = 9003$). The absorption values obtained were processed by linear regression method. The equation of the regression line was the following: $Y = (0.0421 \pm 4 \cdot 10^{-4}) \cdot X - (0.043 \pm 0.008)$; $r = 0.999$; LOD and LOQ values were, respectively, 0.3 µg/mL and 1.0 µg/mL. The linearity of the calibration curve was within the range of melipramine concentrations from 1.5 to 30.0 µg/mL.

Conclusions. Thus, the UV-spectrophotometric method developed satisfies the requirements of the chemotoxicological analysis by the sensitivity and can be used in toxicological study of the biological samples for presence of melipramine.

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