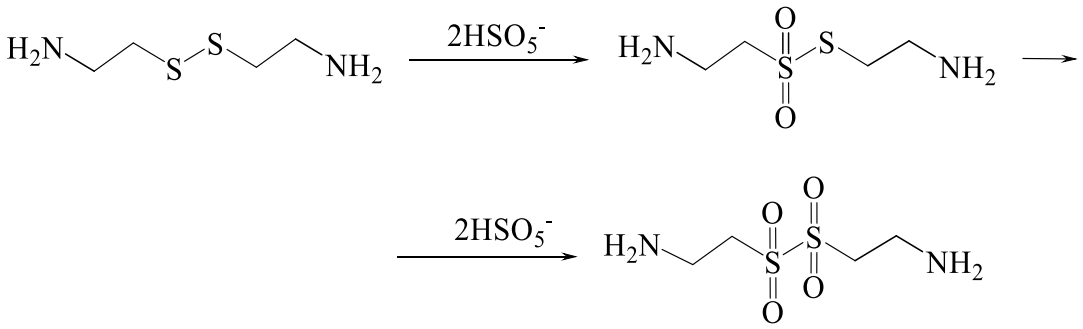
reaction slows down, implying that the later stages of formation of the corresponding of disulfone (or tetraoxo) Cystamine $NH_2(CH_2)_2S(=O)_2S(=O)_2(CH_2)_2NH_2$) by means hydrogenperoxomonosulphate anions are slower or more complex. A suitable mechanism scheme based on these observations is proposed and given in the following equations (**Scheme**):



With this proposed method, 2,0-10 mg of Cystamine dihydrochloride can be accurately and precisely analyzed (RSD<1.6%, $|\bar{x}\text{-}\mu| \leq \frac{ts}{\sqrt{n}}$). The advantages of the applied analytical techniques in the determination of Cystamine dihydrochloride acid in tablets «Cystamine 0.2 g» has been presented. The recovery was 102.45±1.50%).

Conclusions. The possibility of application of $KHSO_5$ as reagent in the oxidimetric determination of Cystamine dihydrochloride was shown. Statistical analysis of the results obtained by the proposed and the official methods reveals no significant differences between them in accuracy and precision as concluded from Student's t test and the variance ratio.

THE CHROMATOGRAPHIC DETECTION OF LAMOTRIGINE IN BIOLOGICAL SAMPLES

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Introduction. Epilepsy is one of the most common and dangerous neurological disorder all over the world. According to data of the International League against Epilepsy (ILAE) annually 50-70 cases per 100,000 populations are registered in the most developed countries of the world. Anticonvulsants are a diverse group of pharmacological agents used in the treatment of epileptic seizures. Lamotrigine (phenyltriazine derivative) is one of the most common. However, the websites of FDA and patientsville.com cases of lamotrigine lethal poisoning mainly due to suicidal overdoses registered in over 30 countries.

Aim. The aim of the work was to develop the conditions for detection of lamotrigine in biological samples by TLC.

Materials and methods. The study was performed on Merck silica gel 60 F_{254} chromatographic plates (Germany) with the size of 10×10 cm. Before samples eluating the chromatographic plates were previously washed with methanol and activated in oven at 110-120°C for half an hour.

The following systems of solvents were used as mobile phases: butanol-glacial acetic acid-water (30:5:15); ethyl acetate-methanol-25% ammonium solution (17:2:1); chloroform-butanol-25% ammonium solution (70:40:5); chloroform-methanol (9:1); methanol-25% ammonium solution (100:1.5); butanol-glacial acetic acid-water (15:5:30); methanol-butanol (60:40); chloroform-ethanol (20:1); ethyl acetate-chloroform-water (9:3:2.5).

Chromatographic method. Standard chromatographic chamber was previously saturated with eluent vapor's for 30 min. 2 ml of lamotrigine chloroform extracts, obtained from the liver tissues were evaporated to the minimal volume of 0.05 ml. Five μL of lamotrigine extracts were applied at the starting line of the previously activated chromatographic plate with a glass capillary. Five μL of test solutions of

lamotrigine (5 μg in the sample) and caffeine (10 μg in the sample) were applied at the distance of 1 cm. The chromatographic plate was placed into the chamber with the corresponding mixture of solvents and eluated. When the solvent front passed 8 cm from the starting line, the plate was removed from the chamber, air-dried, examined under UV-light at 254 nm and treated with Dragendorff's reagent.

Results and discussion. The elaboration of proposed conditions for the detection and identification of lamotrigine by TLC was performed with extracts obtained from liver tissues. For verifying the suitability of chromatographic systems, tested samples of lamotrigine were administered in parallel with caffeine. The chromatographic system was considered suitable, if clear visible spot of caffeine were on chromatogram. Obtained results are given in Table 1.

Table 1

Parameters of the chromatographic mobility of lamotrigine

№	Chromatographic system	Rf values	
		Lamotrigine	Caffeine
1	Butanol-glacial acetic acid-water (30:5:15)	0.43±0.02	0.31±0.02
2	Ethyl acetate-methanol-25% ammonium solution (17:2:1)	0.58±0.01	0.45±0.02
3	Chloroform-butanol-25% ammonium solution (70:40:5)	0.60±0.02	0.42±0.01
4	Chloroform-methanol (9:1)	0.33±0.02	0.24±0.02
5	Methanol-25% ammonium solution (100:1.5)	0.70±0.01	0.43±0.02
6	Butanol-glacial acetic acid-water (15:5:30)	0.66±0.02	0.45±0.01
7	Methanol-butanol (60:40)	0.25±0.02	0.13±0.01
8	Chloroform-ethanol (20:1)	0.88±0.02	0.53±0.02
9	Ethyl acetate-chloroform-water (9:3:2.5)	0.81±0.01	0.46±0.02

Conclusions. It has been found that lamotrigine shows the chromatographic mobility in all used solvent systems with Rf values from 0.25±0.02 to 0.88±0.02. Systems of butanol-glacial acetic acid-water (30:5:15) with values Rf=0.43±0.02 and ethyl acetate-methanol-25% ammonia solution with values Rf= 0.58±0.01 has been considered as the most suitable for analytical diagnosis of lamotrigine acute poisonings.

ANTIOXIDANT ACTIVITY OF ANISE OIL AND ITS ANALYTICAL APPLICATION

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Introduction. Anethole (1-methoxy-4-propenylbenzene) - the main component of the essential oils of Anise (*Anisum vulgare Gaeth*.) and Fennel (*Foeniculum vulgare Mill*.). Due to the reflex effect on the gastric and intestinal mucus receptors, it causes the expectorant and laxative action of the drugs from them. Anethole also shows an antimicrobial activity.

As anethole in essential oils in a mixture with other terpene compounds and does not contain strongly functional groups, quantitative determination of it, based on the application of classical chemical or physicochemical methods, is a rather difficult task.

For the medicinal plant raw material Anise and Fennel, as well as Liquor Ammonii anisatus, the Pharmacopeia provides for the definition of the total content of essential oils. During the analysis of essential oil of Fennel, indicators such as density, refractive index, etc. are determined, and then on the