(10%) with allowable value of the correlation coefficient (0.99) can be achieved with a number of concentration levels more than 8. The procedure is effective in the range of 0.14 – 0.70 mg/mL, the detection limit is 0.05 mg/mL. The accuracy of procedure is characterized by satisfactory indicators.

Using the proposed procedure the quantitative determination of urea in commercially available milk samples has been carried out.

Conclusions. Application of the proposed procedure allows to quantify the urea content in milk samples and obtain correct and accurate results.

DEVELOPMENT OF ASSAY METHOD OF TRANS-10-HYDROXY-2-DECENOIC ACID (10-HDA) IN ROYAL JELLY AND FOOD SUPPLEMENTS BY HIGH PERFORMANCE THIN LAYER CHROMATOGRAPHY

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Introduction. Royal jelly (RJ) is a yellowish-white secretion from the hypofaringeal and mandibular glands of nurse bees. It is a complex compound, which consists of amino acids, carbohydrates, proteins, sugars, lipids, also minerals and vitamins. The unique feature of RJ is fatty acid, (2E)-10-hydroxydec-2-enoic acid (10-HDA). Since only RJ from bee products contains it. Thus, this compound is a biomarker of RJ, and amount of 10-HDA shown the quality of its commercial products. In the past few years, consumption of RJ as a dietary supplement is consistently growing across the world. That's why the determination of 10-HDA is very important. TLC method was developed to detect the 10-HDA content in royal jelly, lyophilized tablets and capsules.

Aim. The aim of this study is to develop method of quantitative and qualitative determination of 10-HDA in fresh royal jelly and in different food supplements, such as lyophilized tablets and capsules, which contains royal jelly.

Materials and methods. Standard solution was prepared by diluting of 10-HDA weight in methanol. Test solutions were prepared by using to different techniques. Weight of lyophilized tablets, which contains 70 mg of royal jelly, was sonicated with usage of methanol, as an extractor.

The content of capsules, which contains 60 mg of royal jelly, was extracted with a portion of diethyl ether (15 ml), then non-soluble material was extracted with methanol (3x15ml), duration of each extraction was 15 min. Raw material of RJ was extracted using the same method. Extracts were evaporated with liquid nitrogen and were diluted in 1 ml of the same solvent. The separation was performed on silica gel plates (HPTLC Silica gel 60 F_{254}) using a mixture of chloroform: methanol: water (65:35:7) as mobile phase, migration distance was over path of 80 mm. The standard and test samples were spotted in the form of bands of width 6 mm. The determination was performed after post-chromatographic treatment with a 5% solution of potassium dichromate in sulfuric acid, then plate was heated at 150 ˚C and examined with using CAMAG TLC Visualizer 2 at 366 nm.

Results and discussion. The photo of TLC plate separation obtained at 366nm (Figure 1) shown the presence of 10-HDA in all of the analyzed extracts. The intensity of the bands separated on the silica gel plate is different in analyzed samples, it shows that it can be differences between concentration of 10-HDA in different forms of supplements. Spots of test samples were coresponded to the spot obtained from standard solution and all of them had Rf=0,77. We obtained good separation in tablets, capsules and raw material tests samples. (Fig. 1) The average amount of 10-HDA in capsules is 0,88 mg per average mass of capsule, while in tablets is 1,93 mg. The amount of 10-HDA in raw material was 0.80%.The regression coefficient of main substance calibration curve ($R2$) was 0.9991 (Fig.1). The precision of the method met all requirement of ICH guidelines, since all the obtained relative standard deviation (RSD) values were lower than 2.0%.

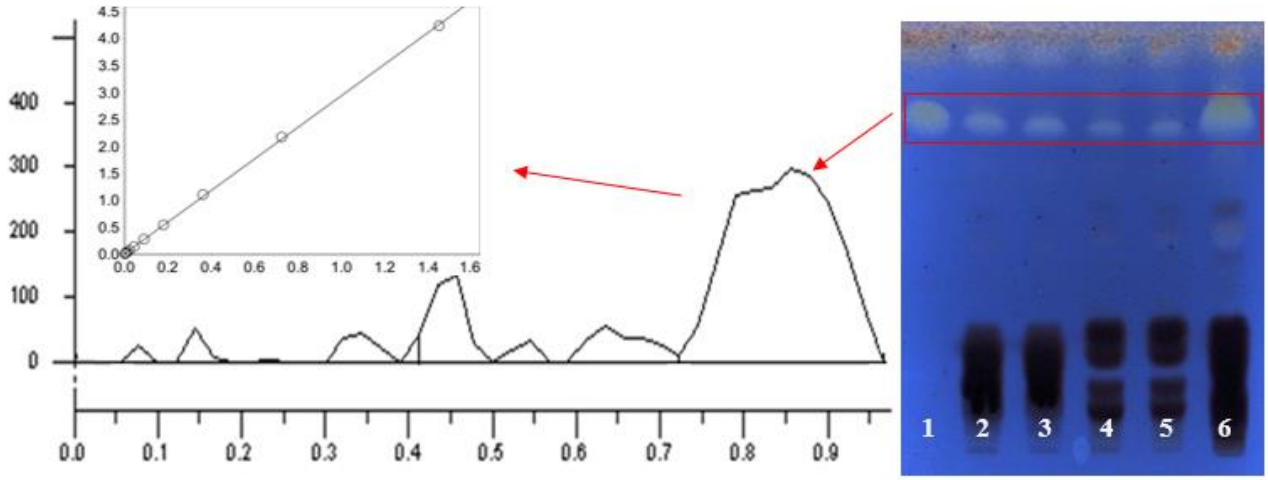

Figure 1. The qualitative and quantitative graphic of 10-HDA determination from analyzed samples: 1- standard solution; 2,3- tablets; 4,5-capsules; 6-raw material of royal jelly

Conclusion. A Thin Layer Chromatography (TLC) method for the separation and determination of 10-HDA in food suplements (such as lyophilized tablets, capsules) and raw materials obtained from Germany was developed and validated according to ICH guidelines.

SEARCH OF REAGENTS FOR THE ANALYTICAL DIAGNOSTICS OF COMBINED PROHLORPERAZINE PROBLEMS

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Introduction. Acute poisoning with psychotropic drugs is often associated with their use for self-medication and suicidal purposes. According to various sources, up to 40% of cases of poisoning with psychotropic drugs are observed in patients with mental illness. Prochlorperazine is a phenothiazine derivative used as a neuroleptic drug for the treatment of schizophrenia, anxiety disorders and migraines. It is also effective for the treatment of nausea and vomiting. To date, prochlorperazine is produced as a generic agent in many countries of the world in various pharmaceutical forms. A significant number of trade names and manufacturers increases the availability of treatment for the aforementioned diseases. However, there is an increased risk of complications due to side effects and overdose of prochlorperazine.

Aim. Search for reagents for the detection of prochlorperazine in seizures from biological objects with combined poisoning by drugs.

Materials and methods. The studies used drugs that were withdrawn from the appropriate dosage forms (tablets): prochlorperazine, aminasin, triftazine and ibuprofen. Chromogenic reagents: FPN, $FeCl_3$, Marquis, Froehde, Mandelin and Liebermann.

Results and discussion. In the domestic literature, data on the side effects and effects of acute prochlorperazine poisoning are briefly described, while in the foreign and on the websites Food and Drug Administration (FDA), patientaville.com and ehealthme.com for more details. According to these sites, a number of cases of acute poisoning have been recorded in many countries of the world. In particular, in the period from 2010 to 2016, 258 cases were reported in controlled and uncontrolled use of prochlorperazine. Among the main causes of acute poisoning are side effects of the drug during treatment in therapeutic doses, while fatal cases are mainly due to suicidal overdose of the drug in doses that exceed the therapeutic ones dozens of times, as the case may be. The risk of poisoning is aggravated by factors such as alcohol consumption, drug therapy, liver disease, kidneys, etc.

So, according to sites patientsville.com. and ehealthme.com combined prochlorperazine poisoning have been caused by drug interactions, drug misuse, unintentional and intentional overdose,