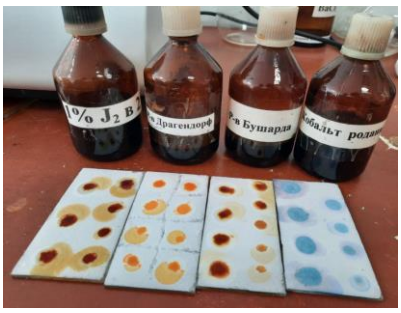

Fig-1. Spot detection of metformin with different reagents. 1-1% of iodine in 2% KJ , 2-reagent Dragendorff a 3-reagent Bouchardat , 4-reagent cobalt thiocyanate .

Table 1

TLC detection limit for metformin

Test substance	The amount of mcg	Developers (reagents)				
		Mandelin	So thiocyanate	Lugol	Bouchard	Dragendorv
metformin	five	+	+	+	+	+
	four	+	+	+	+	+
	3	-	+	+	+	+
	2	-	+	+	+	+
	one	-	+	+	+	+
	0.5	-	-	+	+	+

"+" Positive result, "-" negative result

Conclusions. From the data presented in Fig. 1 and in table 1 it follows that the best developers for detecting the zone of localization of metformin are Bouchard , Dragendorv , a solution of 1% iodine in 2% KJ , the detection limit is 0.5 μg.

DETERMINATION OF THE DEGREE OF ESTERIFICATION AND MASS FRACTION OF POLYURONIDES OF PECTIN SUBSTANCES OF ANISE (PIMPINELLA ANISUM L.) HERBS

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Introduction. Pectin substances are polysaccharides, the main component of which is polyuronic acids. Pectin substances possess adsorbent, antacid, cholesterol-lowering properties.

Pimpinella anisum L. - a plant belonging to the Umbelliferae family (Apiaceae), used in folk medicine around the world since ancient times. Anise is characterized by antiviral, anticonvulsant and antitoxic effects. Anise preparations are used to treat diseases of the upper respiratory tract.

Previously, we have proved a laxative effect and established antimicrobial action against Bacillus subtilis, E. coli of pectin substances isolated from the herbs of anise. Their monosaccharide composition was studied by thin layer and liquid chromatography.

Aim. Determination of the degree of esterification and mass fraction of polyuronides of pectin substances of anise herbs.

Materials and methods. The material of the research was pectin substances isolated from the herbs of anise.

0.5 g (accurately weighed) pectin substances were weighed in a dry filter crucible and poured with ethyl alcohol with a volume fraction of 70%, acidified with hydrochloric acid, until a puree-like consistency was obtained.

The crucible was attached to a flask with a tube with a soft rubber plate with a hole. The flask was connected to a vacuum source. Pectin substances were washed with the same alcohol mixture (20 cm^3 each), stirring with a stick and periodically sucking off the filtrate until a negative reaction to aluminum ion with alizarin solution. For the qualitative determination of aluminum, a drop of the filtrate was placed on filter paper and treated with ammonia vapor. In the presence of aluminum ions, a red spot of aluminum varnish appeared. Then the pectin substances were washed with ethyl alcohol with a volume fraction of 75% (20 cm^3) until a negative reaction to the chloride ion (a solution of silver nitrate was added to several drops of the filtrate on a watch glass). Washing was considered complete when the formation of a white precipitate of silver chloride ceased. After that, it was washed three times (20 cm^3 each) with ethyl alcohol. The washed sample was quantitatively transferred into a conical flask with a capacity of 500 cm^3, its remains were washed out of the crucible with distilled water heated to 40 °C, and the volume was brought to 100 cm^3 with distilled water. The flask was tightly closed and the contents were thoroughly shaken until the pectin substances were completely dissolved. The sample was titrated with 0.1 M sodium hydroxide solution potentiometrically (PH-meter - HI2550, with a glass combined electrode HI 1131) by adding six drops of Hinton's indicator. The volume of sodium hydroxide solution spent was taken into account. Then 50 cm^3 of the same sodium hydroxide solution was added, the flask was tightly closed and left for 1 hour to saponify the esterified carboxyl groups. Thereafter, 50 cm^3 of 0.1 M hydrochloric acid solution was added to the solution with a pipette, and its residue was again titrated with sodium hydroxide solution potentiometrically. To determine the mass fraction of polyuronides, a sample was prepared and titrated as described above.

Results and discussion. As a result of the experiment, it was found that the degree of esterification of pectin substances isolated from the anise herbs was 36.14% ± 0.03, and the mass fraction of polyuronides was 23.48% ± 0.04. According to GOST of Ukraine, the measurement range for highly esterified pectin substances is from 50% to 80%, for low esterified pectin substances - from 20% to 50%, for polyuronides from 20% to 50%. Moreover, the lower the degree of esterification of pectin substances (more free carboxyl groups), the higher its detoxifying activity.

Conclusions. Pectin substances isolated from the herbs of anise according to the degree of esterification are low-esterified, the content of polyuronides corresponds to the established standards. The pectin substances of the anise herbs can be used to develop new drugs for the treatment of poisoning.

QUALITATIVE DETERMINATION OF BIOLOGICALLY ACTIVE SUBSTANCES BY MASS SPECTROMETRY IN THE COMPOSITION OF A LIQUID PUMPKIN EXTRACT

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Introduction. In aryadu methods of qualitative GC analysis mass spectrometry refers to one of the essential techniques for identification of organic natural substances. Seeds of pumpkin contain up to 50% of fatty oil, which comprises triacylglycerides acids palmitic and stearic about 30%), oleic (25%) and linoleic (45%). The oil contains more (up to 80 %) unsaturated fatty acids. The main pharmacologically active substance that causes the anthelmintic effect of pumpkin seeds