

For assay of the promising substance, was chosen alkalimetry method in the medium of ethanol with a potentiometric fixation of the end point of titration ($s = 1$).

Results and discussion. The development of quality control methodologies was carried out according to State Pharmacopoeia of Ukraine. Resynthesis of the substance was performed using reagents that were purified according to standard procedures. The developed quality control methods are acceptable for use in control and analytical laboratories.

Conclusion. The synthesized substance meets all the requirements of State Pharmacopoeia of Ukraine in quality.

AMOXICILLIN AND METAL SALTS INTERACTION STUDY BY UV- SPECTROPHOTOMETRY METHODS

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Introduction. Amoxicillin is an antibiotic of the penicillin group, contains carboxyl and amino groups and can enter into complex formation reactions. Joint administration of amoxicillin with preparations containing transition metal salts can lead to the formation of chelate complexes of various structures, that can affect the effectiveness of therapy. Previously, we conducted a study of the amoxicillin interaction with metal salts in molar ratios. However, this method does not allow to say in what ratio these compounds can be formed. In an attempt to establish it, a Job spectrophotometric analysis was performed.

Aim. To study the complexation of amoxicillin with metal salts using Job's spectrophotometric method.

Materials and methods. As stated in the Job's method, initial solutions of amoxicillin and salts with equal molar ratios ($1 \cdot 10^{-3}$ m/l) were prepared. Further, primary solutions were diluted and series of solutions with ratios of antibiotic and salt 1:9, 2:8, 3:7, 4:6, 5:5, 6:4, 7:3, 8:2, 9:1 were prepared. Then the absorbance was measured at a wavelength 200-400nm on spectrophotometer Evolution 60S. Samples of calcium chloride, magnesium sulfate heptahydrate, aluminium sulfate, iron (III) chloride, iron (II) sulfate salts were taken as investigated. All solutions were prepared in 0.1 M hydrochloric acid medium which corresponds to pH of stomach.

Results and discussion. The UV-spectrum of amoxicillin in 0.1M hydrochloric acid has three maxima at wavelengths 203nm, 230nm and 272 nm. To control, we took into account changes in absorbance at all maxima. In the experiment with salts of calcium, iron(II) and aluminum, a proportional increase in the absorbance in all three maxima was observed, respectively as the concentration of the antibiotic increased. While when adding iron (III) salt, a change in the character of the spectrum was observed at a ratio of 1: 9, 2: 8, 3: 7, 4: 6, 5: 5 due to which a characteristic's maximum blur occurred at a wavelength of 272 nm.

Conclusions. Based on the results of the study, iron (III) salts are most likely able to interact with the formation of different ratios complex compounds. The obtained results confirm the importance of further research of amoxicillin's complexation properties with the antacids and other metal salts containing medications.

RESEARCH OF THE SQUALENE CONTAIN IN PUMPKIN SEEDS BY A THIN-LAYER CHROMATOGRAPHY

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Introduction. Cucurbita pepo seeds are a well-known traditional herbal drug that has been used throughout the ages in folk and formal medicine. Pumpkin seeds contain a various chemical

compositions: fatty oil (about 50%), the sum of amino acids (including 0.18% to 0.66% of cucurbutin), sterols (55-60% of unsaponifiable fractions) and squalene.

Squalene is a typical component of the fatty oil unsaponifiable fraction of pumpkin seeds. It can be used as a marker for the differentiation of pumpkin seed oil from oils obtained from other types of seeds.

Aim. To identify the presence of squalene in domestic samples of pumpkin seeds by thin-layer chromatography (TLC) method.

Materials and methods. The determination is carried out by the TLC method according to the State Pharmacopoeia of Ukraine, 2nd ed., 2.2.27. TLC Silica gel 60 plates by Merck were used.

As a research objects, 9 series of pumpkin seeds was used, which collected in different regions of the Kharkiv region in the period of 2017-2018 (NN1-9). As standard, squalene (Sigma-Aldrich, USA, series 120M1645V) was used.

Method of determination. Preparation of the test solution. To 0.5 g of the powdered herbal drug (500) (2.9.12) add 5.0 ml of cyclohexane R, sonificate for 60 min by 50 0C and filter.

Preparation of the referense solution. Dissolve 10.0 mg of squalene in cyclohexane R and dilute to 10.0 mL with the same solvent. Mobile phase. Cyclohexane R .10 µl of the referense solution and 20 µl of test solutions were applied to the chromatographic plate as bands of 10 mm. Development. Over a path of 10 cm.

The plate was removed from the tank, dried in air for 30 min, put into a tank with iodine vapours and held for 30-60 min until intense zones was appeared.

Results and discussion. The conditions of determination allow to reliably separate the zone of squalene from other polar components, primarily from triglycerides of fatty acids.

As a mobile phase, cyclohexane was used (Zinchenko A.A., Pharmacom, 2013). In this case, the components of the lipophilic part of the herbal material remain on the starting line, and squalene is obtained at a R_f level about 0.2.

On chromatograms of all test solutions (Figure), a zone located at the level of the squalene zone on the chromatogram of the reference solution has been observed, that indicating the presence of squalene in the test samples of pumpkin seeds.

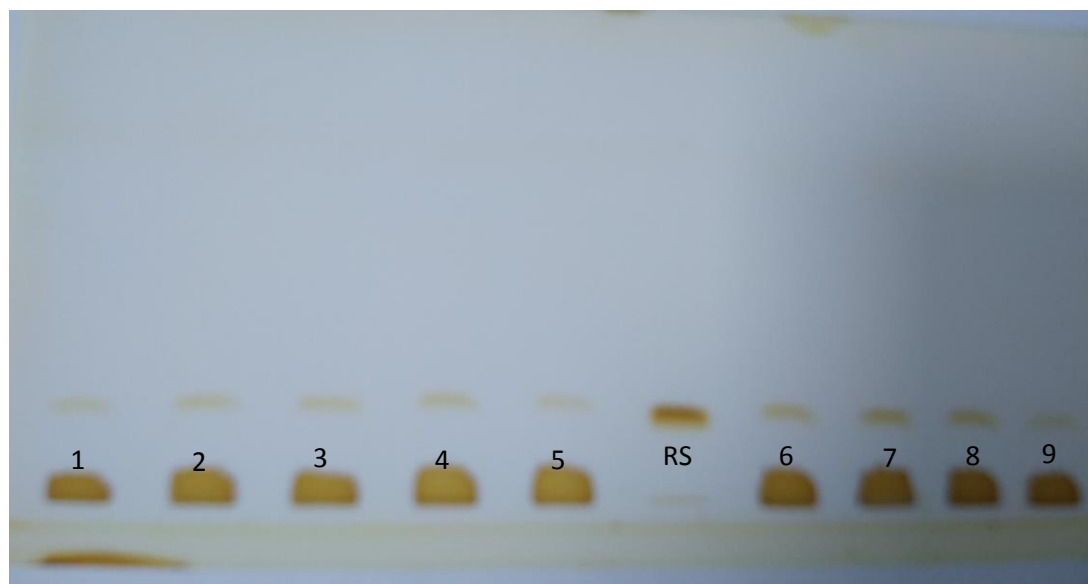


Fig. The type of chromatograms obtained by squalene determination of various samples pumpkin seeds:

- | | |
|---------------------------|------------------------------------|
| 1-sample pumpkin seeds N1 | RS- referense solution of squalene |
| 2-sample pumpkin seeds N2 | 6-sample pumpkin seeds N6 |
| 3-sample pumpkin seeds N3 | 7-sample pumpkin seeds N7 |
| 4-sample pumpkin seeds N4 | 8-sample pumpkin seeds N8 |
| 5-sample pumpkin seeds N5 | 9-sample pumpkin seeds N9 |

Conclusions. The presence of squalene in the domestic samples of pumpkin seeds by the TLC method has been confirmed.