

DEVELOPMENT OF METHODS FOR IDENTIFICATION AND ASSAY FOR DRY EXTRACT OF LUPULI STROBILI IN COMPOSITION OF CAPSULES

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Introduction. Hop ordinary (*Humulus lupulus* L.) – a medicinal plant, widely used in officinal and folk medicine and cosmetology. Medicines from the hop cones have diverse pharmacological properties – sedative, analgesic, hypnotic and anti-inflammatory. The main compounds that determine the biological activity of hop cones are bitterness, flavonoids, phenolic compounds, as well as essential oil.

Aim. Specialists of the department of Industrial Technology of Drugs under the guidance of prof. Ruban E. A. are working to develop a new drug – the capsules with the dry extract of hop cones. After analyzing the proposal of the State Pharmacopoeia of Ukraine criteria, we concluded that the capsules with dry extract of hop cones are needed to standardize on such parameters: description, identification, uniformity of capsule contents weight, disintegration, microbiological purity, quantitative content of active ingredients.

Results and discussion. For identification of capsules with the dry extract of hop cones we propose to use the reaction to flavonoids (reaction of formation chalcones), phenolic compounds (with ferric (III) chloride) and use a thin-layer chromatography method in the system: butanol R – anhydrous acetic acid R – water R (4: 1: 2). The chromatogram of the test solution after spraying aluminum chloride solution should be observed for at least two bands: yellow band similar at position to the band on the chromatogram of the reference solution of the rutin and darker stripe yellow-orange band above the first band. The presence of other bands of varying intensity and staining is allowed.

For the assay of active substances in plant extracts non-specific physico-chemical methods of analysis are commonly used. These methods allow determining the full amount of related substances and conditional recounting them on any standard compound from this group. The obtained results are conditional, but allow to regulate the content of group of biologically active substances and thereby to standardize the extract. To quantify the amount of flavonoids we proposed a method based on interaction with the aluminum chloride, recalculated on the rutin, the presence of which was previously confirmed by TLC. The relative uncertainty of the average determination by this method is 2.061%.

Determination of the amount of polyphenolic compounds is carried out by adsorption UV-spectrophotometry at 270 nm, with the conditional recalculation result to gallic acid. The relative uncertainty of the average determination by this method is 2.124%.

Conclusions. The results of these studies will be used to create analytical documentation on capsules with dry extract of hop.