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Technology and Qualitative Analysis of Liquid Extract Obtained on The Basis of Plant Raw Materials Polygonum Hydropiper L. And Hypericum Perforatum L.

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Abstract: This research work is devoted to the study of the technology and qualitative analysis of obtaining liquid extract from Polygonum hydropiper and Hypéricum perforátum plant raw materials. Percolation was used in liquid extract extraction. Ethyl alcohol of different concentrations was used as an extract. When conducting quality analysis, a spectrophotometric method was used.

Keywords: Liquid extract, flavonoids, Polygonum hydropiper and Hypéricum perforátum, percolation, spectrophotometry.

Introduction: Drug preparations with a twisting effect, obtained from plant raw materials, are now widely used. Agents with a twisting effect are among the drugs that have a local anti-inflammatory effect. They are used in inflammatory processes of the skin and mucous membranes [1]. Therefore, when we carried out our research work, we selected Herba Polygoni hydropiperis and Hypéricum perforátum from plant raw materials with a twisting effect by chemical composition. The Polygonum hydropiper has been used since ancient times as a medicinal plant, with which the Greeks and Romans, al-Khimik, used it. Polygonum hydropiper contains glycosides, vitamins C, K, carotene, flavanoids, sugars, organic acids, astringent bitter compounds and other substances. In folk medicine, tincture is used in malaria, diarrhea, hemorrhoids and as a bleeding suppressor and painkiller and as a medicine for various wounds [5]. The Hypéricum perforátum product contains 10-12.8 percent additives,0.1-0.4 percent anthracene unums, flavonoids (hyperoside, rutin, quercitrin, isocversitrin, quercetin, myricetin, etc.), 0.1 - 03 percent essential oil, 55 mg percent carotene, 1151.8 mg percent vitamin C, ~4 mg percent choline, very small amounts of alkaloids, and up to 10 percent tar. Hypéricum perforátum products, on the other hand, have anti-inflammatory, spasmolytic analgesic, antiseptic and twisting effects. In medicine, it is used in the treatment of gastrointestinal (colitis, diarrhea), oral diseases (gingivitis and stomatitis) and burns of II and III degrees, as well as for rinsing the mouth. The plant surface of the plant has a bactericidal effect [1,4].

The purpose of the work. Obtaining liquid extract from Polygonum hydropiper and Hypéricum perforátum plant raw materials and conducting its qualitative analysis is the goal of our research work.

METHODS

When obtaining a liquid extract, on the recommendation of pharmacologists from the following selected plant raw materials, herba Polygoni hydropiperis and herba Hypérici perforátum in the same proportion were pulled out and ground at a level of 3-5 mm spruce. Two different capacities of ethyl alcohol were selected as an extract (40% and 70%). The percolation method was used in obtaining liquid extract [2,3]. Liquid extracts were studied on the basis of methods given in their appearance, dry residue, alcohol concentration, density, heavy metal content O'zR DF, XI DF [4,5]. Quantitative analysis of the resulting liquid extracts was analyzed in a spectrophotometric way by the average amount of flavonoids (in the calculation of the rutin standard substance) [2,4].

As standard, rutin flavanoid is used, in which the maximum absorption corresponds to the maximum absorption of the sample being examined with the aluminum chloride complex. Measurements of optical density were carried out on the UB-spectrophotometer "Agilent Technology-8253" (Germany), at a wavelength of 350-450 nm, in cuvettes 10 mm thick.

Preparation of the probing solution. 1ml of the probing liquid extract was placed in a 25ml volume measuring flask, 5ml of 96% ethyl alcohol, 5ml of 5% aluminium chloride was released from a 70% solution of ethyl alcohol. After 10 minutes, a solution of 2 ml of 5% acetic acid in 70% ethyl alcohol was added. The volume of the solution was reached and mixed with 70% ethyl alcohol to the line of the measuring flask. The optical density of the solution obtained after 30 minutes was measured in a 10 mm thick cuvette at a wavelength of 408nm on a spectrophotometer. A sample of a compensatory solution was prepared-this is a solution of 1 ml of the liquid extract, 5 ml of 96% ethyl alcohol and 2 ml of 5% acetic acid in 70% ethyl alcohol, put in a 25 ml flask and brought to the line of the measuring flask with 70% ethyl alcohol.

Working standard sample solution preparation (WSS). Approximately 25 mg (exact drawer) of WSS rutin is obtained, dried to a constant weight at 135°C, placed in a 100 ml volume flask, dissolved in heated 80 ml of 96% ethyl alcohol, then cooled and transported to the line of the measuring flask with that 96% ethyl alcohol and mixed.

At the same time, after 30 minutes, the optical density of 1 ml of a comparable solution (isn rutin) is measured using a sample of a compensatory solution (1 ml of liquid extract, 5 ml of 96% ethyl alcohol and 2 ml of 5% acetic acid in 70% ethyl alcohol, put in a 25 ml flask and brought to the line of the measuring solution flask with 70% ethyl alcohol).

The sum of flavanoids contained in the liquid extract is found through the following formula:

$$X = \frac{A \cdot m_0 \cdot P \cdot 1 \cdot 25}{A_0 \cdot 100 \cdot 100 \cdot 25 \cdot 1} = \frac{A \cdot m_0 \cdot P}{A_0 \cdot 10000}$$

in this:

A — is the optical density of a probing solution;

A0 — is the optical density of a comparable solution;

m0 — is the mass of the routine standard sample, mg;

P — The amount of rutin on the WSS, indicated in the quality certificate, is %.

RESULTS AND DISCUSSION

Qualitative analysis of the obtained liquid extracts was studied on the basis of the methods given in O'zR DF, XI DF. In this case, a liquid extract obtained using 40% ethyl alcohol looked like this in appearance: a clear liquid of dark green, brown color; a dry residue of 2.76%, an alcohol concentration of 35%, a density of 0.94 g/ml, the amount of heavy metals did not exceed 0.001%. The liquid extract obtained using 70% ethyl alcohol looked the following in appearance: a clear liquid of dark green, brown color; a dry residue of 2.22%, an alcohol concentration of 67.5%, a density of 0.92 g/ml, the amount of heavy metals did not exceed 0.001%. The results are shown in Table 1.

Liquid extract quality indicators

Table 1

№	Appearance	Alcohol concentrate	Amount of dry residue	Density	Total amount sum of flavonoids
Liquid extract (40% ethyl alcohol)	clear liquid of dark green, brown color	35%	2,76	0,94	2,3085%
Liquid extract (70% ethyl alcohol)	clear liquid of dark green, brown color	67,5%	2,22	0,92	2,5796%

Quantitative analysis of the resulting liquid extracts was analyzed by spectrophotometry method in terms of the average amount of flavonoids (in the standard rutin calculation). Based on the results of a quantitative analysis, the average amount of flavonoids in liquid extract obtained using 40% ethyl alcohol (in standard rutin accounting) was 2.3085%; the average amount of flavonoids in liquid extract obtained using 70% ethyl alcohol (in standard rutin accounting) was 2.5796%.

CONCLUSION

Liquid extracts from Polygonum hydropiper and Hypéricum perforátum plant raw materials with the participation of an extragent of different concentrations were obtained by percolation and

qualitative analysis of it was carried out. According to the results, a liquid extract obtained using 70% ethyl alcohol was found to be optimal.

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