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QUANTITATIVE DETERMINATION OF TANNINS IN GINGKO BILOBA RAW MATERIAL

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Research on the creation of complex therapeutic agents from plant raw materials with a nootropic effect, accessible to the general population, effective and safe for long-term use, is an urgent task for the medical industry. Among the most popular drugs of nootropic action of medicinal plants, the first place belongs to the preparation of ginkgo biloba. This work is devoted to the quantitative determination of tannins in raw materials of ginkgo biloba.

About 2 g (accurately weighed) of crushed medicinal herbal raw materials or herbal medicinal products, sifted through a sieve with holes of 3 mm, are placed in a 500 ml conical flask, poured into 250 ml of water heated to boiling and boiled under reflux on an electric stove with a closed spiral for 30 minutes with occasional stirring. The resulting extract is cooled to room temperature and filtered through cotton wool into a volumetric flask with a capacity of 250 ml so that the particles of the raw material of the drug do not fall into the flask, the volume of the solution is brought to the mark with water and 25 ml of the resulting aqueous extract is stirred, placed in a conical flask with a capacity of 1000 ml, 500 ml of water, 25 ml of indigo sulfonic acid solution and titrated with constant stirring of potassium permanganate with a solution of 0.02 M until a golden yellow color. In parallel, a control experiment is conducted. 525 ml of water is placed into a 1000 ml conical flask. 25 ml of a solution of indigo sulfonic acid is taken and titrated with constant stirring of potassium permanganate with a solution of 0.02 M until a golden yellow color. The content of the tannins sum in terms of tannin in absolutely dry raw materials as a percentage is calculated by the formula:

$$X = \frac{(V - V_1) \cdot 0.004157 \cdot 250 \cdot 100 \cdot 100}{m \cdot 25 \cdot (100 - W)}$$

where V is the volume of KMnO₄ solution (0.02 mol/l) used for titration of the extract, in ml;

V₁ is the volume of KMnO₄ solution (0.02 mol/l) used for titration in the control experiment, ml;

0.004157 - the amount of tannins corresponding to 1 ml of KMnO₄ (0.02 mol/l) (in terms of tannin), in g; m - the mass of raw materials, in g; W is the mass loss during drying of raw materials, in %; 250 ml - total volume of extract, in ml; 25 ml - volume of extract taken for titration, in ml. Based on the results obtained, the norm of the tannins content in raw materials, the value of which was 3.36%