Conclusion. Extraction of biologically active substances from rhizomes with roots of Rhodiola rosea by the method of filtration extraction makes it possible to reduce the duration of the technological process and significantly increase its effectiveness by obtaining a more concentrated product.

DEVELOPMENT OF TECHNOLOGY OF ANTIOXIDANT ACTION MICROCAPSULES WITH PLANT EXTRACTS

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Introduction. Scientific studies of the last decades show that oxidative stress precedes or accompanies many diseases – cardiovascular, oncological, and disorders of cerebral circulation. In this regard, antioxidant drugs have found wide application. Of particular interest are natural antioxidants isolated from plants. Promising in this regard may be drugs of prolonged action, the active components of which are extracts from plants with antioxidant activity in microencapsulated form. Microcapsules are a modern dosage form that ensures optimal delivery and prolonged action, stability of active ingredients.

Aim of the study. Substantiation of manufacturing technology of antioxidant action microcapsules based on plant extracts.

Materials and methods. The object of the study was the total phytocomposition in the form of extracts of the root of elecampane, oak and viburnum barks, containing natural phenols (tocopherols, quercetin, gallic acid and its derivatives), which affect the redox processes in cells, tissue regeneration, the negative effects of environmental factors, etc.

When choosing auxiliary substances for the phytocomposition microencapsulation, proceeded from their availability, the possibility of use in pharmacy and pharmacological indifference. Gelatin was chosen as the material for the shell of microcapsules, for its dissolution – purified water and glycerin; inert dispersion medium is represented by sunflower oil.

Technological, biopharmaceutical and physicochemical methods were used in the work.

Results. When choosing the optimal method of obtaining microcapsules with plant extracts, we compared two methods – simple coacervation and dispersion in the «liquid-liquid» system. The method of simple coacervation is rather long in execution – 24 hours and is characterized by a low technological yield. The physico-chemical method of dispersion occurs more completely – the yield of microcapsules is 90%, the total duration of the technological process is 8 hours.

Microencapsulation by dispersion was carried out in laboratory conditions using the following process steps: preparation of a film-forming solution, introduction of extracts into a gelatin mass, formation of microcapsules, filtration and washing with ethanol, drying.

Gelatin solution was prepared according to the generally accepted technology of solutions of high-molecular substances, at a temperature of 50-60 ° C, extracts of elecampane, oak, and viburnum were introduced with stirring. The resulting mass for encapsulation was poured into a dispersion medium heated to 40-50 °C at vigorous stirring. Then the temperature of the medium sharply decreased to 5 °C, the obtained microcapsules were washed on the filter with ethanol and dried to constant weight.

The obtained microcapsules represented brown particles of uniform spherical shape.

Conclusions. As a result of experimental studies, a technology was proposed for producing microcapsules with plant extracts of antioxidant action by the method of dispersion in the system «liquid-liquid».