

## OP22. DEVELOPMENT OF A TECHNOLOGY FOR OBTAINING A SUBSTANCE BASED ON POLYSACCHARIDES OF *FERULA KUHISTANICA* PREBIOTIC ACTION

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The search for new approaches to the complex processing of plant materials for the purpose of its full use will significantly expand the list of biologically active substances released, which are synthons for obtaining new drugs for medicine, agriculture and veterinary medicine.

At the Institute of the Chemistry of Plant Substances, the technologies have been produced for production of estrogenic preparation Kufestrol from the aerial part *Ferula kuhistanica*. In addition to the esters of terpenoid alcohols, this raw material contains other types of biologically active compounds that are disposed of as production waste. In order to rationally use plant raw materials, we conducted a chemical study of the production waste of this drug.

In the production of the Kufestrol substance, the main waste in terms of quantity is the depleted raw material after extraction with alcohol. The residual amount of alcohol was recovered directly from the raw material in a vacuum drum dryer. Dry ferula meal contains protein, ash substances, fiber, so it can be used as a fertilizer for plowing fields. As a result of the chemical study of the *Ferula kuhistanica* meal, water-soluble polysaccharides were isolated, the basis of which is arabinogalactan (45%). The monosaccharide composition of water-soluble polysaccharides is mainly represented by arabinose and galactose in a ratio of 1:3 and has an M<sub>w</sub> of 36-45 kDa. Structural study of arabinogalactan made it possible to attribute it to arabino-3,6-galactans. Arbifilan exhibits prebiotic activity, stimulating the growth of an associative culture of bifidobacteria and some monostrains of lactobacilli. The technology for obtaining the substance of Arbifilan has been developed, which consists of three-fold extraction of *Ferula kuhistanica* meal with water with forced circulation of the extractant at a rate of 80 l/h, concentration of the aqueous extract and drying in a spray dryer. In this case, the drying process must be carried out under the following conditions: dry matter of the extract - 15%, water - 85%; drying agent inlet temperature - 180 °C, outlet - 85 °C; solution feed rate - 6 l/h; solution supply pressure - 0.2 Mpa.

The results of the studies of waste production of the Kufestrol substance made it possible to develop a technology for obtaining the Arbifilan substance from the *Ferula kuhistanica* meal.

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