**Brief characteristics of preparations of biogenic stimulants**

Preparations of biogenic stimulants help to implement the idea of ​​tissue therapy, laid down by Acad. V.P. Filatov.

Biogenic stimulants activate the vitality and functions of the body. The emergence of biogenic stimulants is caused by various adverse environmental factors: low temperature (2-4 ° C above zero), lack of light, X-ray irradiation, etc.

Of the medicines currently produced by the domestic industry, the most widely used are: aloe leaf extract, peloidin, FiBS, biosed, humisol, placenta extract, vitreous body, Kalanchoe juice, etc.

**Aloe extract liquid**(Extractum Aloes fluidum) is prepared from biostimulated (according to V.P. Filatov) leaves of aloe tree (Alol arborescens Mill.), Grown in greenhouses of Transcaucasia or Central Asia. The original plant must be over 2 years of age. The lower leaves are cut off, leaving the upper ones - underdeveloped. For biostimulation, the leaves are placed in the dark at a temperature of 4-8 ° C for 10-12 days. Then they are washed, dried, teeth and yellowed ends are removed and crushed on rollers. The resulting mass is poured with a threefold amount of purified water, insisted for 2 hours at room temperature. Then the contents of the tincture are boiled for 2 minutes, filtered, cooled, the amount (volume) is measured and its oxidizability is determined (the filtrate sample is titrated with 0.01 N potassium permanganate solution in the presence of sulfuric acid).

According to the analysis data, the filtrate is diluted with water so that its oxidizability is equal to 1500 mg of oxygen per 1 liter of the filtrate. Then sodium chloride is added (7 hours per 1 liter of filtrate), boiled again for 2 minutes and filtered.

Aloe liquid aqueous extract is a clear liquid from light yellow to reddish yellow. It is used internally for gastric ulcer and duodenal ulcer, bronchitis and other diseases, 1 teaspoon 3 times a day. The course of treatment is 30-45 days. It is repeated 3-4 times during the year. Release form: in bottles of 100 ml. Storage: under normal conditions.

**Aloe extract liquid for injection**(Extractum Aloes fluidum pro injectionibus) an aqueous extract from biostimulated (according to V.P. Filatov) fresh or dried leaves of aloe. The technology is identical to the production of liquid aloe extract.

When preparing a preparation for injection, the obtained transparent extract (with a pH value of 5.0-6.8) is poured into 1 ml ampoules, sterilized at a temperature of 120 ° C for 1 hour.

Chemical composition: fatty dicarboxylic acids, hydroxy dicarboxylic acids of the same series, unsaturated aromatic acids with a large molecular weight.

The drug is used in case of progressive myopia, conjunctivitis, iritis, opacity of the vitreous body, etc. Injected under the skin, 1 ml daily. The course of treatment is 30-50 injections. Available in ampoules of 1 ml. Storage: in a dark place.

**Aloe coated tablets**(Tabulettae Aloes obductae) yellow, containing 0.05 g of crushed canned leaf of aloe tree. Applied for the purpose of non-specific therapy in the complex treatment of progressive myopia and myotic choreoretinitis. Dose for adults 1 tablet 3-4 times a day 30 minutes before meals. The course of treatment is 1 month. Available in tablets, in a package of 20 pcs. Store in a cool dry place.

**Aloe liniment** (Linimentum Aloes).

Ingredients: aloe tree juice (canned from biostimulated leaves) - 78 parts; castor oil - 10.1 parts; emulsifier - 10.1 parts; eucalyptus oil - 0.1 part; sorbic acid - 0.2 parts; sodium carboxymethyl cellulose - 1.5 parts. Homogeneous thick mass of white or light cream color with a characteristic odor.

Applied externally for burns, for the treatment of affected skin with radiation therapy. Produce 30-50 g in orange glass bottles. Store in a dark place at a temperature not exceeding + 10 ° C.

**Aloe juice**(Succus Aloes). Prepared from freshly picked leaves (or young plants). Ingredients: aloe juice - 80 ml; ethyl alcohol 95% - 20 ml; chlorobutanol hydrate - 0.5%.

Slightly cloudy liquid of light orange color, bitter in taste. Darkens under the influence of light and air. Applied externally in the form of lotions or irrigation in the treatment of purulent wounds, burns, inflammatory skin diseases. Inside is prescribed for gastritis, enterocolitis, constipation, 1 teaspoon 2-3 times a day 20-30 minutes before meals. Available in bottles of 100 ml. Store in a cool, dark place.

**Biosed**(Biosedum) - an aqueous extract from biostimulated (according to V.P. Filatov) fresh stonecrop herb (Sedum maximum (L) Sutes). A certain amount of medicinal raw materials is crushed on the "Voltar-5" paste-former. The juice is squeezed out using a VPRD-5 serial press. The raw material pressed from the juice (pulp) is extracted with water 1:10 at a temperature of 95-98 ° C for 15 minutes, repeating the operation 4 times. The juice and extracts are combined, defended, filtered. The resulting preparation is a clear liquid, light yellow in color with a slight peculiar smell, pH 5.0-6.5. 1 ml ampoules are poured, sterilized at 110 ° C for 30 minutes. The preparation is also obtained in the form of dry juice, then a RSL-10 spray dryer is used for drying.

Chemical composition: about 17 substances of flavanoid nature, phenol carboxylic acids, coumarins.

It is used as an adjuvant to stimulate metabolic and regenerative processes in ophthalmic, dental, surgical and therapeutic practice (for gastric ulcer and duodenal ulcer). Injected under the skin or intramuscularly daily for adults, 1-2 ml per day. In dental practice (with periodontal disease) it is used in the form of applications, electrophoresis, injections into the gum tissue. Produced in ampoules of 1 ml in a package of 10 pieces. Store in a dark place at room temperature.

**Vitreous**(Corpus vitreum) is obtained from biostimulated (according to V.P. Filatov) eyes of cattle and pigs. The eyeball is separated from excess tissue, washed with tap water, disinfected by 2-3 times immersion in a 5% carbolic acid solution for 5 minutes and delivered to the box, where it is thoroughly poured with sterile saline, then a wide incision is made in the border of the outer shell with a scalpel so that the lens remains in the upper part and is squeezed out, the vitreous is removed with a vacuum pistol and immediately frozen.

The vitreous, frozen in the refrigerator, is weighed at 125 parts per batch. Defrosting (degreasing) raw materials is carried out first by supplying hot water to the reactor jacket with stirring, and then by supplying steam. At the end of defrosting, the vitreous body is vacuum placed into a heat treatment reactor. In order to prevent yellowing of the vitreous during heat treatment, weighed 520 parts of activated carbon are added to the reactor through the hatch. The hatch of the reactor is closed and the heat treatment process is started - the stirrer is turned on and, with stirring, the vitreous is heated by supplying steam to the reactor jacket to a temperature of + 115 ± 5 ° C, maintained for 1 to 1.5 hours. The temperature is maintained automatically by means of a software sensor and controller. After the end of the heat treatment process, cold water is supplied to the reactor jacket to cool the contents of the reactor to a temperature of 85 ± 5 ° C. Then the extraction is clarified in a sump and the vitreous body is sterilized using an Orion-type layered filter. Before sterile filtration, the sterile Orion filter, consisting of seven plates of the EKS brand, eight of the KO-5 brand and an additional membrane filter, is washed with water for injection in the amount of 70 liters. The system is then purged with sterile clean air until moisture is removed. eight brands KO-5 and an additional membrane filter, washed with water for injection in the amount of 70 liters. The system is then purged with sterile clean air until moisture is removed. eight brands KO-5 and an additional membrane filter, washed with water for injection in an amount of 70 liters. The system is then purged with sterile clean air until moisture is removed.

The output of the vitreous body after sterile filtration is 80.75% of that taken. The finished product is a sterile, colorless, transparent, slightly opalescent liquid, which is poured into 2 ml ampoules and sterilized at 120 ° C for 30 minutes in a steam autoclave. Then kept in a thermostat for 8 days at a temperature of 37 ° C.

It is used to soften and resorb scar tissue, as an anesthetic for neuralgia. Store at room temperature.

**Placenta suspension for injection**(Suspensio Placentha pro injectionibus). The suspension is obtained from the female placenta, it is taken in maternity hospitals from obviously healthy women in labor. After collecting, the placenta is immediately placed in a sterile container with a lid and sent to the factory, where it is frozen in refrigerators and kept at 2-4 ° C for 5-7 days to enrich the placental tissues with biologically active substances. The canned raw materials are transferred to the box, the amniotic sacs, umbilical cords are separated, rinsed with purified water, cleaned from the serous membrane and crushed. The weighed mass is poured in two volumes of 0.9% isotonic sodium chloride solution in glass jars, which are closed with cotton swabs and tied with parchment paper. The balloons are sterilized in an autoclave at 119-121 ° C for an hour and left in the refrigerator for a day.

The contents of the cylinders are passed through a colloidal mill to obtain particles of no more than 0.3 mm in size in a box previously irradiated with ultraviolet rays. The solution is cooled for 2-3 hours and transferred to ampulation.

The finished product is a homogeneous reddish-brown suspension with a characteristic odor, pH 5.8-6.9.

It is used as a biogenic stimulant for various eye diseases. Available in ampoules of 2 ml. Store in a dark place.

**Placenta extract for injection**(Extractum Placentha pro injectionibus). Aqueous extract from cold-preserved human placenta. Sterile, colorless, transparent or slightly opalescent liquid without sediment; pH 6.7-7.5. Sterilized at 120 ° C for an hour.

It is used as a biogenic stimulant for eye diseases, malaria, arthritis, radiculitis, inflammatory diseases of the female genital area. Produced in ampoules of 1 ml, in a package of 10 pieces. Store in a dark place.

**Amniocene**(Amniocenum). It is the denatured amniotic membrane of the human placenta. It is produced in the form of a finely ground suspension in isotonic sodium chloride solution.

**Amniocene Injection**(Amniocenum pro injectionibus). It is a suspension of white with a yellowish shade and a characteristic odor. The drug has an anti-inflammatory, absorbable effect.

It is used in urological practice for the treatment of patients with chronic prostatitis and prostate adenoma of the I-II degree, as well as patients who are not subject to surgical intervention, in gynecological practice. It is injected under the skin along the middle axillary line at the level of the VII-VIII rib through a thick long needle, 5 ml once every 5-7 days. Produced in vials of 5 ml suspension in a package of 10 vials. Store in a dark place at a temperature of 6-10 ° C.

**Polybiolin**(Polybiolinum). The drug is obtained from donor placental human blood serum. The powder is white with a slight yellow tint, odorless. Hygroscopic. Let's easily dissolve in water. Isotonic sodium chloride solution and 0.25-0.5% novocaine solution; 5 ml of solution is injected intramuscularly daily for 8-10 days. It is used for adnexitis, parametritis, for postoperative adhesions, for lumbar sacral radiculitis, plexitis, neuralgia. Produced in vials of 0.5 ml of suspension, in a package of 10 vials. Store in a dry, dark place at a temperature of 10-25 ° C.

**Khonsurid**(Chonsuridum). The drug is obtained from the trachea (hyaline cartilage) of cattle. It is a white or white porous mass with a faint yellow tinge. Easily soluble in water and in isotonic sodium chloride solution. The active substance of honsuride is chondrontiosulfuric acid, which belongs to high molecular weight polysaccharides and, along with hyaluronic acid, participates in the construction of the basic substance of connective tissue. Applied externally to accelerate reparative processes for long-term non-healing, sluggishly granulating wounds. Produced in hermetically sealed vials containing 0.05-0.1 g of sterile honsuride powder.

**Rumalon**(Rumalonum). The preparation contains an extract from the cartilage of young animals and a bone marrow extract. It is used for joint diseases accompanied by degenerative changes in the cartilage tissue of the joints (arthrosis, spondylosis, etc.). Available in ampoules of 1 ml.

**Plazmol**(Plasmolum). The drug is obtained from human blood. It is a colorless or slightly yellowish transparent or slightly opalescent liquid with a specific odor.

It is used as a non-specific, desensitizing and analgesic agent for neuralgia, neuritis, radiculitis and other diseases of the peripheral nervous system, accompanied by pain, as well as for gastric ulcer and duodenal ulcer, bronchial asthma, arthritis.

Produced in ampoules of 1 ml in a package of 10 pieces. Store in a dark place at a temperature not exceeding + 15 ° C.

**Splenin**(Spleninum). The drug is obtained from the spleen of cattle. It is a clear, colorless liquid with a salty taste with a characteristic odor. Canned with 10% ethyl alcohol, pH 4.0-5.0.

It is used for the treatment and prevention of toxicosis in early pregnancy. The drug normalizes changes in nitrogen metabolism and increases the detoxifying function of the liver. Produced in ampoules of 1 ml in a package of 10 pieces. Store in a cool, dark place.

**Solcoseryl**(Solcoseryl). The drug is obtained from the blood of cattle; it is free from protein, has no antigenic properties.

They are used to improve metabolic processes and accelerate tissue regeneration in case of trophic ulcers of the leg, gangrene, bedsores, burns, radiation ulcers, and skin transplantation. Solcoseryl is used in the form of a special dosage form (20% gel) in the treatment of corneal diseases. Produced in ampoules of 2 ml, jelly and ointment in tubes of 20 g.

**Actovegin**(Actovegin). Protein-free extract from calf blood. Contains 40 mg of dry matter in 1 ml.

It is used to accelerate the healing of trophic ulcers, burns, radiation damage to the skin, to improve metabolic processes in violation of cerebral and peripheral circulation. With damage to the cornea and conjunctiva.

**Biogenic stimulants of mineral origin**

**Peloidin** (Peloidinum) - an aqueous extract of therapeutic mud from the Kuyalnitsky estuary, located in the Odessa region.

Cooking technology. 280 kg of therapeutic mud are loaded into a ceramic tank, 720 liters of water are also placed there. 6.68 kg of sodium chloride is added to 1000 l of the mixture to make the solution isotonic. The mixture is infused with constant stirring (using a stirrer) from 3 to 6 days at room temperature, until the liquid settled over the mud has a density of 1.008-1.010 g / m3, the chloride content is 11.5-14.5 g / l, the dry residue is up to 16 g / l, pH value 8.2-9.5. Then the liquid is siphoned and filtered twice in order to remove mechanical impurities (using depth filters) and microorganisms (through sterile plates or membrane filters with a pore diameter of no more than 0.3 microns). The filtrate is heated for 1.5 hours at a temperature of 60-70 ° C and, after cooling under aseptic conditions, is poured into 0.5 liter vials. Keep cool

It is used externally in the treatment of purulent wounds for washing and wetting the dressings, as well as for the treatment of chronic inflammatory diseases of the female genital organs by electrophoresis.

**Humisol**(Humisolum) - 0.01% solution of fractions of humic acids of Haapsalu sea curative mud in isotonic sodium chloride solution. The preparation contains biologically active substances of an oligodynamic nature and up to 40% of humic acids. It is a transparent or slightly opalescent liquid with a slightly noticeable suspension with a yellowish tinge, odorless, salty taste, neutral reaction. The therapeutic effect is close to that of healing mud.

It is used for chronic and subacute radiculitis, plexitis, neuralgia, rheumatoid arthritis, arthrosis, chronic diseases of the middle ear and paranasal sinuses, pharyngitis, rhinitis. Administered intramuscularly or by electrophoresis. Produced in ampoules of 2 and 10 ml.

**FiBS for injection**(FiBS pro injectionibus). To obtain the drug, they take silt mud of the Kuyalnitsky estuary and distilled with water vapor. The distillation obtained contains a lot of sulfur and hydrogen sulfide. To the resulting distillation, containing sulfur and hydrogen sulfide, add sodium chloride (7.5 g per 1 L), settle and filter through a fabric filter. Then, separation is carried out on a plate-type liquid separator, and a clear solution is obtained at a productivity of 55 l / h. Hydrogen sulfide is removed by heating, and sodium chloride is removed by repeated distillation. To the resulting solution (peloid) add cinnamic acid (0.3-0.4 g per 1 l) and coumarin (0.1 g per 1 l) and filter.

FiBS is a colorless liquid with a coumarin odor, pH 4.6-5.4. Available in ampoules of 1 ml. Sterilized at a temperature of 120 ° C for 1 hour.

It is used to treat keratitis, blepharitis, opacity of the vitreous humor, as well as arthritis, radiculitis and other diseases. Store in a dark place.

**Peat**(Torfotum) - distillation of peat from certain deposits with certain indicators. It is a clear, colorless, sterile liquid with a characteristic peat odor. PH value 6.0-8.8. They are used in about the same way as FiBS. Available in ampoules of 1 ml.

**Woolnuzan**(Vulnusan) - an ointment containing an extract from the mother liquors of the Pomorie salt lakes in Bulgaria - 12 g; castor oil - 35 g; lanolin - 15 g; water - up to 100 ml. It helps to cleanse and accelerate the healing of superficial purulent wounds, cracks (anus).

The chemical nature of biogenic stimulants of both plant and animal origin has not been completely studied; therefore, certain difficulties arise when assessing the quality of these drugs by chemical methods. Currently, biological tests are used for standardization. The methods for determining the biological activity of tissue preparations are based on the ability of biogenic stimulants to activate metabolic processes in the body, to increase its vital activity. This principle found its expression in tests such as the acceleration of the fermentative activity of yeast, the intensity of their reproduction on a solid or liquid medium, the acceleration of germination of plant seeds, a change in the catalytic activity of the blood, the urease enzyme. Also determine the oxidizability of drugs and the pH of solutions.