The study of protective activity was performed with ethyl alcohol 11% and hydrogen peroxide 1%, which create a pathological model of damage to the cell membrane.

Results and discussion. The results of the study to determine the optimal concentration of the drug with probiotic are given in the table 1.

Analysis of the data shown in Tables 1 indicated that both samples had a beneficial effect on paramecium. As a result of the experiments, we determined the optimal concentration of the samples – 1% and 2%.

Table 1

The results of the study to determine the optimal concentration of the samples

Time, min	Control	Concentration of the sample 1						Concentration of the sample 2					
		0.5%	1%	1.5%	2%	2.5%	3%	0.5%	1%	1.5%	2%	2.5%	3%
1	A	A	A	A	A	A	A	A	A	A	A	A	A
2	A	A	A	F	F	A	A	A	A	A	A	A	A
3	A	A	F	F	F	A	S	A	F	F	F	A	S
4	S	A	F	F	F	S	S	A	F	F	F	S	S
5	S	A	F	F	F	S	S	A	F	F	F	S	S

Notes: Sample 1 – Biofresh yoghurt of Bulgaria probiotic face cream (Bulgaria);
Sample 2 – cream fluid for face and décolleté with probiotics Elysee Cosmetiques (Ukraine);
A – active mooving; S – slow; F – fast.

The next stage of research was the study of the protective activity of two samples of medicinal forms with probiotic in previously selected concentrations of 1% and 2% with respect to cell poisons: ethyl ester 11% and hydrogen peroxide 1%. The results of the study are shown in the table 2.

Table 2

Study of the degree of protection of paramecium against the action of toxicants at the time of stopping

Sample (concentration)	Paramecium stopping time with ethyl alcohol 11%, min	Stopping time of paramecium with solution of hydrogen peroxide 1%, min
Control	2,7±0,02	1,2±0,02
Sample 1 (1 %)	5,17±0,02	1,8±0,02
Sample 1 (2 %)	10,57±0,02	1,08±0,02
Sample 2 (1 %)	4,5±0,02	2,25±0,02
Sample 2 (2 %)	10,5±0,02	2,48±0,02

As seen from the results of the experiment, both samples to selected concentration significantly increased stop time paramecium under the influence of ethyl alcohol and hydrogen peroxide.

Conclusions. As a result of the research, the optimal concentration of soft dosage forms with probiotic was determined for further experiments. It was 1 and 2%. Studying the protective properties with an influence of cellular poisons, a significant increase in the paramecium's stopping time was observed, which proves a high degree of protection of medicinal forms with probiotic.

RESEARCHING OF THE NEW WAYS INSULIN DELIVERING TO PATIENTS

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Introduction. Insulin is a specific hormonal component that makes the regulating blood glucose level possible. Insulin is one of the main objects of the pharmaceutical field of activity, which is manufacturing for using in medicine, in order to treat and support a stable condition of patients with diabetes of all types of disease. At the present time, drugs that contribute to the treatment of diabetes

diseases, have got high value in the pharmaceutical field, due to their effectiveness and the lack of alternative treatments for the disease. The only dosage form of insulin preparations for the treatment of diabetes 1st and 2nd degree – is a liquid dosage form for injection. This dosage form, due to the specific of the getting into the body, is painful for patients. Considering that fact, for a long time the scientists are searching for the new way to development of an alternative method of delivery the active substance.

An alternative way to deliver insulin to the patient was proposed by scientists from Harvard and California universities. The researchers have developed insulin capsules in the form of ionic liquid, which reduce blood glucose level for a long period.

Aim. The aim of this work is to reveal and study scientific achievements in the researching of the new ways insulin delivering to patients, and also the specifics of these methods.

Materials and methods. During the developing a new form of drug for oral using, there is a main problem-the barrier properties of the gastrointestinal tract. The hydrochloric acid in the stomach denatures protein molecules, and enzymes in the intestine break down proteins to amino acids; while the villi of the intestine covered with a layer of mucus, complicating the absorption of the active substance. However, the solution to this problem was found and is as follows. To overcome the acidic environment of the stomach, insulin protein was placed in a capsule with an acid-resistant coating. The coating of the capsule dissolves when the capsule enters the alkaline environment of the intestine, after the ionic liquid is released along with the insulin protein.

The ionic liquid protects the insulin protein from the action of enzymes, in addition, the choline – geranium acid complex, which is part of the ionic liquid, is able to liquefy the intestinal mucus, which in turn facilitates the absorption of protein by the intestinal villi. After passing through the layer of intestinal villi, the protein enters into the bloodstream, where it is further distributed all over the body.

Results and discussion. As a result of the development a new drug form was found that the insulin protein, with prolonged presence in the ionic liquid, is quite stable. The test was carried out for four months at a temperature of 4 °C, and all this time the structure of insulin remained unchanged. The biological activity of the drug was tested on male rats: they have been injected with protein in the ionic liquid with different shelf life, and then checked the level of glucose in the blood – the level of glucose decreased equally.

In addition, oral using of the drug was carried out by the test subject. Two hours after taking the capsules, the glucose level in the subjects decreased by 38%, and after 10 hours – by 45 %.

Conclusion. This drug is a breakthrough in the development of antidiabetic agents. First of all, this is confirmed by the claimed less expensive method of production of the drug. In turn, the drug is quite stable and can be stored at room temperature for two months, which significantly exceeds the shelf life of injection forms. Also, it is oral delivery that simulates the physiological pathway of insulin into the bloodstream, since the injection of subcutaneously contributes to the ingestion of protein into the blood unevenly and at different rates, depending on the injection site.

STUDY ON ANTI-FUNGAL DRUG ACTIVITY AGAINST CLINICALLY ISOLATED STRAINS OF ORAL *CANDIDA* SPECIES

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Introduction. Following the ever increasing application of antibiotics, immunosuppressive agents, and invasive medical devices, as well as increasing numbers of immunocompromised patients, fungal infections have dramatically increased.

Among fungal infections, the Candida species is one of the dominant fungal pathogens, associated with high rates of morbidity and mortality.