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About The Conducted Pharmacological Studies Of New Medicinal Compositions Based On Dry Extract Of Hill Geranium Under The Code Name "Gerask" And "Gerasfit", Including Dry Extract Of Hill Geranium.

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1. INTRODUCTION

It is known from the literature that preparations of geranium are used in traditional medicine as anti-inflammatory, astringent, disinfectants and for bone fractures. Geranium preparations are prescribed for insomnia, epilepsy, fever, stomach and colds, angina pectoris, tachycardia and hemorrhagic bleeding.

Hill geranium (in Uzbek. Anzhabor, Geranium collinum Steph) is a perennial herb. It contains up to 23% tannins, flavonoids - 0.05 ± 0.1; phenol carboxylic acids 0.3 ± 0.1; polysaccharides 0.64 ± 0.1. The aboveground part contains carbohydrates, saponins, alkaloids, vitamins, carotene, tannins and flavonoids.

We have studied new medicinal compositions No.1 and No.2 based on dry extract of hill geranium under the code name "Gerask" and "Gerasfit", including dry extract of geranium hill, additionally containing ascorbic acid, phytin and auxiliary substances in an appropriate amount [1.2].

Research goal: pharmacological research new medicinal compositions No.1 and No.2 based on dry extract of hill geranium under the code name "Gerask" and "Gerasfit", including dry extract of hill geranium.

Study of acute toxicity and resorptive action of the preparation of geranium Holmova

Research material and methods: The experiments were carried out on 42 white mice weighing 17-23 grams, of both sexes. The drugs Gerask and Gerasfit were administered orally at a dose of 100 mg/kg to 5000 mg/kg in the form of a 2.5% - 10% aqueous solution in the form of a suspension. The animals were monitored for 14 days in a vivarium. Control animals were injected with distilled water in an appropriate volume [2].

Results:

It was found that with the introduction of the studied drugs at a dose of 100-750 mg/kg in animals, there was a short-term excitement (5-7 minutes), which goes into a state of sedation. Preparations in doses of 1000-5000 mg / kg in animals caused general sedation,

mice became inactive, relaxation of the tone of the skeletal muscles of the limbs was noted, briefly gathered in piles. At the same time, the animals reacted to external stimuli: to sound, knocking on the table or mechanical pressure on the tail, and others.

During the observation period, the general condition of the animals receiving the studied preparations of geranium hill did not differ from the condition of the control animals; no death of the animals was observed.

Similar experiments were carried out on 30 rats, weighing 145-165 g, of both sexes. The drugs were administered orally in the form of 2.5-10% suspensions at doses ranging from 500 mg / kg to 5000 mg / kg. With the introduction of the studied preparations of geranium knoll on rats, the conditions observed in experiments on mice were also noted, but they were less pronounced. During the observation period, no deaths of animals were observed. Consequently, the studied preparations of geranium holmaya are relatively low-toxic [3].

When determining the acute toxicity of the studied preparations of geranium Holmova by the end of the experiment, some of the animals were killed and the state of the mucous membrane of the stomach and intestines was examined and it was found that the studied preparations had no negative effects on the gastrointestinal mucosa.

Thus, according to the classification of the toxicity of substances [6], with a single intragastric administration of 2.5% - 10% aqueous suspensions to white mice, the preparations Gerask and Gerasfit were relatively low toxic.

Study of the local irritating effect of preparations of geranium Holmova

The local irritating effect of the preparations of Holmovaya geranium was studied on 16 mice, 12 rats and 6 rabbits. Mice and rats were injected with the studied drugs at various concentrations (from 1% to 10%) into the oral cavity and conjunctiva of the eye.

In a separate series of experiments, the skin-resorptive effect was studied, i.e. the effect of the preparations on the skin of rats and rabbits, previously cleaned from wool.

Results:it was revealed that preparations of geranium Holmovaya in the studied concentrations do not have a significant effect on the mucous membrane of the oral cavity and conjunctiva.

In other series of experiments it was noted that preparations of mollusia geranium at the places of application did not cause any changes.

Consequently, the studied preparations of Holmovaya geranium in the studied doses and concentrations have no local irritating effect.

Study of the cumulative properties of Holmova geranium preparations

The study of the cumulative properties of the studied preparations of Holmova geranium was carried out according to a subchronic test in increasing doses with an intermittent mode of administration. The experiments were carried out on 28 rats weighing 140-171 g, of both sexes. The initial daily dose was 300 mg / kg. This dose was administered for 5 days, then every 5 days the dose of drugs was increased by 2 times, that is:

1 - 5 days at 300 mg/kg = 1500 mg/kg
6 - 10 days at 600 mg/kg = 3000 mg/kg
11 - 15 days at 1200 mg/kg = 6000 mg/kg
16 - 20 days at 2400 mg/kg = 10500 mg/kg

The total dose over 20 days was 21,000 mg/kg. The control group received distilled water in an appropriate volume.

The condition of the animals was monitored for one month.

It was revealed that in the experimental and control groups there were no significant differences in the weight of the animals. The mucous membranes and coat of all animals were

unchanged. All animals showed satisfactory appetite, all groups consumed the same amount of food and water. Respiration in all groups of animals was the same; diarrhea was not observed in any animal [4].

When the animals were dissected by the end of the experiment, a normal morphological picture was observed. In all rats of the experimental and control groups, no visual changes were found.

Consequently, the preparations of geraniums of the hill have no cumulative effect.

Study of the allergenic effect of preparations of geranium Holmova The experiments were carried out on 24 guinea pigs, weighing 340-422 g, of both sexes, as the most sensitive objects. The animals were divided into 3 groups of 8 heads: 2 experimental and control.

The animals of the experimental group were sensitized by subcutaneous injection of the studied drugs at a dose of 250 mg/kg for 3 days. Then, on the 21st day of the experiment, each animal organism sufficiently sensitized with the studied preparation of Holmovaya geranium was injected with a permissive dose of the preparations, which was the total sensitizing dose, i.e. 750 mg/kg.

The control group of animals received distilled water in the appropriate volume during the experiment.

It was found that the animals of both control and experimental groups, the general condition and behavior were the same and did not differ from the intact animals. During the observation period and during the next 10 days after the end of the experiment, the animals retained a good appetite, they were active, breathing was even and calm.

Consequently, the studied preparations of Holmova geranium do not have an allergenic effect.

Study of the effect of preparations of geranium Holmova on the cardiovascular system

The effect of preparations of geranium Holmova on blood pressure and respiration was studied under conditions of an acute experiment on 6 cats, 2 dogs and 10 rats of both sexes with sodium anesthesia (sodium ethaminal at a dose of 40-45 mg kg was injected intraperitoneally)

Blood pressure was recorded on an electric kymograph tape from the common carotid artery through a system of polyethylene tubes with a Ludwig mercury manometer. The system was filled with 5% sodium citrate solution (sodium citrate). In parallel, respiratory movements were recorded using a Marey capsule connected to the trachea of the animals. The studied preparations of Holmova geranium were administered orally using a gastric metal tube at a dose of 100 mg/kg to 500 mg / kg.

It was found that the studied preparations of Holmovaya geranium at a dose of 100 - 250 mg/kg did not significantly affect blood pressure and respiratory rate. Drugs at a dose of 350–500 mg/kg reduced blood pressure for a short time and insignificantly, and no significant changes were observed on the respiratory side [3.5].

In experiments where the effect of drugs on the ECG of anesthetized animals was studied, it was found that the studied drugs at a dose of 100 - 250 mg/kg do not cause changes in heart rate (P – Q, QRS and R – R intervals) and the amplitude of the ECG waves. The studied preparations of Holmovaya geranium at a dose of 350 - 500 mg / kg 15 - 30 minutes after administration causes a noticeable increase in the amplitude and voltage of the R waves and an extension of the R – R interval.

Consequently, the preparations of geranium knoll does not have a significant effect on the function of the cardiovascular system in animals.

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Study of the effect of preparations of geranium Holmovaya on the central nervous system (CNS)

The influence of the studied preparations of geranium Holmovaya on the central nervous system was carried out on 54 white mice, weighing 19 - 21 g, of both sexes. At the same time, the effect of the drug on the spontaneous locomotor activity of animals was first determined.

The experiments were carried out according to the generally accepted method (according to the method of Wu Xi Rui) - in the installation of an actograph. The drug was administered orally at a dose of 250 mg/kg and 500 mg/kg, and control animals received distilled water in an appropriate volume. After the injection of the drug and distilled water, the animals were placed in the mesh chambers of the actograph for 45 min and the amount of locomotor activity was recorded. The data obtained in the experimental groups and control animals were compared. In this case, the data of the control animals were taken as 100%.

In the second series of experiments, the effect of the preparation of geranium Holmovaya on the hypnotic effect of drugs and hypnotics in the conditions of their combined use was studied. Hexenal at a dose of 70 mg/kg and chloral hydrate at a dose of 300 mg / kg were used as hypnotics. The experiments were carried out on 36 mice, weighing 19-21 g, males. The animals of the control group were injected with distilled water + hexenal or chloral hydrate, intraperitoneally. And the test subjects were orally administered the studied preparations of Holmova geranium at a dose of 100 mg/kg and 500 mg/kg and hexenal or chloral hydrate at a dose of 70 mg/kg or 300 mg/kg, respectively. The studied drugs were administered orally 30 minutes before the introduction of sleeping pills and drugs. The duration of the hypnotic effect was taken as the time during which the animals were in a lateral position in the absence of an overturning reflex.

Results: The results obtained when studying the effect of geranium preparations on the physical activity of the preparations are presented in Table 1.

Table 1
Effect of the studied preparations of Holmov geranium at a dose of 500 mg/kg on the motor activity of mice

No.	Experience options	Spontaneous activity of mice		
		in 10 minutes	after 30 minutes	after 45 minutes
1	Control group (dist. Water), g.	48.5 ± 5.1	45.3 ± 3.5	42.5 ± 5.3
2	Holmovaya geranium preparation - Gerask	41.5 ± 4.5	35.6 ± 5.3 *	26.3 ± 4.5 *
3	The preparation of geranium Holmovaya - Gerasfit	38.6 ± 5.3	32.5 ± 4.5 *	25.1 ± 5.5 *

Note: * - reliable data in relation to the control at $P < 0.05$.

As can be seen from the table, the studied preparations of knoll geranium markedly reduce the motor activity in animals.

Experiments on the study of the effect of the preparation of Geranium Holmovaya on the hypnotic effect of drugs and hypnotics in the conditions of their combined use showed that the studied preparations of Geranium Holmovaya at a dose of 100 mg / kg and 500 mg / kg significantly prolongs the duration of sleep caused by Hexenal and chloral hydrate. The results of the experiments are shown in table 2.

table 2
Influence of preparations of geranium Holmova on the hypnotic effect of hypnotics and drugs
(M + m; n = 6)

No.	Study drug	Dose of the injected drug, mg / kg	Sleep duration, in minutes	Sleeping activity, in%
1	Hexenal + H_2O	70 mg / kg + 1 ml	52.5 ± 7.8	100
2	Composition No. 1 + hexenal	100 mg / kg + 70 mg / kg	62.5 ± 6.7	119.3
3	Composition No. 2 + Hexenal	500 mg / kg + 70 mg / kg	65.6 ± 5.5 *	124.5
4	Chloral hydrate + H_2O	300 mg / kg + 1 ml	75.8 ± 10.5	100
5	Composition No. 1 + chloral hydrate	100 mg / kg + 300 mg / kg	95.5 ± 7.5 *	125.98
6	Composition No. 2 + chloral hydrate	500 mg / kg + 300 mg / kg	103.0 ± 8.5 *	135.9

Note: * - reliable data in relation to the control at $P<0.05$.

As can be seen from table 2, the studied preparations of geranium Holmovaya prolong sleep caused by hexenal and chloral hydrate, respectively, by 1.25 and 1.36 times.

Consequently, the studied preparations of Holmovaya geranium noticeably lengthen the duration of the hypnotic effect of hexenal and chloral hydrate. A more pronounced effect on sleep duration is manifested with the combined use of the studied drugs and chloral hydrate.

Study of the effect of preparations of geranium Holmovaya on urination

Experiments to study the effect of drugs on diuresis were carried out on 30 rats weighing 140 - 165 g of both sexes according to the generally accepted method with water load (V.V. Gatsura, 1974).

For this, at the beginning, the amount of urine without water load was determined in each rat. Then each rat was injected with the studied preparations of Holmovaya geranium at a dose of 100 mg / kg and 500 mg / kg, and 15 minutes after administration of the preparation, 4 ml of distilled water per 100 g of animal weight. Then the animals were placed in exchange chambers and the amount of urine excreted per day was collected.

The data obtained in the study of the diuretic activity of preparations of geranium Holmovaya are presented in table No. 3.

Table 3
Effect of preparations of geranium Holmova on diuresis in rats
(M + m; n = 6)

No.	Study drug	Dose of the injected drug, mg / kg	Urine volume, ml	Effect, in%
1	Control	H_2O 4ml/100 g of animal weight	4.65 ± 0.55	100
2	Composition No. 1 + water load	100 mg / kg + 4 ml / 100 g mass	5.62 ± 0.45	121

3	Composition No. 1 + water load	500 mg / kg + 4 ml / 100 g mass	6.1 ± 0.65	124.5
4	Composition No. 2 + water load	100 mg / kg + 4 ml / 100 g mass	6.3 ± 0.61 *	135.5
5	Composition No. 2 + water load	500 mg / kg + 4 ml / 100 g mass	6.37 ± 0.56 *	137.5

Note: * - reliable data in relation to the control at P0.05.<

As can be seen from the table, the studied preparations of Holmovaya geranium in the studied doses markedly increase the amount of daily urine excreted.

1. Study of the effect of preparations of geranium knoll on smooth muscles

The effect of preparations of geranium knoll on smooth muscles was studied on the isolated small intestine of rats weighing 153 - 185 g, of both sexes. The experiments were carried out according to the generally accepted method of Magnus. For this purpose, part of the duodenum 12 was excised from the experimental animals under anesthesia, one end of which was fixed to a glass hook, and the other to Engelman's short arm. Next, the glass hook was placed in a glass containing Tyrode's solution. The latter was saturated with air throughout the experiment, and the temperature was kept at a constant level (38 - 38.5 C).

Results: In this series of experiments, spasm of the isolated intestine was caused by a $BaCl_2$ solution at a concentration of 4 · 10-4 g / ml. After obtaining the initial background, the studied preparations were added to the nutrient fluid at a concentration of 1 · 10-4 g / ml, 3 · 10-4 g / ml, and 8 · 10-4 g / ml. The contact time of the preparations with the isolated intestine was 30 seconds. After adding a certain dose, after 30 seconds, the same concentration of $BaCl_2$ was injected into Tyrode's solution and the antispasmodic effect of the studied preparations of Holmovaya geranium was determined. As a result of the experiment, it was established that preparations of geranium holm in concentrations of 1·10-4 g / ml, 3·10-4 g/ml and 8·10-4 g / ml markedly reduce the spasm and peristalsis of the isolated intestines of rats. In particular, the studied drugs at certain concentrations reduce the spasm of the isolated intestine caused by $BaCl_2$ by 19.5%, 27.3% and 36, respectively,

Therefore, we can conclude that the studied preparations of geranium Holmovaya have a noticeable antispasmodic effect. In this regard, a relatively pronounced antispasmodic effect is observed at a concentration of 8·10-4 g/ml.

Study of the teratogenic and embryotoxic effects of geranium Holmova preparations

In further experiments, we studied the embryotoxic and teratogenic properties of the preparations of the geranium Holmovaya.

NS Experiments were carried out on white laboratory rats in the amount of more than 36 (pregnant females) weighing 150.0-180.0 g and newborn fetuses in the amount of more than 150 in accordance with the methodological requirements of the FC MH RUz.

The experimental animals were kept under normal vivarium conditions at a temperature of 23-260 C. Doses of the test substance were calculated per unit of body weight of the animal, using the highest, 500 mg/kg, and also, the therapeutic one, 100 mg / kg. The test substance was administered orally once a day from 1 to 20 days of pregnancy, covering the periods of implantation, placentation, organogenesis and growth-development of the fetus. A group of animals kept under identical conditions and treated with saline served as a control.

On the 21-22 day of pregnancy, the uterine cavity was opened and visually examined the state of the bicornuate uterus, the distribution of fetuses in them, the state of the corpus luteum in the ovaries, the number of implantation sites, the integrity of the amnion, the

number of live and dead fetuses, resorptions. After resection of the lumen of the uterine horns, the number of placentas was counted, their integrity and blood supply were examined. Then the external development of the head part of the body, trunk, upper and lower extremities was carefully checked under the magnifier, the length of growth, the development of the auricle, eye slits, external genital organs were measured. With this visual examination, attention was paid to the presence of deformities.

Results

visual analysis shows the absence of embryotoxic and teratogenic manifestations and the normal development of the fetus.

There was an increase in the body weight of the animals by 4.7% when the drug was administered at a therapeutic dose and by 15.0% at the maximum dose, compared with the control data (4.0g). Craniocaudal sizes also corresponded to normal growth - 5.6-5.8 cm. Correspondence between the number of corpus luteum and fetus proved the absence of pre and post implantation mortality.

The bodies of the fetuses contained in Bouin's liquid were examined according to the Wilson method. It was found that the state of internal organs in fetuses born both control and from mothers who received the drug both in the therapeutic dose and in the maximum dose corresponded to the norm in the absence of pathology.

Dawson's bone analysis revealed no abnormalities.

The analysis of growth and development in the postnatal period showed that the state of motor reflexes, the development of the external genital organs, the muscular system, etc., correspond to the norm.

Thus, analyzes of studies of preparations of Holmov geranium showed positive results, which indicate the absence of teratogenic and embryotoxic properties for animal fetuses.

Study of the specific anti-inflammatory activity of preparations of geranium Holmova

Non-steroidal anti-inflammatory drugs (NSAIDs) and non-narcotic analgesics are among the most widely used drugs in medicine, due to their pronounced analgesic and anti-inflammatory effect. According to JR Vane (2000), the main pharmacological action of NSAIDs is associated with the suppression of COX activity, which leads to a violation of the synthesis (PGE2) of anti-inflammatory prostaglandins.

It is known that COX has two isoforms (COX-1, COX-2). With a decrease in the activity of COX-2, which is locally formed during tissue damage, the synthesis of anti-inflammatory prostaglandins decreases (Nosov E.A., 2000; Konorev M.R., Kovaleva L.F., 2006, etc.) On the contrary, suppression of the activity of COX-1 , responsible for the synthesis of gastroprotective prostaglandins E_2; J_2 from arochidonic acid, leads to the development of erosive and ulcerative complications - damage to the gastric mucosa (JR Vane, 2000; L.Yu. Iliechenko, 2009, etc.)

According to F. Kenna (1998), G. Singh (1998), N.A. Solieva (2005), S.A. Kadyrova (2004) and others. NSAIDs have a number of unwanted side effects. Side effects with the use of drugs, including NSAIDs and antibiotics, develop in 10 - 30% of hospitalized patients (M.Pirmohamedetall. 1998; A.N. Yunuskhodzhaev, B.Sh. Shoislomov, 2007, etc.).

Analyzing various literary sources of D.Z. Abdusamatov (2008) and S.R. Kadyrov (2004) and others show that gastroduodenal side effects can be observed in 20-55% of patients who regularly took NSAIDs, in 10 - 30% with esophagogastroduodenoscopy ulcers of the stomach and 12 duodenal ulcers are revealed. It should be noted that side effects from taking NSAIDs predominantly occur in men, often causing temporary, often permanent disability [6.8].

Until the end of the twentieth century, the arsenal of NSAIDs reached more than 100 names. However, despite this, cardinal changes in terms of reducing the incidence of inflammatory processes have failed. Moreover, the main NSAIDs are synthetic. Observations have shown that the use of synthetic NSAIDs, even in small doses, can lead to the development of severe side effects from the gastrointestinal tract (GIT). Almost all synthetic NSAIDs are imported and imported from foreign countries, which negatively affects the monetary fund of the Republic. Consequently, the issues of treating inflammatory processes cannot yet be considered satisfactorily resolved, since many anti-inflammatory drugs with basic properties cause a number of undesirable phenomena associated either with toxic properties or side effects of these drugs. That's why,

Considering the above, we have developed and studied the biological activity of a new medicinal composition No.1 and No.2 based on dry extract of hill geranium, under the code name "Gerask" and "Gerasfit", including dry extract of hill geranium.

Study of the anti-inflammatory action of the preparations of Holmova geranium: "Gerask" and "Gerasfit"

The experiments were carried out on rats weighing 156 - 187 g of both sexes in comparison with a well-known anti-inflammatory drug of plant origin - glycyram. Aseptic inflammation was induced according to the method described in the book Stepanyuk (2000) and Khabriev (2005) with phlogogenic substances: formalin (2% solution), histamine (0.1% solution), serotonin (0.2% solution) and dextran (6% solution). Solutions of these substances were injected in an amount of 0.15-0.20 ml into the dorsum of the aponeurosis of the ankle joint of rats [6].

The anti-inflammatory activity of the studied preparations of geranium Holmova "Gerask" and "Gerasfit" and the comparison drug of plant origin "Glycyram" was determined oncometrically by the difference in the volume of the paws before the beginning of the experiments and at the moment of maximum development of the volume, depending on the nature of the phlogogenic agent. According to the method, the paw volume was measured with a water plitismometer before and after 60 minutes. within four hours, and then 6 and 24 hours after injection of solutions of phlogogenic agents. The studied drugs were administered orally in 30 minutes. before the introduction of phlogogenic agents at a dose of 100 mg/kg and 500 mg / kg, and the reference drug glycyram at a therapeutic dose of 50 mg/kg.

Study of the Effect of Geranium Holmova Preparations on Formalin-Induced Inflammation

To identify the optimal composition of the studied drugs, screening studies were carried out, where the effects of the studied drugs on the models of aseptic inflammation caused by 2% formalin solution were studied. The studied preparations of Holmova geranium ("Gerask" and "Gerasfit") were administered in doses of 100 mg /kg and 500 mg/kg 30 minutes before the introduction of formalin. Measurement of the volume of the rat paws was performed before and every 2 hours for 4 hours, and then 6 and 24 hours after the formalin administration. Under similar conditions, control animals were injected with distilled water in an appropriate volume.

Results: Experiments have shown that both preparations of Holmovaya geranium in the studied doses had a pronounced inhibitory effect on the development and course of formalin inflammation [7]. Among the studied preparations of geranium Holmovaya, a more pronounced anti-inflammatory effect was noted with the introduction of the drug "Gerask". The data obtained are shown in Table 4.

As can be seen from Table 4, in rats of the control group, the average increase in paw volume in relation to the initial level at the height of formalin inflammation was 0.72 cm ± 0.07 cm, which was taken as 100%.

Table 4
Effect of the studied preparations of Holmova geranium on formalin-induced inflammation (M ± m, n = 6)

No.	**Study drugs**	**The dose of the administered drug, in mg / kg**	**Initial average volume of rat paws, ml**		**Average gain in paw volume in rats**		**Counterweight inflammatory effect, in%**
			Before the introduction of formalin	**4 hours after formalin administration**	**in ml**	**v %**	
1	Control group	2 ml / kg H_2O	0.72	1.44	0.72 ± 0.07	100	-
2	Experienced group, Gerasfit	100 mg / kg	0.73	1.22	0.49 ± 0.058 *	68.0	32.0
3	Gerasfit experience	500 mg / kg	0.72	1.10	0.38 ± 0.022 *	52.7	47.3
4	Experienced group Gerask	100 mg / kg	0.71	1.13	0.42 ± 0.053 *	59.0	41.0
5	Experience Gerask	500 mg / kg	0.72	1.105	0.385 ± 0.026 *	53.47	46.53
6	Glycers	50mg / kg	0.73	1.16	0.43 ± 0.045 *	56.72	43.28

Note: * - reliable data in relation to the control at P0.05.<

In the experimental groups under the influence of "Gerasfit" and "Gerask" at a dose of 100 mg / kg and 500 mg / kg, this indicator was equal to 0.49 ± 0.058 - 0.38 ± 0.022 ml and 42.0 ± 0.053 - 0.385 ± 0.026 ml respectively.

Consequently, the studied preparations of Holmovaya geranium reduce the development of inflammation by 32% - 47.3% and 41.0 ± 46.53%, respectively, and when administered to Glyceram - by 43.28%

Considering the above, a more in-depth study of the anti-inflammatory properties among the studied preparations of Holmovaya geranium was carried out with the preparation "Gerask".

In a separate series of experiments, the effect of "Gerask" on inflammation caused by histamine, serotonin and dextran was studied. The experiments were carried out in comparison with the natural herbal anti-inflammatory agent glycyram. Glycyram was administered orally at a therapeutic dose, i.e. - 50 mg / kg. It was found that the drug "Gerask" also had a pronounced anti-inflammatory effect in inflammation caused by phlogogenic substances: histamine, serotonin and dextran. In terms of effectiveness, "Gerask" is not inferior to the comparison drug Glycyram. The results obtained are shown in Table 5. Summarizing the results of the above studies, it can be noted that "Gerask" showed a high ability to suppress aseptic arthritis caused by the introduction of various phlogenic agents. These data indicate that

Table 5
Effect of the drug "Gerask" on inflammation caused by histamine, serotonin, dextran

No.	**Study drugs**	**The dose of the administered drug, in mg / kg**	**Initial average volume of rat paws, ml**		**Average increase in the volume of rat paws in relation to the initial**		**Counterweight inflammatory effect, in%**
			Before the introduction of formalin	**4 hours after formalin administration**	**in ml**	**v %**	
The histamine model of inflammation							
1	Control group	1.5 ml H_2O	0.72	1.46	0.74 ± 0.036	100	-
2	Gerask	100 mg / kg	0.73	1.16	0.43 ± 0.048 *	59.5	40.5
3	Gerask	500 mg / kg	0.72	1.09	0.37 ± 0.03 *	50.5	49.5
4	Glycyram	50 mg / kg	0.72	1.04	0.32 ± 0.03 *	57.0	43.0
Serotonin Model of Inflammation							
5	Gerask	100 mg / kg	0.75	1.22	0.47	63.	36.7

					± 0.105 *	3	
6	Gerask	500 mg / kg	0.72	1.12	0.38 ± 0.022 *	52.2	47.8
7	Glycyram	50 mg / kg	0.73	1.04	0.43 ± 0.03 *	58.5	41.5
Dextran Model of Inflammation							
eight	Gerask	100 mg / kg	0.73	1.14	0.42 ± 0.05 *	56.9	43.1
nine	Gerask	500 mg / kg	0.72	1.13	0.41 ± 0.03 *	55.3	44.7
ten	Glycyram	50 mg / kg	0.72	1.15	0.42 ± 0.03 *	57.0	43.0

Note: * - reliable data in relation to the control at P<0.05.

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