

DETERMINATION OF THE ACUTE TOXICITY OF AN OINTMENT CONTAINING BLUNT-NOSED VIPER (*VIPERA LEBETINAE*) VENOM

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Relevance: Today, dermatological diseases rank among the most prevalent health conditions. In order to meet the population's demand for effective therapeutic agents, it is essential for pharmacists to expand the range of available dermatological medications and to conduct comprehensive pharmacological and toxicological evaluations of new formulations. One of the key assessments in this process is the determination of a drug's **acute toxicity**, which identifies the dosage range that can be safely used in animals and humans. These tests are carried out using specific standardized methods, which ultimately determine the permissible therapeutic dosage of a given preparation.

Objective of the Study: To evaluate the acute toxicity of an ointment formulation developed with blunt-nosed viper (*Vipera lebetinae*) venom.

Materials and Methods: The experiments were carried out on healthy, sexually mature white rats weighing 180–200 grams, using the Noakes and Sanderson method. The animals were divided into 4 groups of 6 rats each and housed in standard plastic cages under controlled conditions (temperature: 20–25°C, humidity: 40–70%) with continuous access to food and water. Initially, the animals were exposed to minimal doses of chloroform for sedation. Then, 0.5 g of the test ointment was applied to a pre-shaved area of the skin. The same procedure was used to apply the reference industrial ointment “Nayatox.”

Results: Neither the test ointment nor the reference ointment showed signs of acute toxicity within the first hours or the first day of the experiment. Throughout the 14-day observation period, no changes were detected in the animals' body weight, behavior, or food intake. No cases of poisoning or intoxication were observed. Behavioral analysis also revealed no significant differences between the two treatment groups. The results are presented in tabular form (Table 1).

Table 1. Comparative Evaluation of Acute Toxicity Between the Test Ointment Containing *Vipera lebetinae* Venom and the Industrial Ointment “Nayatox”

№ Animals	Ointment with Blunt-Nosed Viper Venom (0.02%, test sample)				Nayatox Ointment (20 g, Mekophar Chemical-Pharmaceutical JSC, Vietnam)			
	Wei ght, g	Dos e, g/kg	Route of Administration	Re sult	W eight, g	Dose, g/kg	Route of Administration	Re sult
1	190	1 r.	Topical (on skin)	No lethality	200	1 r.	Topic al (on skin)	No
2	200			No lethality	210			lethality
3	201			No lethality	204			No
4	210			No lethality	195			lethality
5	204			No lethality	190			No
6	207			No lethality	197			lethality
								No
								lethality
								No
								lethality
								No
								lethality
								No
								lethality
1	210	2 r.	Topical (on skin)	No	198	2 r.	Topic al (on skin)	No
2	198			lethality	205			lethality
3	183			No	200			No
4	205			lethality	205			lethality
5	200			No	190			No
6	197			lethality	190			lethality
				No				No
				lethality				lethality
				No				No
				lethality				lethality
				No				No
				lethality				lethality
LD ₅₀	>2 g.				>2 g.			

Conclusion:

The externally applied ointment containing nonivamide, capsicum oleoresin, and blunt-nosed viper (*Vipera lebetinae*) venom (0.02%) showed no signs of acute toxicity when compared to the reference preparation, the industrially manufactured ointment "Nayatox." No mortality was observed in any of the experimental animal groups.

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