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REPRODUCTIVE TOXICITY OF METHYLAMINOGROSGEMIN OF METHYLIODID

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Modern home medicine uses about 250 species of the medicinal plants. Only 50 species (20%) of them are cultivated, and the rest of them (more than 20 000 species) are growing wild.

Great importance acquire plant preparations intended for the restoration of the detoxicating function of the liver, and restoration of the metabolism, carbohydrate metabolism first of all. In accordance with the information of WHO (2004) in the whole world there are more than 200 million people suffering from pancreatic diabet and the amount of such patients increases every year. While 80–90% of the sich people will have diabetes of the second type future. In connection with this situation there is the great demand for medicaments that are able to correct that disease effectively [1].

Among medicinal plants artichoke is well-known. Leaves of artichoke contain coumarin, citric, lactic, apple acids, flavonoids, sesquiterpene lactones, potassium salts, carbohydrates, proteins, B vitamins, numerous enzymes etc. Because of the presence of cinarine leaves of artichoke have choleretic action and are able to restore hepatic cells. The artichoke's leaves are also able to decrease blood level of fatty acids and cholesterin.

Artochoke is also recommended in case of hepatic toxicosis, adipose degeneration of the liver, pancreatic diabet, atherosclerosis, rheumatism, impaired cardial function, renal insufficiency, allergy, eczema, psoriasis.

It is necessary to mention that sesquiterpene lactone was received from artichoke. Earlier that substance was received from the plants of genus *Centaurea*. International scientific-and-production holding «Fitochemistry» received lyophilizied form of that substance for pre-clinical trial.

Material and methods

We followed officially recommended methods for pre-clinical trial [2].

For our investigation we used males and females of the pedigreeless white laboratory rats that were kept in the same cages. Their body weight varied from 200 to 270 grammes. Control and experimental animals were of the same age, they were received from the nursery at the same time.

For the investigation of the embryotoxicity of dimethyaminodrossgemin of methyliodid we administrated the preparation to the pregnant females of the experimental group per os at the rate of 5 milligrammes/100 gramms of the body weight. After the administration of the preparation we looked after behaviour of the rats (of the experimental and intact groups). We investigated their general condition, their reaction to different sensory stimulations, their coordination. Period of their pregnancies was also controlled.

Results of the investigation

Behavior rates of the intact yuong rats (whose mothers weren't administrated with the preparation) are shown in the table 1.

The young rats distributed to the three groups differed by distinct well seen features. Young rats of 2 and 4 month ages were characterized by long period of the location in central illuminated part of the field. They were also characterized by high horizontal and vertical motor activity. Grooming was slight and level of the vegetative balance was low. From the table 1 we can see that orientation-investigative reaction of the more aged young rats was more similar to that in the grown animals.

Grown rats administrated with the methylaminogrosgemin of methyliodid did not have any pathologic changes in their behaviour and appearance.

We established that the development of young rats whose mothers were administrated with the tested preparation did not differ from that of the intact young rats; specifically mortality was absent, there was normal body weight gain and normal appetite and behaviour. After sacrifice and autopsy of the young rats pathomorphologic changes weren't discovered.

Table 1. **Behaviour rates of the intact young rats at the age of 2 and 4 month**

Rate	Age of the young rats	Behavior activity		
		High	Intermediate	Low
Horizontal motor activity	2 month age	71,3±6,4	67,1±7,0	63,9±6,2
	4 month age	68,8±8,2	64,4±7,1	59,2±5,5
Duration of location in the centre	2 month age	98,1±2,7	71,1±3,6	48,4±4,4
	4 month age	83,1±7,2	56,4±5,0	49,3±2,5
Vertical motor activity	2 month age	22,6±2,8	14,9±1,4	8,2±0,9
	4 month age	19,4±2,2	9,9±1,3	6,8±1,1
The number of bowel movements	2 month age	1,7±0,3	2,9±0,3	4,5±0,4
	4 month age	1,4±0,2	2,3±0,2	3,9±0,2
Duration of grooming	2 month	2,5±0,3	8,2±0,7	12,9±1,8
	4 month	5,6±0,9	11,7±1,3	19,8±2,7
Note: $p < 0.05$; $p < 0,001$; $p < 0,001$ in comparison with the first group.				

Behavior rates of the young rats whose mothers were administrated with the preparation are shown in the Table 2.

Table 2. **Behaviour rates the experimental young rats at the age of 2 and 4 month**

Rate	The age of the young rats	Behaviour activity		
		High	Intermediate	Low
Horizontal motor activity	2 month	70,8±6,9	64,1±6,0	61,2±5,9
	4 month	66,22±7,1	61,0±6,7	58,1±6,2
Duration of location in the centre	2 month	94,9±8,0	62,4±5,2	47,9±4,1
	4 month	77,2±4,8	52,34,8	42,4±4,1
Vertical motor activity	2 month	24,7±1,9	13,4±1,1	7,4±0,9
	4 vonth	20,6±2,4	10,91,4	6,8±0,8
Duration of bowel movements	2 month	2,0±0,2	2,6±0,2	4,2±0,4
	4 month	1,8±0,1	2,1±0,2	3,9±0,2
Duration of grooming	2 month	2,8±0,3	7,9±0,9	10,0±1,3
	4 month	4,2±0,9	10,1±1,2	14,4±1,9
Note: $p < 0,05$; $p < 0,001$; $p < 0,001$ in comparison with the first group.				

From the table 2 one can see that there isn't any changes in the behaviour of the young rats whose mothers were administrated the tested preparation. Specifically, we did not discover any changes in their orientation-investigative reaction, in their horizontal and vertical motor activity.

Consequently, we can resume that the tested preparation (methylaminogrosgemin of methyliodid) is not charactirized by gonadotropic toxicity.

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МЕТИЛИОДИД ДИМЕТИЛАМИНОГРОССГЕМИН ПРЕПАРАТЫНЫҢ РЕПРОДУКТИВТІ УЫТТЫЛЫҒЫ

«Ашық алаң» тест тәжірибелік және бақылаулық топ тышқандарының қозғауыш белсенділігі және жүйелік мінез-құлығын зерттеулерінің нәтижелерін талдау, метилиодид диметиламиногроссгемин препаратының репродуктивті зиянсыздығының жоқ екендігін көрсетті.

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РЕПРОДУКТИВНАЯ ТОКСИЧНОСТЬ ПРЕПАРАТА МЕТИЛИОДИД ДИМЕТИЛАМИНОГРОССГЕМИН

Анализ результатов исследований в тесте «открытое поле» двигательной активности и эмоционального поведения крысят опытной и контрольной групп показал отсутствие репродуктивной токсичности препарата метилиодида диметиламиногроссгемин.