



EVALUATION OF THE EFFECT OF HARVESTING PLANTS WITH HIGH BIOLOGICAL ACTIVITY ON THE CENTRAL AND PERIPHERAL NERVOUS SYSTEM

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ABSTRACT

This article presents the results of a study of the psychopharmacological activity of BAC, obtained on the basis of vegetation common in our country. The studied substance was studied by the action and search, the anxiolytic activity of experimental animals, as well as by oral administration at doses of 5.0 and 15 mg/kg of its activity in relation to emotions or fear. As a result of the screening studies, it was noticed that the action and search activity of experimental animals decreased under the influence of the substance under study. At the same time, this substance showed little anxiolytic activity in relation to the control group. Also, in the Sonberg method, the excretion of urine and excrement by experimental animals decreased due to noise and external factors. Thus, based on the conducted screening study, it can be concluded that the studied substances significantly reduce fear and emotional arousal. This indicates that the studied substances have a calming effect.

Relevance. It is known that in medical practice, in particular in neurology and psychiatry, tranquilizers are used to reduce or relieve fear, anxiety, irritability, emotional tension caused by various diseases [1, 2]. Although tranquilizers with neuroleptics in the general classification traditionally belong to the class of psycholeptics, the results of their use in clinical practice and further research have shown that many drugs belonging to different groups have the ability to demonstrate soothing (original or predominantly tranquilizing) properties. The manifestation of such specificity indicates the occurrence of psychotropic effects in various mental disorders involving many neurotransmitters, the complexity of their mechanisms and the totality of some neurochemical and neurophysiological connections [3-7]. Mainly synthetic drugs with anxiolytic action are widely used today in the medical treatment of diseases such as neuroses, anxiety, anxiety states, chronic fatigue syndrome, depression. These drugs, along with high activity, will also have side effects that cause discomfort in patients, such as excessive amounts of sedatives, muscle weakness, sleep disorders, dizziness, emotional lability. In this regard, a number of scientific studies are being



conducted today to find and put into practice natural preparations with high pharmacicity, obtained on the basis of plants with significantly fewer side effects. In this direction, extensive scientific research is also being conducted in our country to study the psychopharmacological activity of natural and synthetic substances [8-14]. In particular, the anticonvulsant, antidepressant and anxiolytic activity of newly synthesized natural and synthetic structural substances is studied by comparing them with some drugs widely used in practice under experimental conditions. As a direct continuation of this research work, screening studies of the biological activity of the plant collection with its large-scale distribution in our country and Central Asia were carried out [15-21].

The purpose of the study. To study the effect of a biologically active substance on the central and peripheral system, obtained on the basis of herbal preparations, in the conditions of the study.

Materials and methods of research. All studies were conducted for 14 days on breeding laboratory white mice with a body weight of 20-22 g, which were cared for and stored in standard quarantine conditions, and white calamuses with a body weight of 180-220 g, as well as cats and rabbits with a body weight of 2-3 kg. A decoction of burdock, bird taron, fragrant brain root, water pepper and medicinal chamomile, prepared in equal proportions, was used as an object of research. Vegetable collection, or biologically active collection (BAC), was administered orally to experimental animals at doses of 5 and 15 mg/ kg in the form of an aqueous solution and distilled water in equal volumes to animals of the control group. Psychopharmacological indicators of the activity of the action of the substance under study in accordance with the recommendations presented in the manuals and literature of I. Lapin [22], motor and search activity of K. Hall [23] and anxiolytic activity were studied using the methods of Killfoil and Sonberg [24].:

I. Lapin et al. the study of the effect of movement on activity in the method was carried out in a special chamber divided into squares. In this case, the movement of experimental animals in squares and standing on the walls of the chamber (verticalization) were noted as the main indicators.

- in the process of studying experimental animals, the behavior in recognizing new objects is usually studied by the "open field" method. This method is used in conducting scientific research on the study of hypnotic, sedative, tranquilizing, adaptogenic and nootropic properties of substances studied by evaluating the action and search activity of experimental animals. At the same time, the experimental animals were placed in a zone divided into squares with round holes in the middle up to 45-60 cm high, and for 2 minutes the movement and search activity of the animals were observed.

- the antisensory effect of the test substance was studied by injecting the anxiogenic substance corazole under the skin of experimental animals at a dose of 20 mg/ kg in a special maze divided into light and dark rooms with a total of 5 units. In this case, the anxiolytic activity of the substance against the effects of corazole was assessed by the length of time spent in the light chamber and an increase in the number of inter-chamber movements.

- When studying the properties of fear or feelings against arousal by the Sonberg method, white rats were placed in separate rooms, noting the repetition of urine and feces secretions caused by fear in them under the influence of an external calling sound or noise.

Based on the conducted studies, a sample of the results obtained was carried out in comparison with the control group, and statistical processing of the results was carried out using the methods presented in R.V. Strelkov [24, 25].

Results and their discussion. 1. *Evaluation of the effect of BAC on motor activity with a single dose in white mice using the Lapin method.* As a result of the conducted studies, the number of standing (verticalization) in experimental animals under the influence of the



studied substance decreased in accordance with the initial indicators. Usually, using this research method, the stimulating effect of substances on central α -adrenergic receptors is studied against the background of the introduction of phenamine or amphetamine into a special analyzer [24]. The results of the preliminary screening study, on the other hand, allow us to conclude that the substance under study showed an inhibitory effect on these receptors.

2. *Evaluation of the effect of BAC on motor and search activity at a single intake in white mice using the "open field" Hall method.* In studies of the effect of BAC on movement and search activity by the "open field" method, it was noticed that under the influence of the absorbed substance: the action and activity of qiduv decreased in accordance with the doses and in proportion to them. This makes it necessary to conduct research on the sedative (hypnotic) activity of this substance.

3. *Investigation of antiemotional effects of BAC in white mice with a single dose using the Kilfoyle method.* Based on the results obtained, the activity of the test substance at a dose of 5.0 mg/kg according to the K index was low, increasing up to 1.25 times and up to 1.6 times at a dose of 15.0 mg/kg. Also, in terms of the number of transitions between the labyrinth chambers and the activity of mobility in the average light chamber, all doses showed higher activity from 1.1 to 1.5 times, respectively, in relation to the control group.

Table 1. The effect of the test substance against the sensitivity of white mice using the Killfoil method. n=10.

| | Substances and groups | Doses in mg/kg | Initial state Index K=Bright/dark | After 1 hour | Effect |
|---|-----------------------|----------------|--------------------------------------|--------------|--------|
| . | Control group | Dis.water | 1,12±0,11 | 0,45±0,01 | 1 |
| . | BAC | 5,0 | 1,21±0,08 | 0,56±0,02 | 1,25 |
| . | | 15,0 | 1,19±0,07 | 0,72±0,14 | 1,6 |

Note. $P \leq 0.05$ comparison with the control group

From the results of the experiment presented in Table 1, it can be concluded that the studied substance has a small amount of anxiolytic activity compared to the control group. This in turn makes it possible in the future to conduct research comparing the properties of this substance with certain anxiolytic drugs.

4. *Exploring the effects of BAC's Sonberg method against fear and feeling excitement.* In the Sonberg studies, stool and urine excretion was observed in animals of the control group under all external influences, that is, in all 10 of these influences, defecation and urine excretion was recorded within 90-120 minutes after administration of the test substance, respectively.

Table 2. Effect of BAC on stool and urine excretion by Sonberg method.

| | Substances and groups | Doses in mg/kg | Frequency of stool and urine excretion as a result of each external influence | |
|---|-----------------------|----------------|---|--------------------------|
| | | | Repeated defecation | Repeated urine discharge |
| . | Control group | Dis.water | 10 | 10 |



| | | | | |
|---|-----|------|---|---|
| . | BAC | 5,0 | 8 | 8 |
| | | 15,0 | 6 | 6 |

Thus, when exposed to Pirazolone iodine methylete and Pirazolone chloride, it was observed that defecation and urine excretion did not increase proportionally to each other from 20% to 40%, respectively, compared with the control group. Thus, based on the conducted screening study, it can be concluded that the studied substances significantly reduce fear and emotional arousal.

Conclusions. Thus, in bfy screening studies, it was found that central α – adrenoreceptors do not have a stimulating effect. At the same time, the control group of movement and search activity in the " open field " method relatively clearly reduced it and showed high anxiolytic activity.

Also, in the Sonberg method, the excretion of urine and excrement by experimental animals decreased due to noise and external factors. Thus, based on the conducted screening study, it can be concluded that the studied substances significantly reduce fear and emotional arousal. This indicates that the studied substances have a calming effect.

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