STUDY OF EFFECT OF OLIGOPEPTIDES DERIVATIVES ON RATS BEHAVIORAL RESPONSES IN THE "OPEN FIELD" TEST

Solovyova V. O.
National University of Pharmacy, Kharkiv, Ukraine
ivkireev@ukr.net

Introduction. System reaction to stress, which is aimed at eliminating or mitigating negative effects, is accompanied by changes in behavior, autonomic, motor, sensory and other body functions. Behavior stress is an integral part of the overall behavior, thus changing behavioral reactions leads to inhibition of the central nervous system.

Aim. The purpose of this work was to study the effect of oligopeptides derivatives on behavioral responses of rats in the "open field" test.

Materials and methods. The study objects were oligopeptides derivatives. The study of behavioral responses was performed using the "open field" test. Investigated substances were administered orally in the form of aqueous solutions in doses of 70 and 100 mg/kg in 60 minutes before the experiment start. The animals of control group were injected with the corresponding volume of saline. "Open field" test recorded the following parameters: rear onto its hind legs number - vertical component of estimated response, number of crossed squares - horizontal component; number of explored holes - the hole exploratory behavior that reflects exploratory activity, and the number of defecation, urination and grooming acts - indicator of animal emotion.

Results and discussion. The study found that the number of crossed squares was significantly increased after the administration of compound 2 at a dose of 70 mg/kg by 72.2% and at a dose of 100 mg/kg by 56%, compound 4 at a dose of 70 mg/kg by 67% and at a dose of 100 mg/kg by 83.3%. The administration of the compounds was affected to the number of explored holes as follows: compound 1 at a dose of 100 mg/kg, compound 2 at a dose of 70 mg/kg, compound 5 at a dose of 100 mg/kg increased the index by 88.9%.

During the study it was found that the greatest influence on the behavior of rats, such as psycho-stimulant activity, showed the compound 6 which increased the number of crossed squares in 2 times at a dose of 100 mg / kg, the number of vertical racks in 1,7 times, and the number of explored holes in 1.8 times, in comparison with a group of control animals. The administration of the same compound at a dose of 70 mg/kg influenced the behavior of experimental animals such as the number of crossed squares increased by 64.8%, the number of vertical racks by 56%.

Conclusions. Among the seven oligopeptides derivatives all substances are characterized by psycho-stimulant activity at a dose of 100 mg/kg. The greatest influence on the behavior of rats showed the compound 6.