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CONDITIONED REFLEX LEARNING AND MEMORY OF WHITE RATS OF DIFFERENT AGES UNDER THE INFLUENCE OF THE BIOMASS OF STREPTOMYCETES ISOLATED FROM THE SOILS OF THE REPUBLIC OF MOLDOVA

Garbuzneac Anastasia[1]*, Sheptitsky Vladimir[2]
[1]Moldova State University, Chisinau, Republic of Moldova
[2]Institute of Physiology and Sanocreatology, Chisinau, Republic of Moldova
*E-mail: 11_lav_11@mail.ru

The aim of this work is a comparative study of the effect of long-term consumption of biomass of strains *Streptomyces massasporeus* CNMN-Ac-36 and *Streptomyces fradiae* CNMN-Ac-11 isolated from the soils of the central part of Moldova on the process of developing defensive conditioned reflexes and conditioned reflex memory in white rats of different ages (young and old).

The studies were performed on male Wistar rats. For 90 days animals of the experimental subgroups received daily a food supplement to the standard diet at a dose of 250 mg/kg of live weight dried biomass of two local strains of streptomycetes – *Streptomyces massasporeus* CNMN-36 or *Streptomyces fradiae* CNMN-Ac-11 grown on a nutrient medium with previously determined amino acid and lipid composition. 90 days after the animals began to consume the biomass of streptomycetes, at the age of 4 months (young) and 15 months (old), they began to develop conditioned reflexes. Rats that were fed a standard diet served as controls. To study the process of associative learning the method of developing a conditioned reaction of active avoidance of a painful stimulus was used. In order to study the processes of conditioned reflex memory the dynamics of the latent period of the avoidance reaction was determined.

It was found that long-term consumption of biomass of local strains of streptomycetes – *Streptomyces massasporeus* CNMN-36 and, to a greater extent, *Streptomyces fradiae* CNMN-Ac-11 significantly stimulates the development of a conditioned response of active avoidance in young and, especially, old animals, thereby facilitating the process of conditioned reflex learning. In addition, the consumption of *Streptomyces massasporeus* CNMN-36 biomass and, to a greater extent, *Streptomyces fradiae* CNMN-Ac-11 significantly reduces the latent period of the avoidance reaction at various times after the development of a conditioned active avoidance reaction in young and, especially, old animals, thereby contributing to slowing down the extinction of traces of conditioned reflex memory.

Thus, local strains of streptomycetes *Streptomyces fradiae* CNMN-Ac-11 (primarily) and *Streptomyces massasporeus* CNMN-36 (to a lesser extent), isolated from the soils of Moldova, are promising for further research in order to isolate and identify substances with neuroprotective and nootropic properties.

Keywords: streptomycetes, conditioned reflex learning, memory, neuroprotective activity, nootropic properties.