NEUROPROTECTIVE POTENTIAL OF *AJUGA GENEVESIS* AND *AJUGA REPTANS* EXTRACTS IN PROTECTING AGAINST MEMORY DYSFUNCTIONS AND COGNITIVE DECLINE IN ANIMALS

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Abstract

Cognitive dysfunction, also known as dementia, is a disease that mainly affects dogs and cats and is is directly related to the aging of the animal, being marked by a decline in brain functions and occurs in 28% of cats and 50% of dogs over 11 years of age. The signs and symptoms of dementia are easily visible by simply observing the animal's behavior: it will learn very difficult new behaviors or they will not learn at all, and the dispositions and commands will be executed with difficulty compared to how they were done before the disease set in. In the present study, we investigated the potential of some extracts from the plant species Ajuga genevensis and Ajuga reptans to counteract cognitive dysfunctions, respectively of short-term memory (STM) and long-term memory (LTM). The behavior of seeking food (reward) and of immobility operationalize the concept of motivation for survival and are directly associated with the functionality of the central dopaminergic pathways and inversely associated with cognitive decline. Motor dementia is associated with cognitive dementia, and from the realization of a motor behavior to the activation of the neurogenesis process, studies have shown a direct relationship. A number of 30 white, male Wistar rats, aged 4 months, with a weight of 320±10g at the beginning of the experiment, were used for the research. According to the data obtained in the in vivo tests, in the three-arm maze test (Y-maze) all groups treated with extracts of Ajuga sp. prove an improvement in STM. The group treated with Ajuga reptans at a high dose (75 mg/kg body weight) showed the most intense STM-improving activity, comparable to that of healthy control animals. Regarding LTM, all groups treated with extracts of Ajuga sp. have had improvements. The batch treated with Ajuga genevensis extract in a low dose (of 25 mg/kg body) showed the most intense action of improving both LTM and STM, the intensity of the effect remaining relatively constant during the 7 days of administration. The obtained results open new directions of intervention in the case of cognitive decline and memory disorders in animals based on natural plant extracts.

Key words: animal model, dementia, neuroprotection, memory, Ajuga, Alzheimer