

Natureza do trabalho: Resumo

TÍTULO

EVALUATION OF ANTIDEPRESSIVE AND ANXIOLYTIC POTENCIAL OF FRUTICULIN A IN BEHAVIORAL CHANGES INDUCED BY CLONIDINE IN MALE MICE

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RESUMO

Introduction: Fruticulin A is a rare compound in nature, it has been isolated from the ethanolic extract of *Salvia lachnostachys*, being its major component. Piccinelli et al. (2014)(1) has observed the compound showed anti-inflammatory activity in carrageenan-induced paw oedema model in mice. **Objectives:** To investigate Fruticulin A potential in modifying behavioral induced by chronic administration of clonidine in mice. **Material and Methods:** Male Swiss mice were separated as follows: Naive (n = 8): (0.9% saline solution, ip); Control (n=8): (clonidine 0.8 mg/kg (ip)); Fruticulin A (n=8): (clonidine 0.8 mg/kg ip + Fruticulin A 3 mg/kg vo). Animals received saline or clonidine ip for 7 days and oral treatment with saline or Fruticulin A has started from the fifth day. The literature reports that administration of clonidine (an alpha-2 adrenergic agonist selective for pre synaptic neurons) for 7 days at 0.8 mg/kg ip, can determine behavioral changes in mice, including depression of the central nervous system (CNS)(2). General behavior was evaluated in the open field apparatus for 5 minutes after 7 days of treatment with clonidine or saline and the parameters evaluated were locomotion, the number of lifting, cleaning and freezing (in seconds). **Results:** In locomotor activity chronic administration for 7 days of clonidine led to a decrease in exploration when compared to naïve group ($162.0 \pm 8.0^{***}$) versus Control (111.0 ± 6.0), which was reversed by treatment with Fruticulin A for three days ($150.5 \pm 3.9^{***}$). The Lifting was decreased in Control groups (38 ± 2.4) when compared with naïve group ($50 \pm 3.0^{**}$) and once more Fruticulin A ($56 \pm 2.63^{***}$) reversed the clonidine induced change in behavior. Clonidine has increased (control: 22.8 ± 3.0) anxiety disorder (characterized by increased cleaning time --- Grooming) when compared to Naive ($10.8 \pm 2.95^*$) and Fruticulin A ($12.83 \pm 1.1^*$) reduced the grooming behavior. The occurrence of depressive behavior (characterized by the time of permanence in the state of freezing) was verified in control groups (21.2 ± 10.82) when compared to naïve group (0.2 ± 0.2) and Fruticulin A significantly reversed the clonidine induced freezing (1.5 ± 0.84). **Discussion and Conclusion:** Open field is a scientific apparatus used to measure the exploratory activity and emotional behavior in rodents (3). Thus, locomotion and the number of lifting are related to exploratory activity of animals during the tests and Fruticulin A reversed the decrease induced by clonidine. These data suggest a potential antidepressant effect of Fruticulin A with a mechanism related to reduction of catecholamines induced by clonidine. Regarding the emotionality of animals, our results show that animals treated with Fruticulin A prevented the clonidine increase anxiety (grooming) and depressive (freezing) like behavior. Treatment with Fruticulin A reverses these actions suggesting in this way an activity in the central nervous system.

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References

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