

عنوان مقاله:

Interaction Between L-Type Calcium Channels and Antagonist of Cannabinoid System on Anxiety in Male Rat

محل انتشار:

فصلنامه فیزیولوژی عصبی روانشناسی، دوره 1، شماره 2 (سال: 1393)

تعداد صفحات اصل مقاله: 7

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خلاصه مقاله:

Background: The elevated plus-maze (EPM) has been broadly used to investigate anxiolytic and anxiogenic compounds. There is little information about the effect of interaction between calcium channels and cannabinoid system on the phenomenon of anxiety. Objectives: This study aimed to examine the effects of acute and chronic coadministration of AM₂₅₁, as cannabinoid CB₁ receptor antagonist, and Verapamil, as L-type Ca²⁺ channels blocker, on EPM test in rats. Materials and Methods: The data were obtained from male Wistar rat, weighing 220 to 260 g. Animals were allocated to five groups: Control, Verapamil, AM₂₅₁, acute Verapamil + AM₂₅₁, and chronic (injection for 7 days) Verapamil + AM₂₅₁ groups. The percentage of entries into the open arms of the EPM, the time spent in the open arms, and the number of entries into the closed arms during ten minutes was recorded. Results: Intraperitoneally (IP) injection of AM₂₅₁ before EPM trial decreased open arms exploration and open arm entry. On the other hand, Verapamil increased open arms exploration and open arm entry. Combined injection of Verapamil and AM₂₅₁ had conflicting effects on the responses of each of these two compounds alone. AM₂₅₁ and Verapamil had no effects on the number of closed arm entries. Conclusions: IP injection of CB₁ receptor antagonist might have an anxiogenic profile in rat, whereas calcium channel blocker attenuated the anxiogenic effect of AM₂₅₁. Our results suggest that there is an interaction between functions of L-type Ca²⁺ channels and cannabinoid system in anxiety.

کلمات کلیدی:

Verapamil, L-Type Calcium Channels, AM₂₅₁, Rat, Anxiety

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