Involvement of adenosine receptors in dizocilpine-induced motor activity in mice

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Abstract:
The effect of adenosine receptor ligands on dizocilpine-induced locomotion was studied in mice. Dizocilpine-induced hyperactivity (0.1 mg/kg ip) in mice was antagonized by all adenosine receptor agonists: CPA – A1 receptor agonist, CGS 21680 – A2 receptor agonist, and NECA – A1/A2 agonist, but the effect of NECA was the most apparent. Locomotion induced by the threshold dose of dizocilpine (0.05 mg/kg ip) was enhanced by DMPX (A2A adenosine receptor antagonist) and by theophylline (A1 and A2 receptor antagonist), but not by A1 receptor antagonist – CPT. These data suggest that adenosinergic system is involved in the mechanism of dizocilpine-induced hyperactivity, and it seems that A2A adenosine receptor plays a more important role.

Key words:
adenosine, dizocilpine, locomotor activity, mice