

EFFECTS OF ADENOSINE RECEPTOR AGONISTS AND ANTAGONISTS IN AMPHETAMINE-INDUCED CONDITIONED PLACE PREFERENCE TEST IN RATS

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Effects of adenosine receptor agonists and antagonists in amphetamine-induced conditioned place preference test in rats. E. POLESZAK, D. MALEC. Pol. J. Pharmacol., 2003, 55, 319–326.

The influence of adenosine receptor agonists and antagonists on amphetamine-induced conditioned place preference (CPP) was examined in male Wistar rats. Selective adenosine A1 receptor agonist, CPA, significantly reduced the acquisition of CPP induced by amphetamine. NECA (A2/A1 adenosine receptor agonist) produced similar effect, but selective A2 adenosine receptor agonist CGS 21680, attenuated acquisition of amphetamine-induced CPP only at the lower dose used. The blockade of adenosine receptors by CPT, DMPX and caffeine, did not influence the expression and acquisition of amphetamine-induced CPP. With regard to the expression of amphetamine-induced CPP, only A2A adenosine agonist (CGS 21680) slightly decreased the action of amphetamine. Other adenosine agonists were without effect. Our results indicate that activation of A1 receptor decreases the acquisition of CPP induced by amphetamine. It suggests that adenosine A1 receptor is involved in rewarding effects of amphetamine. Therefore, it seems that selective adenosine A1 receptor agonists may have some attenuating influence on the development of amphetamine dependence.

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