

CALCIUM CHANNEL ANTAGONISTS SUPPRESS NICOTINE-INDUCED PLACE PREFERENCE AND LOCOMOTOR SENSITIZATION IN RODENTS

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Calcium channel antagonists suppress nicotine-induced place preference and locomotor sensitization in rodents. G. BIAŁA. Pol. J. Pharmacol., 2003, 55, 327–335.

The influence of calcium channel antagonists on the behavioral sensitization to nicotine-induced hyperlocomotion and place preference was investigated. Locomotor sensitization in mice was produced by injecting nicotine (0.5 mg/kg, *ip*) for 5 consecutive days before placement in an apparatus in which locomotor activity was evaluated for 1 h. One week later, activity of mice was recorded after challenge with the same dose of nicotine. The L-type voltage-dependent calcium channel antagonists: nimodipine (5, 10 and 20 mg/kg, *ip*), verapamil (5, 10 and 20 mg/kg, *ip*) and diltiazem (5, 10 and 20 mg/kg, *ip*) were injected 15 min before each injection of nicotine (induction of sensitization) or acutely 15 min before a challenge nicotine injection (expression of sensitization). It was shown that the calcium channel blockers attenuated both the induction and expression of nicotine-induced locomotor sensitization in a dose-dependent manner. In the place preference paradigm, nicotine produced a place preference to the initially less-preferred compartment paired with its injections during conditioning (0.5 mg/kg, *ip*, 4 drug sessions). Pretreatment with nimodipine (10 mg/kg, *ip*), verapamil (10 mg/kg, *ip*) and diltiazem (10 mg/kg, *ip*) blocked nicotine-induced place conditioning.

These results suggest the common calcium-dependent mechanisms of nicotine-induced behavioral sensitization and place preference.

Key words: *nicotine, place conditioning, sensitization, nimodipine, verapamil, diltiazem, rodents*
