UFR2709, a nicotinic acetylcholine receptor antagonist, decreases ethanol intake in alcohol-preferring rats

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Brain nicotinic acetylcholine receptors (nAChRs), a heterogeneous family of pentameric acetylcholine-gated cation channels, have been suggested as molecular targets for the treatment of alcohol abuse and dependence. Here, we examined the effect of the competitive nAChR antagonist UFR2709 on the alcohol consumption of high-alcoholdrinking UChB rats. UChB rats were given free access to ethanol for 24-h periods in a two-bottle free choice paradigm and their ethanol and water intake were measured. The animals were i.p. injected daily for 17 days with a 10, 5, 2.5, or 1 mg/kg dose of UFR2709. Potential confounding motor effects of UFR2709 were assessed by examining the locomotor activity of animals administered the highest dose of UR2709 tested (10 mg/kg i.p.). UFR2709 reduced ethanol consumption and ethanol preference and increased water consumption in a dose-dependent manner. The most effective dose of UFR2709 was 2.5 mg/kg, which induced a 56% reduction in alcohol consumption. Administration of UFR2709 did not affect the weight or locomotor activity of the rats, suggesting that its effects on alcohol consumption and preference were mediated by specific nAChRs.

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Alcohol dependence

Ethanol

nAChR antagonism

UChB rats

Voluntary ethanol drinking

alcohol

buffer

nicotinic receptor

nicotinic receptor blocking agent

octanol

ufr 2709

unclassified drug

alcohol consumption

alcoholism

animal experiment

animal model

Article

body weight

controlled study

dose response

drug dose comparison

drug effect

fluid intake

locomotion

male

motor effect

motor performance

nonhuman

rat