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Ethanol Self-Administration is Markedly Reduced in Ethanol Preferring (P) rats treated with the CB1 antagonist SR 141716.

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Cannabinoids are postulated to play a role in modulating the reinforcing effects of abused drugs including alcohol. This study examined alcohol self-administration in ethanol preferring (P) and non-preferring (NP) rats in a limited access (4h/day) two-bottle choice paradigm (10 % (v/v) ethanol versus water). After baseline drinking rats were treated (ip) with the vehicle until a criteria of daily stable drinking was achieved before the animals were treated with the CB1 antagonist SR 141716A (7.5 mg/kg). Following this, vehicle was administered again until a baseline criterion was achieved. Data analysis consisted of % ethanol preference, ethanol intake (g/kg), mean number of lick responses to each bottle, and lick responses/volume consumed ratio.

Results indicated that the P rats displayed significantly greater ethanol consumption compared to the NP rats as expected. Treatment with SR 141716 significantly attenuated ethanol preference and intake in both groups of rats, although the magnitude of the effect was greater in the P rats. These data demonstrate that the cannabinoid CB1 receptor is an essential component of the molecular pathway determining alcohol consumption and was consistent with previous work in our lab with CB1 mice (Thanos et al. 2005).

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