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Anesthetic ketamine impairs rats' retrograde memory. Reversal of its behavioural effects by the nitric oxide synthase inhibitor L-NAME

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SUMMARY

There is poor experimental evidence concerning the effects of anesthetic doses of the non-competitive NMDA receptor antagonist ketamine on rodents' memory abilities. The present study was designed to investigate a) the consequences of post-training administration of anesthetic ketamine on rats' recognition memory and b) to evaluate whether or not the nitric oxide synthase inhibitor L-NAME (1, 3, 10 mg/kg, i.p.) was able to counteract the expected behavioural deficits produced by anesthetic ketamine. For this pur-

pose, the novel object recognition task was selected. Post-training administration of ketamine (100 mg/kg; i.p.) disrupted animals' performance in the novel object recognition paradigm indicating that anesthetic ketamine impaired recognition memory. L-NAME (1-3, but not 10 mg/kg) antagonized this deficit on cognition produced by anesthetic ketamine. The current results indicate that anesthetic ketamine impaired rats' retrograde memory and that an NO component modulates these effects.