

## ROLE OF NITRIC OXIDE IN ANTICONVULSANT EFFECTS OF BENZODIAZEPINES IN MICE

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The influence of nitric oxide (NO) on anticonvulsant activity of diazepam and clonazepam was examined in the pentetrazole- and electroshock-induced seizure models in mice. Protective efficacy of the threshold dose of diazepam against pentetrazole-induced clonic and tonic seizures, and death was significantly increased by N<sup>G</sup>-nitro-L-arginine methyl ester hydrochloride (L-NAME) while 7-nitroindazole (7-NI) was slightly less effective. The above intensifying effect of L-NAME on antiepileptic activity of diazepam was reversed by L-arginine, a substrate for NO formation, but not by D-arginine. Methylene blue, the guanylate cyclase inhibitor, increased the protective efficacy of diazepam and clonazepam in the pentetrazole-induced seizures. 7-NI was able to potentiate the protective efficacy of diazepam and clonazepam in electroshock-induced tonic hindlimb extension. These findings suggest that the cGMP/NO system may participate in antiepileptic effects of benzodiazepines.

**Key words:** *nitric oxide, benzodiazepines, seizures, mice*

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