



## Nefopam enhances the protective activity of antiepileptics against maximal electroshock-induced convulsions in mice

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### Abstract:

Nefopam is a centrally acting non-opioid analgesic with a mechanism of action that is not completely understood. Adverse effects associated with the therapeutic use and overdose of nefopam are mainly associated with the central nervous system, such as hallucinations, cerebral edema and convulsions. The aim of this study was to assess the effect of nefopam on the electrical threshold and its influence on the protective activity of antiepileptic drugs in the maximal electroshock test in mice. A 5 mg/kg dose of nefopam significantly elevated the electric seizure threshold, while a dose of 1 mg/kg failed to protect mice against electroconvulsion. At a sub-threshold dose of 1 mg/kg, nefopam significantly enhanced the anticonvulsant activity of valproate against electroconvulsions. The protective activity of phenobarbital and phenytoin was significantly enhanced by co-administration of nefopam at the 5 mg/kg dose, but this same dose of nefopam failed to affect the protective activity of carbamazepine. In conclusion, nefopam exerts an anticonvulsive effect when given alone and significantly enhances the protective activity of certain antiepileptic agents against electroconvulsions induced in mice.

### Key words:

nefopam, antiepileptic drugs, maximal electroshock, seizures

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