



## **Cannabidiol--antiepileptic drug comparisons and interactions in experimentally induced seizures in rats.**

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J Pharmacol Exp Ther. 1977 Apr;201(1):26-32.

### **Abstract**

A comparison of the anticonvulsant and neurotoxic effects of cannabidiol (CBD), delta 9tetrahydrocannabinol, cannabinal and antiepileptic drugs (phenytoin, phenobarbital, carbamazepine, chlordiazepoxide, clonazepam, ethosuximide and trimethadione) was made in rats. Median effective potencies (ED 50 values) for maximal electroshock, audiogenic seizures and TD50 values for a rotor rod neurotoxicity test were calculated. Additionally, the interactive effects of CBD and the antiepileptic drugs against maximal electroshock and audiogenic seizures were studied. Each drug was given orally at peak effect time. CBD was an effective and relatively potent anticonvulsant in both maximal electroshock and audiogenic seizure tests. The anticonvulsant potency of phenytoin was significantly increased when combined with phenobarbital, CBD and phenobarbital plus CBD. Additionally, CBD reliably reduced the anticonvulsant potencies of chlordiazepoxide, clonazepam, trimethadione and ethosuximide. These data indicate that CBD is an effective anticonvulsant with a specificity more comparable to drugs clinically effective in major than minor seizures. Furthermore, it appears that CBD enhances the anticonvulsant effects of the former and reduces the effects of the latter types of antiepileptic drugs.

PMID 850145 [PubMed - indexed for MEDLINE]

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