

## Therapeutic Effect of Diisopropyldithiocarbamate Sodium Salt Against Diclofenac Induced Testicular Damage in Male Wistar Rats

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**Abstract :** Dithiocarbamates are very useful biological agents with antioxidant properties. Diclofenac (DIC) is a non-steroidal analgesic, anti-inflammatory, and antipyretic agent. The use of diclofenac has been linked with reproductive toxicity/damage. The purpose of this study is (i) To investigate the therapeutic potential of diisopropyldithiocarbamate sodium salt (Na(i-Pr<sub>2</sub>dtc)) and vitamin E (VIT E) against diclofenac induced toxicity in the testes of male Wistar rats. (ii) To investigate the effect of (Na(i-Pr<sub>2</sub>dtc)) and vitamin E on ameliorating damage done to the testes through histological analysis of the testes. Thirty-six (36) male Wistar rats were used for the experiment, they were divided into six (6) groups, the animals in group 1 served as control, animals in groups 2, 3, 4, 5 and 6 received DIC only, DIC and (Na(i-Pr<sub>2</sub>dtc)), DIC and VIT E, (Na(i-Pr<sub>2</sub>dtc)) only and VIT E only respectively. A single dose of 100 mg/kg body weight of DIC was administered to male Wistar rats, while 30 mg/kg body weight of (Na(i-Pr<sub>2</sub>dtc)) was used to treat both normal and DIC treated animals, control animals were treated with the vehicle, after 24 hrs of treatment the animals were euthanized and the testes were removed for analysis. The treatment of rats with Na(i-Pr<sub>2</sub>dtc) significantly restored catalase (CAT) activity depressed by diclofenac. (Na(i-Pr<sub>2</sub>dtc)) also restored glutathione levels reduced by DIC treatment and this was also accompanied by reduced lipid peroxidation (LPO) level. VIT E significantly restored superoxide dismutase (SOD) activity when compared with DIC only treated animals. Photomicrographs of testes from (Na(i-Pr<sub>2</sub>dtc)) treated rats showed seminiferous epithelium with no lesions. We conclude that (Na(i-Pr<sub>2</sub>dtc)) has an antioxidant effect, which might be related to the dose and duration of administration.

**Keywords :** diisopropyldithiocarbamate sodium salt, diclofenac, vitamin E, testes

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