

EFFECTS OF DIPHENYL DITELLURIDE ON THE PHOSPHORYLATION OF CYTOSKELETAL PROTEINS AND Na^+K^+ -ATPASE ACTIVITY IN RAT CEREBRAL CORTEX

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Tellurium is a rare element used as an industrial component of many alloys and in the electronic industry. This element is also one important intermediate and/or reagent in organic synthesis. Inorganic and organic tellurium compounds are highly toxic to the CNS of rodents. In this work we investigated the effect of a single subcutaneous injection of diphenyl ditelluride $(\text{PheTe})_2$ in 15 day-old Wistar rats (0.3 $\mu\text{mol/kg}$ body weight) on the phosphorylation of intermediate filament proteins and in Na^+K^+ -ATPase activity in cerebral cortex, 3 and 6 days after injection. Results showed that animals injected with $(\text{PheTe})_2$ presented hyperphosphorylation of neurofilaments, the neuronal IF, and astrocyte IFs, glial fibrillary acidic protein (GFAP) and vimentin (Vim) 3 and 6 days after injection. We also showed that beyond the effects of the *in vivo* treatment with $(\text{PheTe})_2$ on the cytoskeleton of cortical cells, this neurotoxin inhibited Na^+K^+ -ATPase activity at day 6 after drug injection. Therefore, we can suppose that the observed alterations in cytoskeleton and the inhibition of the activity Na^+K^+ -ATPase in cortical cells may be related with the neurotoxicity of this substance. Financial support: CNPq, FAPERGS, PROPESQ-UFRGS.

KEYWORDS: Organotellurium, intermediate filaments, protein phosphorylation, Na^+K^+ -ATPase, diphenyl ditelluride