

## **The effects of oxygen radical scavengers on the methylmercury-induced neurotoxicity in cultured rat dorsal root ganglionic cells**

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Mercury poisoning produces various severe outbreaks of neurological diseases. Recent study has been reported that methylmercury produces free radical by cleavage and these free radicals induce to initiates the lipid peroxidation chain reaction which bring about neuronal cell death. But the neurotoxic mechanism of methylmercury is left much unknown.

In order to investigate the toxic effect of methylmercury, cultured rat dorsal root ganglionic cells were treated with several concentrations of methylmercury chloride and the cytotoxic effect was evaluated by using MTT assay. To examine the protective effect of various radical scavengers against on the neurotoxicity induced by methylmercury, these cultures were exposed to methylmercury after preincubation of oxygen radical scavengers for 2 hours and MTT and neurofilament enzyme immunoassay(EIA) were adopted for the screening of protective effect.

In this study, methylmercury chloride induced significant cell death in time-dependently on cultured rat dorsal root ganglionic cells. Catalase allopurinol and vitamin E blocked the methylmercury-induced neurotoxicity, while ascorbic acid, sodium thiosulfate did not show protective effect in blocking the neurotoxicity induced by methylmercury.

These results suggest that oxygen radicals are involved in the neurotoxicity induced by methylmercury on culture of rat dorsal root ganglionic cells.