

Preventive Effects of Silymarin in Retinal Intoxication with Methanol in Rat: Transmission Electron Microscope Study

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Abstract : The aim of this study was to investigate the ultra-structure of the photoreceptor layer of male rats under the effect of methanol intoxication and protective effect of silymarin against the methanol toxicity. Fifteen adult male rats were divided into three groups: Control group, Experimental group I (received 4g/kg methanol by intraperitoneal injection for five days), Experimental group II (received 4 g/kg methanol by intraperitoneal injection for five days and received 250 mg/kg silymarin orally for three months). At the end of the experiment, the eyes were removed; retina was separated near the optic disc and studied by transmission electron microscope. Results showed that the retina in the experimental group I exhibited loss of outer segments and disorganization in inner segment. Increased extra cellular space, disappearance of outer limiting membrane and pyknotic nuclei were seen in this group. But normal outer segment, organized inner segment and normal outer limiting membrane were obvious after treatment with silymarin in experimental group II. These findings show that methanol causes damage in the photoreceptor layer of the rat retina and silymarin can protect the damage to retina against the methanol intoxication.

Keywords : ultra-structure, photoreceptor layer, methanol intoxication, silymarin, rat

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