عنوان مقاله:

The cytoprotective effects of Allium cepa methanolic extract in freshly isolated hepatocytes

محل انتشار:

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خلاصه مقاله:

Acetaminophen (acetyl-para-amino phenol; APAP)-induced hepatotoxicity is the most common form of drug-induced liver injury (DILI) worldwide. APAP is also used as a model drug to assess hepatoprotective strategies against DILI. In the current study, the potential cytoprotective effects of Allium cepa (Onion) extract (OE) was investigated in APAP-treated hepatocytes. Isolated hepatocytes were prepared with the collagenase perfusion of rat liver. Isolated hepatocytes (10 mL, 106 cells/mL) were incubated in the Krebs Henseleit buffer (pH = 7.4) in continuously rotating 50 mL round bottom flasks, under an atmosphere of carbogen (95% O2 and 5% CO2) in a 37 °C water bath. Cytotoxicity, ROS formation, and mitochondrial membrane potential collapse were assessed as oxidative stress markers. APAP administration to rat hepatocytes (500 µM) was accompanied by cytotoxicity, ROS formation, depletion of cellular glutathione (GSH) reservoirs, and mitochondrial depolarization. It was found that OE administration (100 µL) significantly reduced cell death, ROS formation, and its consequences, such as the decrease in cellular GSH and mitochondrial injury induced by APAP. These results indicate that the crude extract of Allium cepa exhibits hepatoprotective action, probably through antioxidative properties and protecting vital cellular organelles such as .mitochondria

کلمات کلیدی:

Allium cepa, Cytotoxicity, hepatocytes, Mitochondrial membrane potential, Onion extract