ABSTRACT

Effect of Extracts of Black Cumin (Nigella sativa) against Inducible Nitric Oxide Synthase Expression (iNOS), Blood Levels of SGOT and SGPT on Carbon Tetrachloride-induced Liver Rat (Rattus norvegicus)

Ira Humairah

Inflammation of the liver is the beginning of a process that will lead to changes in tissue fibrosis, leading to cirrhosis of the liver. The explosion of cell respiration process during the inflammatory phase causes the formation and release of free radicals, including the production of reactive oxygen species (ROS) and reactive nitrogen species (RNS). Several studies using carbon tetrachloride were injected intraperitoneal in liver rats to stimulate the inflammatory process in the liver that will cause oxidative stress and increased production of RNS and ROS. Inflammatory process is analogous to the process of inflammation due to a viral infection of the liver cells. Nitric oxide is produced in large amounts by the inducible nitric oxide synthase (iNOS), which arise due to the inflammatory process. The aim of this study was to evaluate antioxidant activity of Nigella sativa extract towards CCl4-induced liver Rattus norvegicus. Ko was treated with Na-CMC 0,5% and vegetable oil, K1; with CCl4-induced liver without black cumin extract, K2; with CCl4-induced liver without black cumin extract dose 0,6 mg/KgBB, K3; with CCl4-induced liver without black cumin extract dose 1,2 mg/KgBB, and K4 with CCl4-induced liver without black cumin extract dose 2,4 mg/KgBB. In conclusion, black cumin extract has antioxidant effects on the CCl4-induced liver Rattus norvegicus by decrease the expression of iNOS.

Keywords: Nigella sativa, CCl4-induced liver, iNOS, inflammation, antioxidant.