

Abstract

Effects of Curcumin on Lipid Peroxidation and Antioxidant Enzymes in Kidney, Liver, Brain and Testis of Mice Bearing Ehrlich Solid Tumor [†]

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Abstract: Cancer is the second most common cause of death in the world. Several natural products have been studied for anticancer activity and for prevention or repair of oxidative injury. Curcumin is one of the natural products of high medicinal interest. This study was performed to investigate effects of curcumin on lipid peroxidation and antioxidant enzymes in tissues of mice bearing Ehrlich solid tumor. Forty mice were distributed to four groups as healthy control and treatments that received 1×10^6 Ehrlich ascites tumor (EAT) cells and EAT cells plus 25 mg/kg/day or 50 mg/kg/day curcumin subcutaneously. The liver, kidney, brain and testis tissues were collected for the malondialdehyde, superoxide dismutase and catalase analyses. Tumor development increased MDA levels in liver ($p = 0.001$), kidney ($p < 0.001$) and testis ($p < 0.01$) and curcumin reduced liver MDA levels. Liver and kidney SOD activities were increased by both levels of curcumin ($p = 0.001$) but 50 mg/kg/day curcumin increased brain SOD activity ($p < 0.001$). The kidney CAT activity was increased by 50 mg/kg/day curcumin ($p < 0.001$). This study showed that curcumin suppresses tumor progression, and alleviates the lipid peroxidation and improves antioxidant status in the tissues of solid tumor-bearing mice.

Keywords: Curcumin; Ehrlich solid tumor; lipid peroxidation; antioxidant enzymes



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