L-CYSTEINE GERMANATE – A NOVEL HEPATOPROTECTOR AND IMMUNOMODULATOR FOR INDUCED HEPATOCARCINOMA IN RATS

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Abstract: L-cysteine is becoming a useful antioxidant-detoxifier-protector with the increasing pollution and toxicity of this industrial age. Synthetic organic germanium enhances the body's immune system, stimulates the production of interferon, and promotes antitumor activity. In the present study, we investigated the efficacy of a novel L-cysteine germanate CysGe = OCys on the prevention of chemically induced hepato cellular carcinoma (HCC) in eleven albino Western rats against diethyl nitrosamine (DEN) and carbon tetrachloride (CCl₄). Serum biological analysis of malonodialdehyde (MDA), reduced glutathione, glutathione peroxidase, glutathione – S – transferase and glutathione reductase were estimated. Microscopic examination of livers confirmed the induction of HCC and the protective effect of CysGe = OCys. Pretreatment with this germanium compound significantly prevented the formation of MDA, depletion of glutathione and alteration of antioxidant enzyme activities in the liver of DEN+ CCl₄ intoxicated rats. This study also revealed that pretreatment with CysGe=OCys increased IFN-γ to 177% compared to the control group.

Key words: Cysteine, germanium, hepatoprotector, immunomodulator, hepatocarcinoma.

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