

Effect of Cu/Zn-Superoxide Dismutase from the Fungal Strain *Humicola lutea* 103 on Antioxidant Defense of Graffi Tumor-Bearing Hamsters

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A novel Cu/Zn-containing superoxide dismutase (SOD) was isolated from the fungal strain *Humicola lutea* 103. Previously, a protective effect of this enzyme (HLSOD) against tumor growth and also superoxide production in Graffi tumor-bearing hamsters (TBH) were established.

The aim of the present study was to investigate the effect of HLSOD on the activity of endogenous SOD and catalase in the cells from TBH during tumor progression. Our results point out that transplantation of Graffi tumor causes a significant decrease in SOD activity in the cells from liver of the hosts (from 35 to 59% compared to the control). In the tumor cells relatively low levels of SOD (about 7 U mg protein⁻¹) were found, and Cu/ZnSOD was the main isoenzyme in total SOD activity. Tumor growth resulted in a reduction of catalase activity, which correlated with the process of tumor progression. A single dose (65 U) treatment with HLSOD caused an increase in endogenous SOD and catalase activity in healthy animals and resulted in restoration of the antioxidant ability in liver cells of the hosts at the early stage of tumor progression. The results show the possible participation of HLSOD in the host oxidant-antioxidant balance, which is probably one of the factors of its immunoprotective action established earlier.