

Immunoprotective Effect of Cu/Zn Superoxide Dismutase on Myeloid Graffi Tumor-Bearing Hamsters

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Z. Naturforsch. **55c**, 649–656 (2000); received November 23, 1999/February 10, 2000

Superoxide Dismutase, *Humicola lutea*, Tumors, Immunotherapy

Investigation on the immunoprotective activity of Cu/Zn superoxide dismutase from *Humicola lutea* 103 AL (HLSOD) in hamsters with transplanted myeloid tumor was performed. Survivability, tumor growth and tumor transplantability were followed. The immune status of tumor-bearing animals, injected with the optimal protective HLSOD dose, was examined during 27 days after tumor transplantation by the following parameters: (i) the number, migration and phagocytic activity of peritoneal macrophages, (ii) the phagocytic activity of blood polymorphonuclear leukocytes (PMNs), (iii) the responsibility *in vitro* of spleen lymphocytes to T and B cell mitogens.

It was established that intraperitoneal inoculation of HLSOD produced a protective effect on the development of tumors. Elongation of the latent time for tumor appearance and inhibition of the tumor growth were observed. The decreased percentage of mortality in early stage of tumor progression was established. Immunological studies on tumor-bearing hamsters (TBH) induced a temporary immunorestoring effect on the suppressed phagocytic activities of peritoneal macrophages and blood PMNs during the first 14 days of tumor development. Moreover, HLSOD showed an expressed stimulating effect on proliferative activity *in vitro* of spleen B lymphocytes from healthy and TBH as well. The immunorestoring and protective effect of the enzyme was probably due to improve of the oxidant-antioxidant balance in peritoneal phagocytes. The temporary character of the effect can be explained with the interference of immunosuppressing factors produced by tumor tissue as well as by the presence of tumor antigens, tumor cells and antigen-antibody complexes in the circulation.