

Superoxide Production by Phagocytes in Myeloid Graffi Tumor-Bearing Hamsters

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Z. Naturforsch. **55c**, 799–805 (2000); received April 19/May 19, 2000

Superoxide Dismutase, Macrophages, Tumors

A progressive suppression of the phagocytic ability of peritoneal macrophages and polymorphonuclears (PMNs) in hamsters with transplanted myeloid tumors was previously established. The i.p. application of Cu/Zn SOD, isolated from the fungal strain *Humicola lutea* (HLSOD) (2 injections before and 5 injections after tumor transplantation) induced the mean survival time of the animals as well as a temporally stimulating action on the macrophage and PMNs phagocytosing indices. In the present work, the superoxide production of peritoneal macrophages and PMNs during 30 days of tumor progression was followed. Effects of the application of HLSOD in an optimal protective dose on the superoxide production in peritoneal macrophages and blood PMNs were examined. The spontaneous and phorbol-myristate acetate (PMA)-inducible O_2^- production in both types of phagocytes was 4–5-fold increased in tumor-bearing hamsters (TBH), as compared to the controls, at day 14 after tumor transplantation (the day of tumor appearance in transplanted animals). Furthermore, O_2^- production was also similar to the control values for the following days of observation. HLSOD treatment of TBH induced a normalization of superoxide production in macrophages and PMNs. Therefore, the established decrease of superoxide anions in phagocytosing cells of TBH indicates possible effects of HLSOD on the host antioxidant defense.