



Effect of Ascorbic Acid, Lysine, Proline and Green Tea Extract on Human Osteosarcoma Cell Line MNNG-HOS Xenografts in Nude Mice

M.W. Roomi, V. Ivanov, T. Kalinovsky, A. Niedzwiecki, M. Rath
Medical Oncology 2006, 23(3): 411-417

In this study, we evaluated the effects of a specific micronutrient mixture on growth and tumors induced by osteosarcoma cells in mice. One group of mice was given a normal diet, while the other received the diet fortified with a specific combination of micronutrients. We observed that the osteosarcoma tumors developed in the micronutrient-supplemented group of mice were smaller by 53% and less vascular than the tumors in control group. On further analysis of the tumors, it was seen that the cancer cells in the micronutrient-supplemented group showed decreased cell division, decreased secretion of MMP enzymes and decreased vascular endothelial growth factor (VEGF), reducing the aggressiveness of the cancer.

In another study, we also proved that the extra cellular collagen meshwork that acts as a critical barrier to prevent cancer metastasis was significantly stronger with this micronutrient supplementation. The stronger and stable extra cellular matrix also prevented the adhesion of osteosarcoma cells and their invading capacity thereby further reducing their potential of metastasis.