



In Vivo Antitumor Effect of Ascorbic Acid, Lysine, Proline, and Green Tea Extract on Human Prostate Cancer PC-3 Xenografts in Nude Mice: Evaluation of Tumor Growth and Immunohistochemistry

M.W.Roomi, V.Ivanov, T.Kalinovsky, A.Niedzwiecki, M.Rath

In Vivo 2005, 19(1): 179-184.

This in vivo study tested the effects of micronutrient synergy in developing prostate cancer in immuno-compromised 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 prostate tumors developed in the group receiving the micronutrient supplemented diet were much smaller (reduction in weight was 47%) compared to those developed in the control group. This statistically significant decrease in the tumor mass was accompanied by fewer blood vessels in those tumors and thereby restricted tumor nourishment. Prostate cancer cells in the tumors from micronutrient supplemented animals also divided less aggressively (indicated by low Ki index) than tumors in animals on the control diet. In addition, the examination of the tumors also demonstrated a significant reduction in secretion of enzymes associated with cancer metastasis such as MMPs.

In another study of prostate cancer cells, we have also proven that the metastasis promoting collagen-digesting enzymes, MMP-9 and uPA, were inhibited by 100% in the micronutrient supplemented group, and at the same time, the secretion of natural inhibitors of these enzymes was increased in the presence of the synergistic micronutrient combination.