Title of the project: Antiproliferative effects of zinc in colon cancer cell lines

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Co-investigators: E. Rudolf

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Summary of 2008 results

Title of the presentation: Antiproliferative effects of zinc in colon cancer cell lines

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Zinc is a bioelement involved in many aspects of cellular physiology. Pertubations in zinc metabolism due to changes in its external or internal concentrations may seriously affect cellular growth, proliferation and signaling, ultimately leading to cell cycle arrest and cell death. Colon cancer is among the leading types of cancers in western populations, and in particular in the Czech Republic. Several studies have shown the involvement of zinc in colorectal carcinogenesis. Thus the aim of this study was to investigate a potential chemopreventive role of externally supplemented zinc on growth and proliferation of colon cancer cell lines representing different stages of this malignancy: HCT-116, HT-29 and SW620. The results suggest that that there are differences in sensitivity of colon cancer cells to zinc and that zinc inhibits cell growth and proliferation possibly via several specific and nonspecific mechanisms including cytoskeleton and cell cycle checkpoints.

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