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Altered deoxyribonuclease activity in cancer cells and its role in non toxic adjuvant cancer therapy with mixed vitamins C and K3.

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Source

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Abstract

The alterations of deoxyribonuclease DNase activity in cancer cells were the basis of the utilization of mixed vitamins C and K3 in a nontoxic, adjuvant cancer therapy. In order to localize exactly the altered activities of DNase in cancer cells, histochemical methods were utilized. The deficiency of alkaline and acid DNase activity appeared to be characteristic for non-necrotic cells of malignant human and animal tumors. This enzymatic deficiency appeared in experimental carcinogenesis before the phenotypic signs of malignancy. Tumor promoters directly reduced the activity of both DNases. The incidence of spontaneous malignant human and animal tumors appeared to be inversely proportional to the intensity of the activity of both DNases in normal cells and tissues from which these tumors were derived. The fact that alkaline and acid DNase activity was reactivated during the spontaneous and therapeutically induced necrosis of cancer cells suggests that this enzymatic deficiency of DNase activity in cancer cells was due to the action of specific inhibitors of DNases. Characteristic variations of serum alkaline DNase activity in positive responders to therapy, examined in more than 800 cancer-bearing patients, may be the basis for the development of a useful test for therapeutic prognosis and for monitoring of cancer bearing patients. Acid DNase was selectively reactivated in malignant tumor cells by vitamin C (sodium ascorbate), whereas alkaline DNase was reactivated by vitamin K3. Joint vitamin C and K3 administration produced in vitro and in vivo tumor growth inhibition, potentiation and sensitization of chemo- and/or radiotherapy and a decrease in the number of metastases in animals with experimental tumors. Joint vitamin C and K3 administration may be considered as a possible new, non-toxic, adjuvant cancer therapy, which can be easily introduced into the classic protocols of clinical cancer therapy without any supplementary risk for patients.

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