

BAT

THE INFLUENCE OF CYTOLYSIN FROM THE SEA ANEMONE CONDYLACTIS AURANTIACA ON NORMAL AND MALIGNANT MAMMALIAN CELL LINESU. Batista and B. Sedmak¹Institute of Biophysics, Medical Faculty and ¹Institute of Biology, E. Kardelj University of Ljubljana, Ljubljana, Yugoslavia.

The cytolsin of the sea anemone Condylactis aurantiaca has been isolated from homogenates by column chromatography on Sephadex G-75 and by ion exchange chromatography on DEAE Sephadex A-50. The cytolsin showed an antitumour effect in mice bearing Ehrlich ascites tumour (EAT) *in vivo*. Therefore, the influence of cytolsin on V-79 cells (lung fibroblasts of Chinese hamster), BHK 21/T-19 cells (chemically transformed baby hamster kidney cells) and EAT cells was studied using the dye exclusion test for cell viability. It was found that cytolsin, which exhibited strong direct haemolytic activity, also exerted cytotoxic effects on mammalian cell lines. The BHK 21/T-19 cells were the most sensitive, while V-79 cells were found to be slightly more sensitive than EAT cells. The influence of cytolsin on V-79 cells was tested on colony forming ability (chronic and acute exposure of cytolsin). The cytolsin was also cytotoxic when foetal calf serum (FCS) was present in chronic exposure to cytolsin in spite of the high quantity of sphingomyelin in FCS. Sphingomyelin is a specific inhibitor of cytolsin haemolytic activity.

BAX

ENZYME-HISTOCHEMICAL QUANTITATION OF RAT PANCREAS FOCI INDUCED BY AZASERINE - THE ROLE OF LIFE-STYLE FACTORS

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The formation of foci of altered cells in rat pancreas has been studied quantitatively at various times after a single or repeated doses of azaserine; the influence of high fat, alcohol and coffee was investigated. To improve the early recognition of altered foci various enzyme-histochemical staining reactions were evaluated: the ATPase reaction (according to Wachstein and Meisel) resulted in the clear differentiation of two types of pancreas foci, showing increased (ATPase +) or decreased (ATPase -) cytoplasmic staining. These foci correspond to the acidophilic and basophilic foci as observed in HE stained sections. Focus transsections of even single altered cells can be recognized in the case of the ATPase + foci, while about 5 or more cells are needed for the detection of ATPase - foci. The number of foci per ccm pancreas was directly proportional to the dose of azaserine. High fat increased the size of the foci, both alone and in combination with other life-style factors.

BEM

THE METABOLISM OF MNNG AS MEASURED BY UDS BY HUMAN UROTHELIAL CELLS SHOWING VARIOUS GRADES OF TRANSFORMATION

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Unscheduled DNA synthesis (UDS) was studied by quantitative autoradiography in human urothelial cells showing various grades of transformation. Cells incubated in arginine-free medium supplemented with hydroxyurea are able to undertake UDS after administration of agents injurious to DNA, while the replicative synthesis of DNA is nearly totally suppressed. All the cell lines tested were able to produce UDS after treatment with the ultimate carcinogen 1-methyl-3-nitro-1-nitrosoguanidine (MNNG), but the magnitude of UDS in the most malignant cell lines was significantly lower than in the least malignant cell lines.
