All of them preserved the phenotypic characteristics of the original tumour (morphology, Ig patern) even after several passages. Drugs which are involved in clinical schedules were screened. The transplantable tumours were highly sensitive to cyclophosphamide and methotrexate, reflecting the results obtained in patients' treatment. Other agents including alpha-inteferon produced no or slight response.

2'-5' OLIGO(A) SYNTHETASE LEVELS AND PROTEIN KINASE IN INTERFERON-SENSITIVE OR -RESISTANT BREAST CANCER CELLS

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The levels of 2'-5'oligo(A) synthetase have been studied in three breast cancer cell lines. The activity of 2'-5' oligo(A) synthetase has been measured, both in control and interferon or interferon inducer-treated cells, by two different assays. The activity of this enzyme is increased 20-fold when T47D cells are treated with human interferon or with interferon inducers. In contrast, MCF-7 and BT-20 cells treated or not with interferon, exhibit low activity of 2'-5' oligo(A) synthetase.

The profiles of protein kinase are presently under further investigation.

MARKERS OF HUMAN MAMMARY GLAND DIFFERENTIATION AND THEIR EXPRESSION IN BREAST TUMOURS

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To relate the tumour phenotype to the framework of normal mammary gland differentiation, we compared phenotypic features of the human resting, pregnant, lactating and regressing breast epithelium with those of more thatn 200 benign and malignant breast lesions. Monoclonal antibodies to cytokeratins No. 19, 18, 8 and 7 to epithelial membrane antigens and secreted molecules were produced and employed in immunohistochemistry combined with 1-D and 2-D gel immunoblotting. The results revealed several distinct sub-populations in normal epithelium pertinent to differentiation stage. The phenotypes of benign lesions mainly resembled the resting or pregnant epithelium, whereas some features of late pregnancy and lactation were observed in carcinomas though lacking the co-ordinate expression seen in normal differentiation. The antibodies also proved to be useful in identification of micrometastases and for the differential diagnoses of some human malignancies.

NEOPLASTIC-GROWTH CHANGES IN NON-HISTONE CHROMATIN PROTEINS

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Two fractions of non-histone chromatin proteins (NHCP1 and NHCP2) isolated by a hydroxyapatite procedure were obtained from nuclei of Kirkman-Robbins hepatoma at the 4th, 7th and 9th day of its growth. Electrophoretic (one- and two-dimensional analyses followed by Coomassie Brilliant Blue and silver staining) and immunological (Western blots) techniques revealed some specific non-histone polypeptides (within MW ranges of 16,000-25,000 and 80,000-85,000 in the NHCP1 as well as 17,000-28,000 and 35,000-42,000 in the NHCP2) observed during neoplasia. The growth of neoplastic tissue is accompanied by increase, decrease (or disappearance) of some non-histone components.

POTENTIATION OF ANTITUMOUR EFFECT OF CYCLOPHOSPHAMIDE BY DL-α -DIFLUOROMETHYLORNITHINE (DFMO)

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Potentiating effect of DL-α-difluoromethylornithine (DFMO) in combination with different cytotoxic agents has been reported in experimental and clinical cancer chemotherapy. In order to clarify the mode of action, normal control and P388 leukaemia-bearing mice were treated with DFMO continuously and/or with a single dose of cyclophosphamide. Effects of singular and combined treatments were monitored by determination of metabolite concentrations in blood, urine, liver and tumour cells with respect to the conversion of ornithine into polyamines and urea cycle. Urinary excretion of natural and acetylated polyamines was measured during tumour growth