EIGHT DIFFERENT HUMAN BREAST CANCER CELL LINES

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Cytochromes P-450 are a family of haemoproteins involved in the metabolism of both endogenous and exogenous compounds, i.e. carcinogens. P-450c is inducible by TCDD. Induction of this gene measured by slot blot analysis of cellular RNA, and its effect on the metabolism of BP7,8-diol was studied in eight human breast cancer cell lines. The cells were grown under well defined conditions and treated with different concentrations of TCDD for 24 hr prior to addition of tritium labelled BP7,8-diol (675 nM). The basal level of P-450c mRNA was the same in all cell lines. The TCDD induced levels of P-450c mRNA followed the order: MCF-7>T47-D>ZR-75-1>3909>3522 in a dose-dependent manner. Three lines, AL-1, BT-20 and CAMA-1 did not respond at all to TCDD. Pretreatment of the cells with TCDD changed the BP7,8-diol metabolite profile. An unidentified compound with the retention between that of 9,10- and 7,8-diol was the major metabolite in TCDD treated cells. These results demonstrate that human breast cancer cell lines differ greatly from each other with respect to inducibility of P-450c by TCDD and that the induction influence the BP7,8-diol metabolite profile.

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DORMANCY AND PROGRESSION OF B LEUKAEMIC CELLS IN AKR MICE

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The high incidence of spontaneous T-cell lymphoma in AKR mice (arising predominantly in the thymus) can be abolished almost completely by thymus removal at the age of 1 to 3 months. Only 10 to 15% extrathymic lymphoid tumours occur late in life following thymectomy, nevertheless each of the thymectomized AKR mice is a carrier of dormant potential lymphoma cells (PLC). Transplantation of lymphoid cells from 8 to 14 months old AKR mice (thymectomized at the age of 40 to 60 days) into the appropriate intact or thymectomized recipients caused B cell leukaemia development of AKR origin in 100% of the recipients. Immunosuppressive treatment involving preferentially T-cell function like ATS, corticoids, X-rays and retroviruses isolated from AKR (DTV) were found to stimulate the progression of dormant PLC present in thymectomized AKR mice towards B-cell lymphoma development. Splenectomy of 8 to 12 months old thymecytomized mice and intravenous reinjection of their own splenocytes back resulted in breakdown of dormancy in 50 to 60% of the mice, suggesting the possible restrictive spleen microenvironment role on PLC dormancy.

A SHORT SYNTHETIC PEPTIDE FRAGMENT OF HUMAN INTERLEUKIN 1 β (hIL-1β) INCREASES HUMAN NATURAL KILLER (NK) ACTIVITY

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We previously characterized a synthetic peptide of IL-1β (fragment 163-171), which has immunostimulatory but not inflammatory activity. In this study we examined the effects of this peptide on natural cytotoxicity of human cells. Peripheral blood mononuclear cells (PBMC), preincubated in medium containing interleukin 2 (IL-2), exhibited a dose-dependent augmentation of NK activity against K562 leukaemia cells. In contrast, both IL-1β and the synthetic peptide were unable to stimulate the cytotoxicity of these cells. However, when PBMC were further depleted of monocytes by adherence to plastic, a marked increase of NK activity occurred in the presence of the peptide, but not in the presence of hIL-1α or β . Significant augmentation in cytotoxicity was obtained by preincubating lymphocytes for 18 hr with 10 to 100 µg per ml of the peptide. This effect is likely to be the result of the induction of IL-2 by the peptide, which, in contrast to the entire IL-1 molecule, does not stimulate the synthesis of prostaglandin E2, a potent inhibitor of NK activity.

GROWING CELL CULTURES EXERT DISTINCTIVE COLONY MORPHOGENESIS

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Morphogenesis of colonies of transformed or malignant cells <u>in vitro</u> requires feeder cells or enriched medium and