of T2D4 cells exposed to the 3T3-F were capable of transmitting the proliferative signal to naive T2D4 cells, within 15 min. The possibility of a relationship between the fast acting mitogen (FAM) in the T2D4 supernatants and immunoglobulin binding factor (IBF) was tested. IBF is a soluble form of FcR, released by T2D4 cells, with culture conditions similar to those allowing the release of FAM. Indeed, the exposure of T2D4 cells to the 3T3-F enhanced the release of IBF, shown to be acting as a self mitogen.

DEVELOPMENT OF NON-TUMOURIGENIC HUMAN MESOTHELIAL CELL LINES WITH TRANSFECTED SV40 LARGE T ANTIGEN GENE

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Human mesothelial cells were obtained from pleural effusions or ascites fluids of patients with non-malignant conditions, and transfected with a plasmid, pRSV-T, containing the SV40 large T antigen gene and the Rous sarcoma virus long terminal repeat. Colonies of morhologically transformed cells occurred with a frequency of 1 to 2 x 10^{-4} transfected cells; transformed cells were not seen in control cultures. Individual colonies were isolated and cultured. These cells retained electron microscopic features of mesothelial cells, and all expressed keratin, vimentin and SV40 T antigen as detected by indirect immunofluorescence. The cells were aneuploid but most had near-diploid chromosome counts. For all cultures studied, the time to senescence was extended (60 to 70 population doublings (PD), 140 days) compared to normal mesothelial cells (15 PD, 30 days). For at least one culture, cells have escaped senescence and appear to be immortalized. Injection of 5 x 10^6 cells per site into nude mice has yielded no tumours after 6 to 12 months. Experiments are in progress to determine the response of these cells to asbestos and to transfection by other oncogenes and growth factor genes.

PHOSPHORYLATION OF L-TYPE PHOSPHOFRUCTO-KINASE IN HUMAN GLIOMAS

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The activity of the enzyme phosphofructokinase was decreased in human gliomas in comparison to normal brain. This decrease was accompanied by a relative increase in the expression of the L-type subunit of the enzyme. In addition, this particular subunit could be phosphorylated, most probably by a cAMP-independent protein kinase. This phosphorylation could not be detected in normal brain. The tumour enzyme appeared to be less sensitive to citrate inhibition and, more importantly, more sensitive to the activation by fructose--2,6-bisphosphate. The enzymes from tumour and normal brain showed no significant differences in their affinity towards the substrate fructose-6-phosphate. The results suggest an altered regulation of glycolysis in human gliomas by a reversible, cAMP-independent phosphorylation of phosphofructokinase.

DNA ADDUCTS IN MOUSE AND RAT EPIDERMIS VERSUS DERMIS AFTER TOPICAL APPLICATION OF (±)-TRANS7β,8α,-DIHYDROXY-9α,10α,-EPOXY-7, 8,9,10- TETRAHYDROBENZO(a)PYRENE AND (±) BENZO(a)PYRENE- 4.5-OXIDE

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Mice and rats were treated topically with the BP metabolites, (±)-7β,8α,-dihydroxy-9α,10α,-epoxy-7,8,9,10-tetrahydrobenzo(a)pyrene (anti-BPDE) and (±) benzo(a)pyrene-4,5-oxide (BPO). Rat epidermal DNA was extensively modified by BPO, while mouse epidermal DNA was preferentially modified by anti-BPDE. Anti-dGuo adducts were observed only in mouse dermal DNA. DNA adducts were absent from the rat dermis. This adduct formation could produce the significantly different biological effects observed in vivo in the two species.

BREAST CANCER RISK FACTORS IN FINLAND AND THE UNITED STATES

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Breast cancer (BC) incidence is lower in Finland than in the United States, yet both popoulations have the same high dietary fat intake, a suspected risk factor for this tumour. To explore this discrepancy, other potential risk modifiers were compared in 286 healthy women and 124 BC patients in New York (NY) , and 163 healthy controls and 106