DUR TWO-DIMENSIONAL ELECTROPHORETIC ANALYSIS OF METABOLICALLY AND CELL SURFACE RADIOLABELLED PROTEINS FROM SOME HUMAN NEOPLASTIC HAEMOPOIETIC CELL LINES

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Cell surface proteins radiolabelled by lactoperoxidase catalyzed radioiodination and cell surface sialoglycoproteins radiolabelled by sodium metaperiodate/tritiated sodium borohydride, as well as cell proteins metabolically radiolabelled by ^{35}S-methionine or ^{32}P, were analyzed with the aid of two-dimensional electrophoresis (isoelectrofocusing; SDS-PAGE). Essentially similar two-dimensional protein patterns with some minor quantitative differences of some separated proteins were observed between myeloid and lymphoid leukaemia lines radiolabelled with ^{35}S-methionine. More selective techniques of radiolabelling, such as lactoperoxidase catalyzed radioiodination of cell surface proteins, cell surface radiolabelling of sialoglycoproteins with periodate oxidation followed by reduction with tritiated sodium borohydride or metabolic radiolabelling of phosphoproteins by ^{32}P allowed detection of proteins expressed predominantly or only on lymphoid versus myeloid lines, as well as those shared by these two groups of lines.

DUR PHORBOL ESTER-INDUCED DIFFERENTIATION-ASSOCIATED CHANGES IN THE HUMAN NON-T, NON-B LEUKAEMIA CELL LINE REH

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Changes in the expression of differentiation-associated antigens, induced in vitro by treatment with 12-O-tetradecanoylphorbol-13-acetate (TPA) on the non-T, non-B human leukaemia cell line REH were determined by indirect immunofluorescence with the aid of monoclonal antibodies. A decrease of CALLA, increased adherence of TPA-treated cells and an increase in the expression of some monocyte-associated differentiation antigens were induced by TPA treatment. Two further B-lymphocyte associated antigens, B1 and BA1 were unchanged by TPA treatment, B1 antigen being unexpressed on REH cell line in the presence or absence of TPA. Three newly prepared monoclonal antibodies, recognizing different leucocyte differentiation antigens were utilized in the study of TPA-induced antigenic changes of REH cells. Glycoprotein gp30,35 apparently corresponding to MHC class II antigens was slightly increased after TPA-treatment; the common leukocyte antigen gp95 and B-lymphocyte antigen p30 remained unchanged. Further biochemical TPA-induced changes have been investigated.

DUŚ CELLULAR GLYCANS ALTERATIONS ACCOMPANYING MALIGNANT PHENOTYPE IN HUMAN UROEPITHELIAL CELLS

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One of the cell surface modifications associated with the malignant phenotype is the appearance or the increase of high molecular weight glycopeptides due to an enrichment of highly branched N-acetylactaminic type N-glycans. The results of the present study support this hypothesis. Six human uroepithelium cell lines of normal or tumour origin were analysed. Total cellular glycopeptides radiolabelled with D-glucosamine were fractionated on Ultrogel ACA202. Cell lines which were invasive in vitro and tumourigenic in nude mice, contained more high molecular weight glycopeptides than non-tumourigenic, non-invasive cell lines, irrespective of their origin. Subsequent structural studies involving affinity chromatography on Con A- and LCA-Sepharose revealed that glycopeptides of malignant cells contained more of the highly branched, tri- and tetra-antennary N-glycans with a concomitant decrease in the amount of biantennary N-glycans.
