31

THE PLASMA PROTEINS ASSOCIATED WITH LEUKEMIC CELLS AS MARKERS OF DIFFERENTIATION. Andersen, M.M., Christensen, I.J., Hummelgaard, S.&Simonsen, H. The Finsen Laboratory, Rigshospitalet, Copenhagen.

The cell-associated prealbumin, albumin, orosomucoid, a_1-antitrypsin, haptoglobin and transferrin were quantified in 213 samples of washed leucocytes, leukemic cells and bone marrow cells from normal individuals and patients with various leukemias by quantitative immunoelectrophoresis. By statistical multivariate analysis the plasma proteins were correlated with the diagnoses and with the cell differential counts. RESULTS: The overall protein pattern of cells taken from patients with AML was significantly different from normal. Cells from patients with CML had protein patterns which were between AML and normal. The content of a_1-antitrypsin was significantly correlated with the percentage of myeloblasts and myelocytes (correlation coefficient r=0.40 and 0.36).The content of albumin was significantly correlated with the lymphocytes (r=0.61) and orosomucoid with the granulocytes (r=0.62).However in leukemia some morphological normal granulocytes did not contain orosomucoid. The plasma proteins associated with bone marrow cell types were the same as with the corresponding cell types in circulation.

32

CHILDHOOD EXPOSURES AND RISK OF TESTICULAR CANCER. Prener A and Engholm G. Danish Cancer Society, Danish Cancer Registry, Institute of Cancer Epidemiology, Landskronagade 66, 4th floor, DK 2100 Copenhagen, Denmark.
The incidence of testicular cancer (TC) in Denmark has since the mid 1940'ies shown a three-fold increase, for unknown reasons. Cryptorchidism is the only identified risk factor, but only about 10% of men with TC has this condition. By use of data from an archive of school health records including information from yearly physical examinations on children attending schools in the Copenhagen municipality, a case-control was performed. Data on number in birthorder, size of sibship, fathers occupation, infectious diseases, cryptorchidism, hernia and growth pattern in childhood were included for the 184 cases and 372 controls. Preliminary results show that cryptorchidism and number in birthorder are the most important risk factors. In contrast to most other studies no increased risk for developing TC was observed in boys that had mumps after 12 years of age.
Preliminary analyses of data on height and weight indicated that cases were taller and heavier than controls untill puberty. After puberty cases were smaller and lighter.

33

CYTOGENETIC ANALYSIS OF IN VITRO KARYOTYPE EVOLUTION IN A CELL LINE ESTABLISHED FROM NONMALIGNANT HUMAN MAMMARY EPITHELIUM

Kirsten Vang Nielsen[1] and Per Briand[2]
Section of Clinical Genetics, Dept. of Gynecol. and Obst., Rigshospitalet[1] and Lab. of Tumor Endocrinology, The Fibiger Inst. of the Danish Cancer Society[2], Copenhagen, Denmark

Cytogenetic analysis was carried out on 6 passages (16, 19, 21, 25, 34 and 47) of the epithelial cell line HMT-3522, established from non-malignant human breast tissue. Chromosome abnormalities were present in the first passage (16) available for study, and the cytogenetic changes persisted and were further developed during the in vitro growth of this non-tumorigenic cell line. A modal chromosome number of 45 chromosomes was found in all passages. Each passage contained 4-5 marker chromosomes. Three markers were constantly present in all passages studied. During in vitro growth two markers were gained and two markers were lost from the stemline karyotype. The two latest passages studied had identical karyotypes: 45,XX,-6,del(1)(p32),8q+,12p+,der(14)t(6;14)(p11;qter),der(17)t(6;17)(q11;qter). The present study demonstrates chromosome abnormalities and karyotypic evolution in a non-tumorigenic (in nude mice) and non-invasive (in vitro tested) cell line established from nonmalignant epithelial breast tissue. The results are discussed in relation to gene amplification, double minutes and oncogene localization.

34

CYTOGENETIC ANALYSIS OF TRANSFECTED HUMAN UROTHELIAL CELL LINES.

Kirsten Vang Nielsen, Britta Christensen, Jan Skouv, Nikolaj Andersen, Birgitte Pedersen and Anja Philip
Chromosomelaboratory, Department of Gynecology and Obstetrics, Rigshospitalet and The Fibiger Institute, The Danish Cancer Society, Copenhagen, DENMARK.

Cytogenetic analysis was carried out on a tumorigenic *raf*-transfectant, a non-tumorigenic *myc*-transfectant, as well as the original non-tumorigenic human urothelial cell line, HCV-29, using G-banding technique.

The results showed that the *raf*- and the *myc*-transfected cell lines had identical karyotypes. The original HCV-29 cell line had a normal chromosome no. 14 and a marker chromosome derived from a translocation between chromosome no. 1 and 14. The two transfectants had two such markers and no normal chromosome no. 14. Thus, the only cytogenetic difference that could be related to the transfection was a loss of a normal chromosome no. 14 and a dublication of the marker derived from chromosome no. 14, creating partiel monosomi for the q-terminal region of chromosome no. 14.
HCV-29 was karyotyped 3 years ago. The present study showed that only minor cytogenetic changes had occured during this period, suggesting that the cell line HCV-29 has a relatively stable genome.
It is concluded that the tumorigenic properties of the *raf*-transfected cells are due to the *raf*-gene itself or its localization.