CYTOCHEMICAL PHENOTYPES OF THE SPONTANEOUS TRANSPLANTABLE RENAL ADENOCARCINOMA IN BALB/c/Cd MICE. Danielle Jacobovitz, Willy Penasse and Paul Galand.
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Cytochemical characterization was made in the renal tumour that appears spontaneously in 70% of mice of this strain (Claude substrain) (1). Glucose-6-phosphatase, Mg^{++} ATP-ase, and γ-glutamyl-transpeptidase activities were compared in normal renal tubules and in renal adenocarcinoma. Results revealed a lack of enzyme levels in the tumour, as compared with normal kidney. These findings are consistent with the ultrastructural mitochondrial alterations previously described (2), showing impaired metabolism and respiration. These cytochemical alterations seem to represent useful markers for detecting early kidney tubule lesions during progression toward carcinoma.

1. Claude, A. A spontaneous transplantable renal carcinoma of the mouse J.Ultrastruct. Res., 6, 1-18, 1962.

2. Keyhani, E. Anomalies de structure de mitochondries dans un adénocarcinome rénal spontané de la souris. Arch. Biol. (Liège), 80, 153-166, 1969.

CYTOGENETIC STUDIES OF 2-NAPHTYLAMINE IN TWO CELL LINES DERIVED FROM HUMAN AND RAT BLADDER EPITHELIUM. Jørgen Carsten Jensen [1] and Britta Christensen[2]. [1]Institute of Toxicology, National Food Institute and [2]The Fibiger Laboratory, Division of Environmental Carcinogenesis, Copenhagen, Denmark.

A human cell line (HCV-29) and a rat cell line (RBl-83), both derived from bladder epithelium, were exposed to 2-naphtylamine (25 μg/ml) for 24 hr in monolayer cultures. At the same time liquid cultures of both cell lines were treated for 3 hr with 2-naphtylamine (25 μg/ml) in the presence of rat liver microsomal fraction (S-9 mix). After treatment the liquid cultures were transferred to culture flasks, and grown as monolayer cultures for an additional 21 hr. Clear cytotoxic effects of 2-naphtylamine were seen in all treated cultures. The RBl-83 cell line revealed a very unstable karyotype with a chromosome number of 78-88 chromosomes, and with a spontaneous level of about 20 per cent cells with one or more chromosomal aberrations. Due to the unstable karyotype, no clear conclusion could be drawn from the results obtained with this cell line. Chromosome studies of the HCV-29 cell line revealed a very stable, near diploid cell line (49 chromosomes, many of which appear like human chromosomes). No difference was found in the frequency of chromosomal aberrations between the treated and the control cultures in the HCV-29 cell line in any of the treatment schedules.

ACTIVATION OF 2-NAPTHYLAMINE IN BLADDER CELL LINES STUDIED BY THE SALMONELLA/MAMMALIAN MICROSOME TEST. Niels Juul Jensen[1], Britta Christensen[2] and John Chr. Larsen[1].
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The Salmonella microsome test was used as a marker for bladder cell mediated activation of the bladder carcinogen 2-napthylamine to mutagens. A human (HCV 29) as well as a rat (RB-1-83) bladder epithelium derived cell line was used. The Salmonella test was performed either on media from cells cultured in the presence of 100 μg 2-napthylamine/ml or by incorporating the bladder cells into the top agar. Irrespective of the method, no mutagens could be detected when bladder cells were used as the metabolizing system. The mutagenic potency of 2-napthylamine in the Salmonella test was not affected by the presence of bladder cells during 72 hr of cultivation as demonstrated by the subsequent addition of S-9 mix. These findings suggest that the cell lines derived from human and rat bladder might not be able to metabolize the bladder carcinogen 2-napthylamine to mutagens in quantities or forms detectable in the Salmonella test. Furthermore biphenyl 2- and 4-hydroxylase activities could not be demonstrated in subfractions of the two bladder cell-lines.