IMMUNOHISTOCHEMICAL LOCALIZATION OF TWO TYPES OF PLASMINOGEN ACTIVATORS IN NORMAL TISSUE. P.Kristensen[1], J.G.Hansen[1,3], L.Skriver[1,3], L.S.Nielsen[1,3], L.-I.Larsson[2], and K.Danø[1,3]. [1]Laboratory of Tumor Biology, Institute of Pathology, University of Copenhagen; [2]Institute of Medical Biochemistry, University of Aarhus; [3]Finsen Laboratory, Finsen Institute, Copenhagen, Denmark.

Two types of plasminogen activators exist, with M_r of ~50,000 (the urokinase type) and of ~70,000 (the tissue type), respectively. We have studied the distribution of a murine 48,000-M_r plasminogen activator (MPA48) and a human 66,000-M_r plasminogen activator (HPA66) in normal tissues of the two species, using the peroxidase/antiperoxidase staining technique with polyclonal rabbit IgG antibodies against the respective enzymes. The most significant MPA48 immunoreactivity was found in a fibroblast-like cell type present in several tissues, in kidney tubular cells, in epithelial cells of vas deferens, in trophoblast-like cells in the decidua of the placenta, and in involuting mammary glands, but was absent from the glands during lactation. MPA48 immunoreactivity was not detected in brain, pituitary, spleen, liver and blood vessels. In contrast, intense HPA66 immunoreactivity was present in endothelial cells of veins and small arteries. These results support the hypothesis that the urokinase type plasminogen activator - among other functions - plays a role in localized tissue destruction, while the tissue type activator plays a role in thrombolysis.

INHIBITION OF TUMOUR DEVELOPMENT IN THE REGENERATING URINARY BLADDER OF THE RAT
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The present animal experiments deal with the effect of stimulation of urothelial proliferation on experimental carcinogenesis in the urinary bladder. Stimulation of proliferative activity was achieved either by a one-third resection of the bladder or by a single intraperitoneal administration of cyclophosphamide (100 mg/kg). N-butyl-N-(4-hydroxybutyl)-nitrosamine was used as carcinogen and administered by gavage in a low and a higher total dose (300 mg/kg and 1,300 mg/kg) when proliferation of the urothelium was highest. Contrary to our working hypothesis the incidence of urinary bladder tumours proved to be significantly reduced in both experimental models compared to controls with a quiescent urothelium. From findings in other analogous experimental models it is assumed that the observed dose-dependent partial inhibition of bladder carcinogenesis is brought about by an increased capacity of the proliferating urothelial cells to repair carcinogen-induced DNA damage.

DIFFERENTIATION MARKERS (S-100, GFA, 14.3.2 AND D2) IN FOETAL RAT BRAIN CELLS DURING MALIGNANT TRANSFORMATION IN CELL CULTURE. O.D.Laerum[1], S.J.Mørk[1], Å.Haugen[1], E.Bock[2] and K.Haglid[3]. [1]The Gade Institute, Department of Pathology, University of Bergen, Norway; [2]The Protein Laboratory, University of Copenhagen, Denmark; [3]Institute of Neurology, Medical Faculty, University of Goteborg, Sweden.

Different protein markers for neural cells, S-100 protein, glial fibrillary acidic protein (GFAP), the neuronal enolase isoenzyme markers 14.3.2 and the synaptosomal membrane protein D2 have been investigated by immunofluorescence on foetal rat brain cells undergoing malignant transformation in cell culture. A transplacental pulse exposure of ethylnitrosourea (EtNU) was followed by explantation of the foetal rat brains to monolayer cell culture shortly afterwards. S-100 protein was absent in primary brain cells, but gradually appeared in the later stages of malignant transformation. GFAP and D2 were weakly expressed in primary brain cells and did not change throughout malignant transformation. The neurone-specific enolase was present in both normal and carcinogen-treated foetal brain cells and was enhanced at the later stages of malignant transformation. After acquisition of tumourigenicity, some cell lines were positive, some negative.

The presence of both glial and neuronal protein markers in rat brain cells undergoing malignant transformation indicates that EtNU given at 18th day of gestation is acting on multipotent neuroectodermal cells.