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Cultured keratinocytes obtained from human hair follicles might be a useful tool to study mutagenicity in human epithelial cells. Human hair follicles possess a cytochrome P-450 dependent enzyme system which is capable to metabolize xenobiotics. The preservation of this enzyme in vitro is important for the application of hair follicle cell cultures in genotoxicity studies especially for promutagens and procarcinogens.

We studied the immunolocalization of cytochrome P-450 using monoclonal antibodies (K03 and K07) raised against two isoenzymes. The antigens were present in freshly plucked hair follicles, fibroblasts and the cell line SVK14. In the cultured keratinocytes no staining was observed by the antibodies. Since the cell line SVK14 shows a medium dependency on the antibodies, the absence of cytochrome P-450 in the hair follicle keratinocytes is ascribed to the culture conditions. Further studies on the relation between culture conditions and maintenance of cytochrome P-450 is required.

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NANOMOLAR CONCENTRATIONS OF Ca**+ INHIBIT Ca**+ TRANSPORT SYSTEMS IN PLASMA MEMBRANE AND INTRACELLULAR Ca**+ STORES.


Exposure of fish to cadmium (Cd) in the water causes a spectrum of toxic effects that is well documented. The mechanisms of Cd-toxicity, however, are largely unknown. A transient hypocalcemia is observed in fish the first days after Cd-exposure, which is indicative of a disturbed Ca**+ transport in the branchial epithelium. After Cd-exposure, the absorption of Cd**+ by the gills is strongly inhibited by Cd**+ (IC50 = 20 nM). The isocyanates, particularly HDI, showed a large toxic effect on the branchial epithelium. Exposure to isocyanates is known to cause pulmonary and skin irritation as well as immunologic sensitization of the respiratory tract. In contrast to these well studied toxic effects, little is known about the mutagenic and possible carcinogenic effects of the isocyanates.

We present a study of the mutagenic action to Salmonella typhimurium of three isocyanates extensively used in polyurethane industry: toluene diisocyanate (TDI), 4,4'-di-phenylinethane diisocyanate (MDI) and hexamethylene diisocyanate (HDI). In addition, the closely related tolylisonicotaine (TDA, MDA, HDA and toluidine) were incorporated in the Ames-tests.

A two-week feeding study of BHA: Effect on cell kinetic parameters in the rat gastro-intestinal tract.

H. Verhagen, B. Schutte, M.M.J. Reyners.

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1. B.N. Ames, J. McCann and E. Yamasaki, Mutation Research, 31 (1975) 347

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