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 promotagens 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 SVKj4. In the cultured keratinocytes no staining was observed by the antibodies. Since the cell line SVKj4 shows a medium dependent response 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 Cd2+ INHIBIT Ca2+ TRANSPORT SYSTEMS IN PLASMA MEMBRANE AND INTRACELLULAR Ca2+ 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 Ca2+ homeostasis. For freshwater trout it was demonstrated (1) that Cd-dependent inhibition of transepithelial Ca2+ transport is involved in this disturbance. Using permeabilized duodenal cells we were able to study the effect of Cd2+ on ATP-dependent Ca2+ transport in intracellular stores. A kinetic analysis of the Cd2+ inhibition was undertaken to evaluate the mechanism of inhibition on the molecular level.