suspected despite a CEA-value that fell within the normal range. Differing conclusions in the literature as to the accuracy of the test have also been reported.

It is concluded that out of the currently available markers periodically-repeated CEA-determinations supplemented with appropriate clinical investigations may be used for controlling patients who have undergone surgery for CC.

PROSTAGLANDIN H SYNTHASE CATALYZED METABOLISM OF HETEROCYCLIC AROMATIC AMINES OF THE IQ-TYPE AND THEIR ACTIVATION TO MUTAGENS

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IQ (2-amino-3-methylimidazo[4,5-f]quinoline) and related compounds occurring in heat-processed, protein-rich food are known to be mutagenic upon activation by mixed function oxidases and cause hepatic and extrahepatic tumours in rodents. IQ and 3 analogs (Kaiser et al, Chem.-Biol. Interact. 57: 97, 1986) were recently studied in a modified Ames-test and displayed prostaglandin H synthase (PHS)-dependent activation to mutagens in the order: iso IQ > IQ > NI>> demethyl-IQ (Wild and Degen, Carcinogenesis, 1987, in press). Metabolism of IQ and analogs incubated in vitro with PHS from ram seminal vesicle microsomes supplemented with arachidonic acid or hydrogen peroxide has now been studied by HPLC and TLC: NI, demethyl-IQ, IQ and iso-IQ were oxidized by PHS-peroxidase (80, 68, 54 and 18% respectively) and yield coloured products with different efficiency. Co-oxidation and/or co-oxygenation of IQ-type compounds may be responsible for their PHS-dependent activation to mutagens. Horseradish peroxidase under comparable conditions scarcely metabolized IQ, and interestingly, it did not activate IQ to a mutagen.

The data point to PHS as an activating system for food-borne arylamines of the IQ-type. This may be relevant for their extra-hepatic tumourigenic action.

Supported by the Deutsche Forschungsgemeinschaft (SFB 172).

CHANGES IN LIVER CELL PLOIDY EMERGING DURING RAT HEPATOCARCINOGENESIS

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Nuclear DNA content of hepatocytes was quantified during the early steps of rat hepatocarcinogenesis by TV based densitometry using an image analysis device Magiscan 2A (Joyce Loebl, G.B.). Putative preneoplastic lesions as foci and nodules were induced by the triphasic "Gerlans protocol" (Initiator=DEN, Selection=2-AAF+CCl_4 or pH, Promotor=Phenobarbital). The amount of DNA in the hepatocellular nuclei was determined densitometrically on Feulgen-stained sections. The animals were sacrificed at 1 day before and 5, 8, 12, 15, 18 days after CCl_4 treatment and furthermore after 1, 2, 3, 5 months Phenobarbital (PB) treatment. Comparison is also made between the use of CCl_4 or partial hepatectomy during the selection procedure. This study reveals a shift towards a diploid hepatocellular population after the end of the selection phase and later on the emergence of preneoplastic lesions with a high frequency of diploid nuclei. The observed diploidisation might be a relevant parameter for tracing of early lesions during hepatocarcinogenesis; the analysis of the early lesions is finally improved by our TV-based image analysis system.

DETECTION OF HYALURONIDASE IN HEPATOMA CELL CULTURE MEDIUM WITH A SENSITIVE INDIRECT ENZYMO - IMMUNOLOGICAL ASSAY

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Hyaluronic acid was adsorbed onto plastic microtest plates. It was measured with an indirect enzymo-immunological technique taking advantage of its capacity to bind a proteoglycan (hyaluronectin, HN) supplemented with alkaline phosphatase conjugated rabbit anti-HN antibodies. The presence of active hyaluronidase was detected by the destruction of insolubilized hyaluronic acid in proportion to the hyaluronidase concentration of samples. Human hepatoma cell lines HepG2 and PFC/PRF/5 were cultivated with,then without foetal calf serum. Cell culture media as well as cell extracts could digest adsorbed hyaluronic acid. Soluble hyaluronic acid was degraded into smaller molecules as shown by liquid chromatography. The secretion in culture medium was estimated at 2×10^{-11} NFU/cell/min. The activity was suppressed by heating at 50° C for 5 minutes or by protease digestion. The optimum pH was 3.5.