

N-ACETYLTRANSFERASE PHENOTYPES IN BLADDER PATIENTS AND CONTROL PERSONS.

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The purpose of this study was to investigate the distribution of slow and rapid N-acetyltransferase phenotypes in the serum of smoking and non-smoking bladder cancer patients and control persons. The aim was to determine whether there was a correlation between phenotypes and other parameters (e.g. residence, stage of the disease).

The phenotypes were measured in 180 bladder tumour patients and we found 63.3% slow acetylators and 36.7% rapid acetylators. In preliminary tests with 46 control persons, 52.2% were slow acetylators and 47.8% rapid acetylators. This distribution was not however significantly different to that of the patient group. In the group of 180 patients, 65.3% of the smokers compared with 53.3% of the 'never-smokers' were slow acetylators, and slow phenotypes were mostly associated with stages T3 and T4 bladder cancer.

Tobacco smoking in persons with slow phenotypes may increase the level of aromatic amines thus leading to the possible accumulation of proximate bladder carcinogen

INVASION OF EMBRYONIC CHICK HEART FRAGMENTS BY CELLS FROM DENA-INDUCED LIVER NEOPLASTIC NODULES OR CARCINOMAS. R.Mosselmans¹, L.de Ridder², D.Bernaert¹ and P.Galand¹.

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We previously reported on the progressive invasion of precultured heart fragments by hepatocytes from isolated neoplastic nodules and by hepatocarcinoma cells, both obtained from diethylnitrosamine (DENA)-treated rats (Cancer Res. 41, 5162, 1981). The present report further compares the behaviour and properties of the two cell types in the invasiveness assay, 1, 4, 7 and 10 days after confrontation. Ultra-structural investigations revealed striking similarities in the phenotypes of invasive cells from the two populations: abundant liposomes, unfolded RER and proliferated SER. Presence of α -glycogen particles and/or peroxisomes in both cases confirms the hepatocytic origin of the cells. Hepatocarcinoma cells actively divide in the co-cultures, and contrary to nodular cells, migrate as groups of cells (rather than individually) and increase in number progressively replacing the host tissue. This difference in behaviour suggests a stepwise acquisition of invasiveness properties. Continuous labelling with ³H-thymidine, followed by autoradiography showed that cell proliferation eventually can be dissociated from invasiveness, arguing against the concept of "invasive growth".

MUTAGENIC ACTIVITY IN AIR-BORNE PARTICULATE POLLUTANTS. G.Motykiewicz, G.Mańka, B.Cimander and E.Kalinowska. Department of Tumour Biology, Institute of Oncology, 44-100 Gliwice and District Sanitary-Epidemiologic Station, 40-075 Katowice, Poland.

The distribution of mutagenic activity in benzene extracts of air-borne particulate material collected in the industrial district of Silesia was evaluated in the Salmonella system. Air-borne material was systematically collected on fibre-glass filters at 23 locations using Staplex High-Volume samplers. Benzene extracts of filters were fractionated by alumina column chromatography and the content of polycyclic aromatic hydrocarbons (PAH) was determined in each sample. The mutagenic activity of dried benzene extracts redissolved in DMSO was estimated on *S.typhimurium* TA98 and TA100 Ames strains in the presence or absence of rat liver S9 microsomal fraction.

Directly active mutagens were detected in each sample and in a period of 7 months, the mutagenic potency did not always correlate with the content of benzo(a)pyrene (BP). In preliminary studies seasonal variation in mutagenic activity was noted. Samples collected in winter months showed higher mutagenic activity and a higher content of BP than those collected in the summer.