ELEVATION OF CARBOXYPEPTIDASE N IN LUNG CANCER

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Serum carboxypeptidase N (3.4.17.3) was measured spectrophotometrically in 60 patients (untreated and treated) with histologically confirmed lung cancer. Hippuryl-L-arginine was used as enzyme substrate for carboxypeptidase N_1 (CN_1), hippuryl-L-lysine for carboxypeptidase N_2 (CN_2). The results were: squamous cell (untreated): CN_1 37.4 $\pm$ 7.9 ($\pm$ SD) U/ml, CN_2 184.0 $\pm$ 34.8 (n = 10), treated by radiotherapy: CN_1 61.9 $\pm$ 28.0, CN_2 185.0 $\pm$ 47.4 (n = 10); oat cell (untreated): CN_1 45.0 $\pm$ 26.7, CN_2 168.7 $\pm$ 55.7 (n = 10), treated by chemotherapy (cisplatin, adriamycin, vindesine, VP-16): CN_1 49.0 $\pm$ 36.9, CN_2 171.9 $\pm$ 53.5 (n = 18); bronchioloalveolar: CN_1 52.8 $\pm$ 3.8, CN_2 181.5 $\pm$ 6.6 (n = 4): adeno: CN_1 52.0 $\pm$ 29.0, CN_2 192.4 $\pm$ 38.6 (n = 4); non classified 92.6 $\pm$ 58.8, CN_2 209.5 $\pm$ 62.9 (n = 4) carcinomas. After treatment CN_1 and CN_2 slightly increased. Compared to 51 healthy controls CN_2 was significantly elevated ($p<0.001$), but CN_1 was not. In contrast to the reduced activity of the angiotensin converting enzyme, CN_2 is elevated in all types of lung cancer. Our results suggest that CN_2 could be used as a marker for lung cancer.

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BIOCHEMICAL AND MOLECULAR EPIDEMIOLOGY OF CANCER.

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The primary goal of biochemical and molecular epidemiology is to identify individuals at high cancer risk by obtaining evidence of (a) high exposure of target cells to carcinogens and/or (b) increased susceptibility due to inherited or acquired host factors. For example, laboratory methods have been recently developed to measure carcinogen bound to DNA isolated from cells from people exposed to environmental carcinogens. Our strategy uses complementary immunological and biophysical approaches.

IMMUNOHISTOCHEMICAL LOCALIZATION OF 48,000-M_r PLASMINOGEN ACTIVATOR IN MURINE TUMOURS.

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The localization of a murine 48,000-M_r plasminogen activator (MPA48) in the Lewis lung tumour and a number of other transplantable and spontaneous murine tumours has been studied, using the peroxidase/antiperoxidase staining technique with polyclonal rabbit IgG antibodies against the enzyme. The presence of intense MPA48 immunoreactivity in the tumours was revealed. The specificity of the staining was controlled in a variety of ways, including the demonstration of only one immunoreactive band, corresponding in electrophoretic mobility to MPA48, among extracted tissue proteins separated by SDS-polyacrylamide gel electrophoresis and electrophoretically transferred to nitrocellulose paper. A pronounced variation in staining intensity was observed between different areas of the tumours, indicating cellular heterogeneity with respect to this characteristic. The enzyme was primarily located in areas where extensive degradation of normal tissue was observed. These findings support the hypothesis of a role of this enzyme in tissue degradation in cancer.