trypsinisation. The K562 cell line from a patient with chronic myeloid leukemia in blastic crises was used as a positive control target due to its particular susceptibility to SCMC. Results are shown comparing curves of a series of effector to tumor target cell ratios with the corresponding positive control target tested at the same time.
51-Cr uptake of tumor cell suspensions from patients with acute leukemia and lymphoma was significantly lower compared to solid tumors. There was no difference with respect to spontaneous 51-Cr release during the test. Four out of 26 freshly separated tumor cell suspensions showed some lysis. The highest values were observed in tumor cells from a cerebellar metastasis of a lung tumor patient. Data were reproducible and there was no difference between fresh and frozen tumor cells neither in positive nor in negative test results. The other three tumor suspensions with very low NK-sensivity were from neoplastic ascites of patients with ovarian, stomach and breast cancer. Possible explanations for this low sensivity of uncultured human tumor cells will be presented.

KINETICS OF INTERFERON INDUCED INHIBITION OF DNA SYNTHESIS

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22 hour preincubation of human mammary carcinoma cells (BT 20) with interferon (IFN) inhibited in a dose dependent fashion, the incorporation of 3-H-thymidine (3-H-T) into acid insoluble material (DNA synthesis). Maximal inhibition was seen with 1000 U IFN/ml, and was comparable to that observed after treatment with Actinomycin D (10 µg/ml). Uptake of 3-H-T into an acid soluble pool was only marginally affected. The kinetics of the induction of DNA synthesis inhibition were followed by hourly pulses of 3-H-T over a period of 22 hours, starting at the time of IFN addition to the cultures. We observed an initial lag period followed by a short-term increase in DNA synthesis. This burst of DNA synthesis occurred earlier when higher doses of IFN were used. An IFN dose dependent inhibition of DNA synthesis was seen only 12 hours after IFN treatment. Control values were again observed after 44 hours. We saw no parallelism between uptake of 3-H-T and DNA synthesis. Another human cell line (hypernephroma) showed also a lag period followed by a burst of DNA synthesis after IFN treatment. However, only a marginal inhibition was seen later. Thus, IFN enhances and then - in susceptible cells - depresses DNA synthesis. The inhibition by IFN is reversible. These effects are not merely a consequence of fluctuations in 3-H-T transport through the cell membrane.

STEROID RECEPTORS IN HUMAN MAMMARY TUMORS; RESULTS AND EXPERIENCE OF FOUR YEARS

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During the last four years estrogen and progesterone receptors of more than 800 mammary tissue biopsies were measured in our laboratory. The method used is a five-point saturation assay based on the Dextran charcoal procedure using 3H-estradiol competed by diethylstilbestrol for the estradiol receptor and 3H-R-5020 competed by progesterone for the progesterone receptor. The evaluation is carried out by computer-aided Scatchard plot analysis. Receptor concentrations of more than 10 fmol/mg protein are regarded as positive.
From 480 mammary carcinoma biopsies 49 % were positive with respect to both receptors (ER+/PgR+), 23 % contained only estrogen receptor (ER+/PgR-, 23 % were negative for both receptors (ER-/PgR-), whereas in 5 % only progesterone receptor was beyond the detection limit (ER-/PgR+). In metastases of lymphnodes (n-21) the receptor-containing tissues were less frequent (ER+/PgR+: 19 %; ER+/PgR-: 38 %; ER-/PgR+: 0 %; ER-/PgR-: 43 %). The percentage of ER+ samples increased with age. Premonopausal women tend to have lower ER-concentrations, showing an increase in percentage which lacks both receptors.
The same method is used by five laboratories in Switzerland being members of the steroid receptor study group of the SAKK (Schweizerische Arbeitsgruppe für klinische Krebsforschung). Quality controls are regularly carried out by sending out standard preparations which are assayed by all participants of the SAKK study group. The results are consistent with respect to the quality judgment, whereas quantitative agreement did not prove satisfactory.
The tissue selection by the pathologist is of utmost importance. All tissue samples tested for estrogen receptors were submitted to an additional histological examination. In 7 % of all cases the result of this examination was different from the original histological diagnosis, accounting for a substantial part of receptor-negative cases.
Estrogen receptor determination on dysplastic tissue resulted in a correlation between the presence of estrogen receptors and morphological high risk factors.
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