MEETING ABSTRACTS

HORMONE SENSITIVITY OF OVARIAN AND BREAST CANCER COLONY FORMING CELLS

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Fifty-nine primary ovarian tumour samples and twenty-four primary breast tumour samples formed colonies in semi-solid medium which is supplemented with 5% foetal calf serum. Progesterone and 17-beta-oestradiol were tested by continuous exposure. Ovarian cancer cells exposed to 10^{-6} to 10^{-8}M 17-beta-oestradiol were significantly inhibited (less than 30% growth compared to control) in only 7 instances. Similar data was observed with 10^{-6} to 10^{-7}M progesterone. Colony formation was enhanced by 17-beta-oestradiol in eleven instances. These data suggest that hormonal manipulations should have little clinical benefit in ovarian cancer. Breast cancer samples that grow in our assay system represent a subgroup of particularly aggressive tumours unrelated to the presence of estrogen receptors. Only 3/24 samples were affected by 17-beta-oestradiol. Thus it appears that colony-forming cell assays detect a subgroup of estrogen-receptor positive breast cancers that may respond poorly to hormone treatment.

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QUALITY CONTROL OF COLONY FORMING CELL (CFC) ASSAYS

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The EORTC CASSG is comprised of laboratories in nine European countries. One of the aims of the group is to examine the reliability and explore potential clinical applications of CFC assays. We have completed two studies in which a single cell-line (colon, WiDR) was sent to each participating laboratory from a central laboratory (JFE, ISREC, Epalinges). The cells were tested with each laboratory's own assay system to determine the linearity and plating efficiency of the cell line. The effects of adriamycin and cisplatin were also tested at several concentrations. The results of the dose-response curves were somewhat different between individual laboratories. The overall results were remarkably reproducible from experiment to experiment. The results with cisplatin showed the dependence of this drug's effects on the culture medium used. These quality control studies have pointed out several methodological questions, which individual laboratories have taken the initiative to investigate. We conclude that a group of laboratories using CFC assays can rapidly provide reliable drug screening results.

MODULATION OF EXPRESSION OF CLASS I MHC GENES IN RODENT CELLS TRANSFORMED BY HUMAN ADENOVIRUSES WHICH DIFFER IN THEIR ONCOGENIC POTENTIAL.

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Relative levels of MHC class I mRNAs and proteins have been determined in a range of human Adenovirus (Ad)-transformed rodent cell lines, in hamster tumours induced by Ad-transformed cells and in cells derived from such tumours. Results obtained show that cellular transformation by highly oncogenic Ad12 completely abrogates expression of class I MHC genes, whereas transformation by non-oncogenic Ad2 or Ad5 results in no significant reduction of class I expression.

Since co-recognition of viral antigen and self-MHC determinants is required for attack by cytotoxic T lymphocytes, this modulation of MHC gene expression may allow tumour cells to evade immune surveillance in the host. A very low level of class I mRNA was found in Ad12-induced hamster tumours. Interestingly, in hamster tumours induced by Ad5-transformed cells, relatively high levels of class I mRNA were detected in actively growing solid tumours.

Studies on the levels of nuclear class I pre-mRNA and on the mechanism of transcription of class I genes in Ad-transformed cells have also been performed.

ASSOCIATION OF DIET AND SEX HORMONES IN RELATION TO BREAST CANCER

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