FIE GROWTH RATE OF HUMAN TUMOUR XENOGRAFTS MEASURED IN NUDE MICE BY IN VIVO CAST-MODELLING

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Athymic nude mice (Fogh et al. 48, 229-239, 1980) are in widespread use as hosts to human tumour xenografts. Growth kinetics are hard to study because calliper measurements take no account of irregular tumour shape, whatever computation is applied (Steele,G.G. Growth Kinetics of Tumours, Oxford University Press, 1977). A snap-setting alginate dental moulding gel (Alginoplast, Bayer) allows accurate impressions of tumour and body-wall to be taken repeatedly over time from live, unanaesthetised mice. From the moulds thus observed, secondary casts of controlled-density dental modelling plaster are taken as permanent records and tumour volume inferred from their weight. The technique was tested by quintiplicate measurements of the same tumour at weekly intervals, yielding mean weights whose S.D. lay in the range 4 - 10% of mean. Week-on-week increases in tumour size can be detected with 99% confidence.

FIE RAT CELL POPULATIONS PERSISTING IN HUMAN TUMOUR CELL LINES FROM NUDE RAT XENOGRAFTS.

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Of 78 human cancers inoculated into nude rats (rnu/rnu) 12 grew as tumour xenografts. Among the 5 of these which grew as tissue culture cell lines, 2 (GYL renal carcinoma-Matthews et al., Urol. Res. 10, 293-299, 1982; WAD pancreatic carcinoma-unpublished) contain populations of rat connective tissue cells. Whereas nude mouse stromal cells normally seen in early tissue culture of human tumour xenografts disappear after a few passages in vitro, the rat stromal cells are clonable and perpetual over 30 passages. Cloned human kidney carcinoma (GYL) cells are tumourigenic in nude mice but no tumours have arisen from rat cells cloned from the same mixed population. Mixed cell injectates yield tumours from which both cell types reappear in tissue culture. Human pancreatic carcinoma (WAD) cells could not be grown in tissue culture independently of rat cells, which came to predominate with rising subculture number. Rat cells from both sources have the morphology of fibroblasts and are diploid (40XY), but standard techniques for preparing human metaphase spreads may mask their presence. These cells are best detected in tissue culture since xenograft histology does not readily distinguish between mouse, rat and human stroma

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FÜR CHEMILUMINESCENCE OF PMNG AND TUMOUR CELLS

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Phagocytes recognise and degrade tumour cells. For these processes, interaction between effector and target cell membranes is required. Very active oxygen species are among the killing mechanisms. There is a connection between the production of superoxide derivatives with light production, so called chemiluminescence (CL).

Observations suggest that the surface character of tumour cells with different metastatic capacity differ from each other. We studied the chemiluminescence of PMNG and Lewis lung tumour cells with high (LLT-HH) and unchanged metastatic capacity (LLT). Results indicated that the CL of PMNG was higher than that of tumour cells. No differences were found for the CL of LLT-HH and PMNGs.
