PART 1 : ABSTRACTS OF MEMBERS' PAPERS

Monday 7 April

CELL MEDIATED IMMUNE REACTIONS AGAINST RAT TUMOUR CELLS DETECTED BY *IN VITRO* MICROCYTOTOXICITY ASSAYS. M. ZÖLLER, A. M. DICKINSON and M. J. EMBLETON, Cancer Research Campaign Laboratories, University of Nottingham.

Rats immune to one of 6 syngeneic tumours with individually distinct tumour associated rejection antigens, or rats bearing growing tumours were tested for cell mediated immunity to their own or other tumours in comparison with normal control rats using a microcytotoxicity assay. Lymph node cells (LNC) were tested at ratios of 2000, 1000, 500 and 250 per tumour target cell. In most cases LNC from immune rats were cytotoxic specifically for the immunizing tumour with little cross-reactivity at high LNC ratios, although specific cytotoxicity was diminished at low ratios. LNC from 3–16 day tumour bearers were completely cross-reactive at high ratios but showed some tumour specificity at low ratios. The cross-reactivity at high ratios disappeared later in tumour growth, at a stage where tumour-specific reactivity was still detectable. The results indicate that rats of different immune status may have lymphoid cells reactive against antigens with different specificities or other (nonspecific) effector cells at various ratios, and these findings are relevant to the recent controversy on the use of microcytotoxicity tests for detecting immune reactions against human tumours.

SEPARATION OF SUBPOPULATIONS OF RAT LYMPH NODE CELLS CYTOTOXIC FOR TUMOUR TARGET CELLS AND CAPABLE OF INHIBITING CYTOTOXICITY *IN VITRO*. R. C. REES and J. BRAY, Cancer Research Campaign Laboratories, University of Nottingham.

Chemically induced rat hepatomata and sarcomata cells express both a tumour specific and embryonic antigen at the cell surface. Cell mediated immune responses towards these antigens can be demonstrated in tumour immune and tumour bearer rats. In addition, multiparous pregnant rats show reactivity towards the embryonic component, and can be demonstrated by *in vitro* lymphocytoxicity tests. The nature of cytotoxic effector cells from rats sensitized against both antigen components has been studied by cell fractionation on nylon wool columns. Cytotoxicity towards tumour associated embryonic antigen(s) is associated with fractions enriched with Ig bearing lymphocytes, and is separable from the cellular response directed towards the tumour specific antigen.

Treatment of cytotoxic lymph node preparations with carbonyl iron removes cellular reactivity towards the embryonic but not tumour specific antigen. In addition, a subpopulation of mainly T lymphocytes, isolated from multiparous pregnant rats, has been isolated and shown to be capable of abrogating cytotoxicity towards tumour cell targets. Such cells may be important in relation to preventing tumour rejection *in vivo*, and the results are discussed in this context.

BIOCHEMICAL IDENTIFICATION OF A PROTEIN ASSOCIATED WITH RAT TUMOUR AND EMBRYO CELL MEMBRANES. M. R. PRICE, Cancer Research Campaign Laboratories, University of Nottingham and R. W. STODDART, Strangeways Laboratory, Cambridge.

Plasma membrane fractions from transplanted 4-dimethylaminoazobenzene induced rat hepatomata and spontaneously arising rat mammary carcinomata were isolated from tumour homogenates by sucrose density gradient centrifugation in a zonal rotor.

Membrane fractions were also prepared from normal tissues (liver, lung, kidney, spleen) as well as from rat embryos. These preparations were dissociated in the presence of non-ionic detergents and membrane proteins were analysed by isoelectric focusing in polyacrylamide gels. A unique protein component (pI $4{\cdot}00 \pm 0{\cdot}05$) was identified, this being common to all tumour membrane preparations and also to foetal membranes obtained at a specific stage of embryogenesis. It was not possible to demonstrate the presence of this component in any of the normal tissues examined. These findings are