TUMOUR SPECIFIC TRANSPLANTATION ANTIGEN (TSTA) AND VIRAL INDUCED ANTIGENS OF A CHEMICALLY INDUCED MURINE FIBROSARCOMA. M.A.Pierotti, G.Carbone, M.P.Colombo, A.Cernuschi, M.Boiocchi and G.Parmiani, Istituto Nazionale Tumori, Milano, Italy.

A rat x mouse cell fusion technique was used to derive a rat monoclonal antibody which was found to react with the immunizing CA-2 tumour, a chemically-induced BALB/c fibrosarcoma. This antibody reacts with a highly restricted virus induced epitope present on CA-2 and expressed also by normal murine fibroblasts infected by N-tropic type-C viruses. We used this finding to challenge the hypothesis that viral antigenic determinants could contribute to the TSTA of CA-2. Accordingly, a panel of normal murine fibroblasts infected by CA-2 derived type-C viruses and expressing the restricted antigen defined by the monoclonal antibody was used in a competition assay of the cell-mediated cytotoxicity by anti-TSTA effector cells against CA-2 targets. Since the viral infected fibroblasts did not inhibit the anti-TSTA reactivity, we concluded that, viral induced antigens do not play a role in the cell-mediated-defined TSTA of CA-2.

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CHARACTERIZATION OF AN ANTIGEN DEFINED BY AN ANTI-HUMAN OSTEOGENIC SARCOMA MONOCLONAL ANTIBODY. M.R.Price, D.G.Campbell and R.W.Baldwin. Cancer Research Campaign Laboratories, University of Nottingham, University Park, Nottingham NG7 2RD.

The murine monoclonal antibody 791T/36 (IgG2b) defines an antigen upon the immunizing human osteogenic sarcoma cell line which is a monomeric integral plasma membrane associated protein with an apparent molecular weight of 72,000. For the characterization of this antigen, 791T cells were labelled by lactoperoxidase catalysed radioiodination and lysed using the non-ionic detergent Nonidet-P 40. Labelled immune complexes were isolated following the addition of 791T/36 antibody and Sepharose-linked Protein A, and these were analysed by sodium dodecyl sulphate polyacrylamide gel electrophoresis and autoradiography.

The 791T/36 defined antigen is a sialic acid containing glycoprotein since neuramidase treatment reduced its apparent molecular weight from 72,000 to 55,000. It also bound to wheat germ agglutinin and was labelled biosynthetically with $^{3}$H-glucosamine. The antigen displayed resistance to proteolytic enzymes although the molecule was cleaved with relatively high concentrations of chymotrypsin and papain. The latter liberated an antigenically active fragment with a molecular weight of 52,000.

These studies provide the basis for the analysis of 791T/36 defined antigens on human tumours and mitogen stimulated peripheral blood mononuclear cells which are known to react with this antibody.

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COMPARATIVE STUDY OF THE AUTORADIOGRAPHIC AND THE SCINTILLOMETRIC METHOD FOR THE DETECTION OF DNA REPAIR SYNTHESIS. E.C. Puri and D. Müller. CIBA-GEIGY Limited, CH-4002 Basle, Switzerland.

The scintillometric method has the advantage of providing results more rapidly than the autoradiographic method, but is considered to be less precise. Hitherto, preference has been given to the use of fibroblasts for scintillometric investigations, as it was believed that hepatocytes were unsuitable for this procedure.

The test substances used were aristolochic acid and 3-methyl-4-nitropyridine 1-oxide. The comparative investigations of the suitability of the two systems were performed on both fibroblasts and hepatocytes. The two cell types proved to be equally well suited. The distinctive features of the two systems are compared. The advantages of the scintillometric method are its rapidity and the fact that it permits the quick determination of a suitable spectrum of concentrations.