

《招待講演 III》

Diagnosis and Therapy for Solid Tumors with Radiolabeled Antibodies and Immune Fragments

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Antibodies which are directed against human tumor associated antigens can potentially be used as carriers of radioactivity for in vivo diagnosis (radioimmunodetection) or treatment (radioimmunotherapy) of tumors, including colon, hepatoma, cholangiocarcinoma and melanoma. Murine monoclonal antibodies (MOAB), produced by the hybridoma technique of Kohler and Milstein, are replacing conventional heterosera as sources of antibodies because MOAB can be produced in large quantities as reproducible reagents with homogeneous binding properties.

We have studied human melanoma using MOAB IgG and Fab fragments that recognize the human melanoma associated antigens P97 and high-molecular-weight antigen. Both antigens are found in the membrane of melanomas as much larger concentrations than in normal adult tissues. We have performed radioimmunodetection studies with whole immunoglobulin and have detected 88 of lesions 1.5 cm.

We have used Fab fragments for radioimmunotherapy and have found that large doses of radiolabeled antibodies (up to 342 mCi) can be repetitively given to patients without excessive end-organ toxicity. Two of three patients treated with high-dose radiolabeled antimelanoma Fab showed an effect from the treatment. Although both technical and biologic problems remain. The use of promise as a new therapeutic approach to solid tumors that are resistant to conventional therapy (Cancer Treat. Rep., 68: 317-328, 1984).