

Radioimmunosintigraphy of colorectal cancer with technetium-99m-labeled murine anti-carcinoembryonic antigen monoclonal antibody in athymic nude mice

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Technetium-99m (Tc-99m) is an ideal radionuclide for clinical use. A murine monoclonal antibody (Mab) designated F33-104 binds to specific parts of carcinoembryonic antigen (CEA). In the present study, intact Mab F33-104 was labeled with Tc-99m, and the immunoreactivity and biodistribution of Tc-99m-labeled F33-104 were studied in athymic nude mice bearing human colorectal cancer xenografts. Mab F33-104, reduced under optimal conditions, was quickly and stably tagged with Tc-99m without loss of immunoreactivity. Higher tumor uptake of Tc-99m-labeled F33-104 was noted in the biodistribution, resulting in a higher localization index and specific-to-non-specific tumor ratio than those of radioiodinated F33-104. These results suggest the potential of Tc-99m-labeled Mab F33-104 for the radioimmunoimaging of colorectal cancer.

Key words: Tc-99m-labeled Mab F33-104, CEA, radioimmunosintigraphy