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Experimental radioimmunotherapy with ^{186}Re-MAG3-A7 anti-colorectal cancer monoclonal antibody: Comparison with ^{131}I-counterpart

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A murine IgG_1 against a *Mr* 45 kD tumor-associated glycoprotein in human colorectal cancer, A7, was radiolabeled with ^{186}Re by a chelating method with a mercaptoacetyltriglycine (MAG3). Its specific activity was 119 MBq/mg, which would be high enough for a therapeutic purpose, and its immunoreactivity was preserved well as was ^{131}I-A7 labeled by the chloramine-T method. Growth of human colon cancer xenografts, 9.14 ± 0.44 mm in diameter, in nude mice was significantly suppressed by an intravenous dose of 4.48 MBq of ^{186}Re-A7. The therapeutic outcome with ^{186}Re-A7 was better than that with 4.63 MBq of ^{131}I-A7. Toxicity of treatments assessed by body weight change was similar with both conjugates. These results are likely caused by the tumor size and more favorable physical properties of ^{186}Re than those of ^{131}I.

Key words: radioimmunotherapy, ^{186}Re, colon cancer xenograft