

## Localization of colorectal carcinoma by rhenium-188-labeled B72.3 antibody in xenografted mice

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In order to evaluate the feasibility of  $^{188}\text{Re}$ -labeled antibodies for radioimmunotargeting, monoclonal antibody B72.3, recognizing TAG-72, expressed on the surface membranes of colorectal cancer cells, was directly labeled with  $^{188}\text{Re}$ , obtained from a  $^{188}\text{W}/^{188}\text{Re}$  generator, using stannous tartrate and compared with  $^{125}\text{I}$ -labeled B72.3. As a control, a human IgG was also radiolabeled with  $^{188}\text{Re}$  and  $^{125}\text{I}$ . Prepared antibodies for  $^{188}\text{Re}$  labeling could be stored as kits. Biodistribution was determined in nude mice inoculated with human colorectal carcinoma LoVo. Labeling efficiency and immunoreactivity of  $^{188}\text{Re}$ -B72.3 were 80.3% and 64.7%, respectively.  $^{188}\text{Re}$ -B72.3 localized specifically in the LoVo tumors. Although the absolute tumor accumulation level of  $^{188}\text{Re}$ -B72.3 was lower than  $^{125}\text{I}$ -B72.3,  $^{188}\text{Re}$ -B72.3 demonstrated higher tumor-to-blood contrast than the  $^{125}\text{I}$ -labeled counterpart,  $2.04 \pm 0.44$  vs.  $1.05 \pm 0.28$  at 96 hours, because of fast clearance from the blood.  $^{188}\text{Re}$ -B72.3 seemed efficient for the imaging and therapy of colorectal carcinoma.

**Key words:** rhenium-188, xenograft, B72.3, colorectal carcinoma