

Factors Affecting the Response of Mice to Transplantation of Tumor Cells After Continuous Irradiation with Low Dose-rate Gamma-rays

Daisaku TAKAI, Kazuaki ICHINOHE, Satoshi TANAKA, Junichirou KOMURA

Department of Radiobiology

Abstract

We have previously shown that the transplantability of a murine ovary granulosa cell tumor cell line, OV3121, was significantly enhanced in syngeneic B6C3F₁ mice continuously irradiated with low dose-rate (20 mGy/22h/day) gamma-rays to a total accumulated dose of 8000 mGy. In the present study, we show that the transplantability of 3LL cells derived from Luis Lung carcinoma was not altered in male C57BL/6 mice exposed to the same irradiation regimen. In addition, there was no effect on transplantability of OV3121 cells when co-transplanted with CCR5-positive lymphocytes in B6C3F₁ mice exposed to the same irradiation regimen.

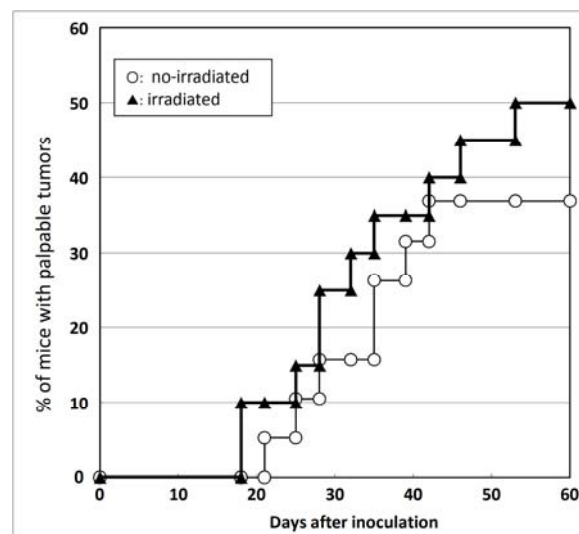


Fig. 1 Comparison of tumor transplantability. 3LL cells were inoculated (200 cells/mouse) in irradiated (▲) and non-irradiated (○) male C57BL/6 mice. Mice with palpable tumors were counted to assess transplanted tumor formation.

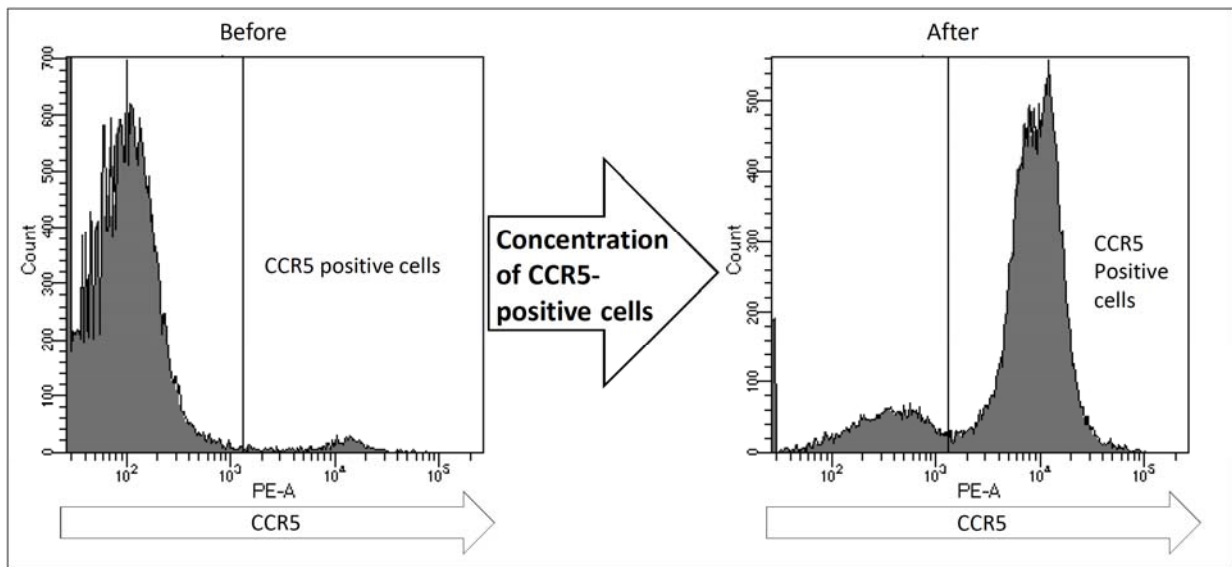


Fig. 2 Concentration of CCR5-positive cells. Splenocytes from female B6C3F1 mice were stained with Rat PE-labeled anti-mouse CCR5 antibody. The labeled cells were captured by anti-PE microbeads using a cell separator. Cells were analysed with a flow cytometer.

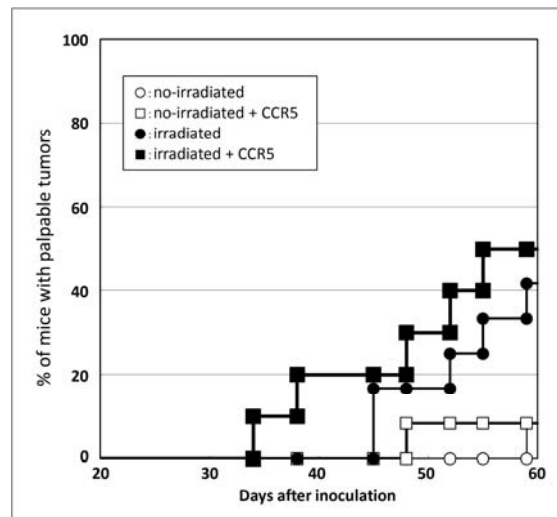


Fig. 3 Comparison of tumor transplantability. 1×10^5 OV3121 cells were inoculated in irradiated (●, ■) and non-irradiated (○, □) B6C3F1 female mice with (□, ■) or without (○, ●) 1×10^5 CCR5 positive lymphocyte co-transplantation. Mice with palpable tumors were counted to assess transplanted tumor formation.