

Analysis of Splenic Lymphocyte Subsets in Mice after Continuous Irradiation with Low-Dose-Rate Gamma-Rays

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Abstract

Female specific pathogen-free (SPF) B6C3F1 mice were irradiated with low-dose-rate (20 mGy/22h/day or 1 mGy/22h/day) γ -rays to compare distribution of splenic lymphocyte subsets with those from age-matched non-irradiated controls. A significant increase in body weights was observed in mice irradiated at 20 mGy/22h/day for approximately 400 days (total accumulated dose of 8000 mGy). However, no difference was observed in mice irradiated at 1 mGy/22h/day for approximately 400 days (total accumulated dose of 400 mGy) compared with the non-irradiated control mice. No remarkable changes of the weight of spleens and the number of spleen cells were observed. The number of splenic CD8⁺ T cells decreased in mice irradiated at 20 mGy/22h/day. The number of splenic CD4⁺ T cells increased in mice irradiated at 1 mGy/22h/day. CD4/CD8 T cell ratios tended to be higher in mice irradiated at both low-dose rates, compared with the non-irradiated control mice. The numbers of CD4⁺CD25⁺T cells and B220⁺ cells were not significantly different between irradiated and non-irradiated control mice.

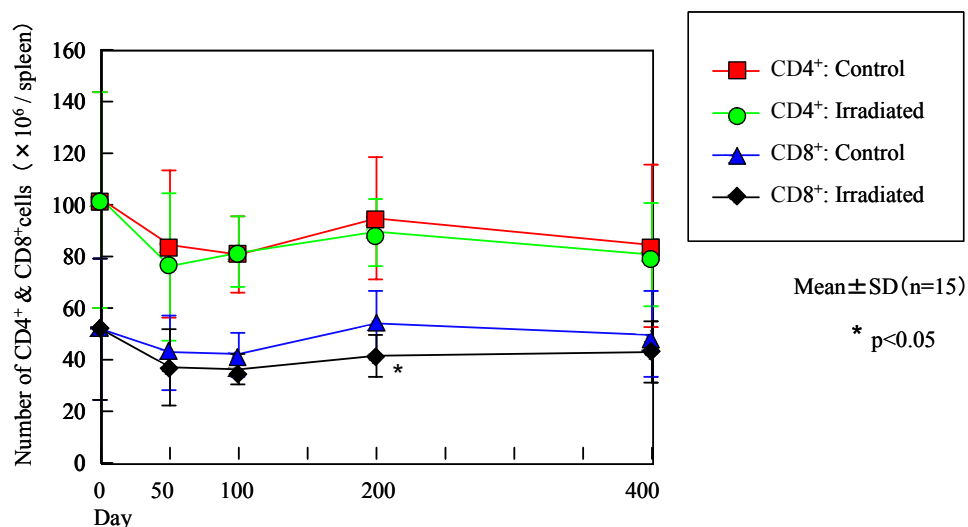


Fig.1 Number of CD4⁺ and CD8⁺T cells in spleen cells from B6C3F1 mice after low-dose-rate(20 mGy/22h/day) gamma-ray irradiation