

Frequencies of Chromosomal Translocation and Clone in Splenocytes from Mice Continuously Irradiated with Low-Dose-Rate Gamma-Rays

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Abstract

Chromosome aberrations were analyzed in splenocytes of female C3H mice exposed from 8 weeks of age to 307, 617 and 720 days with continuous γ -ray irradiation at low-dose rates (LDRs; 1 mGy/22h/day and 0.05 mGy/22h/day). Splenic lymphocytes from irradiated and non-irradiated control mice were cultured for 46h in the presence of LPS, Con A, and 2-ME to obtain metaphase spreads, and translocations were observed under a fluorescent microscope using multiplex-fluorescence *in situ* hybridization (M-FISH) method. Frequencies of translocations in mice exposed to these LDRs were slightly increased from 8 weeks of age to the irradiation periods of 307 and 617 days. However, their frequencies at 617 and 720 days did not differ between LDR irradiations, despite different total doses. Clonal cells were observed at 617 and 720 days in both LDR irradiations.

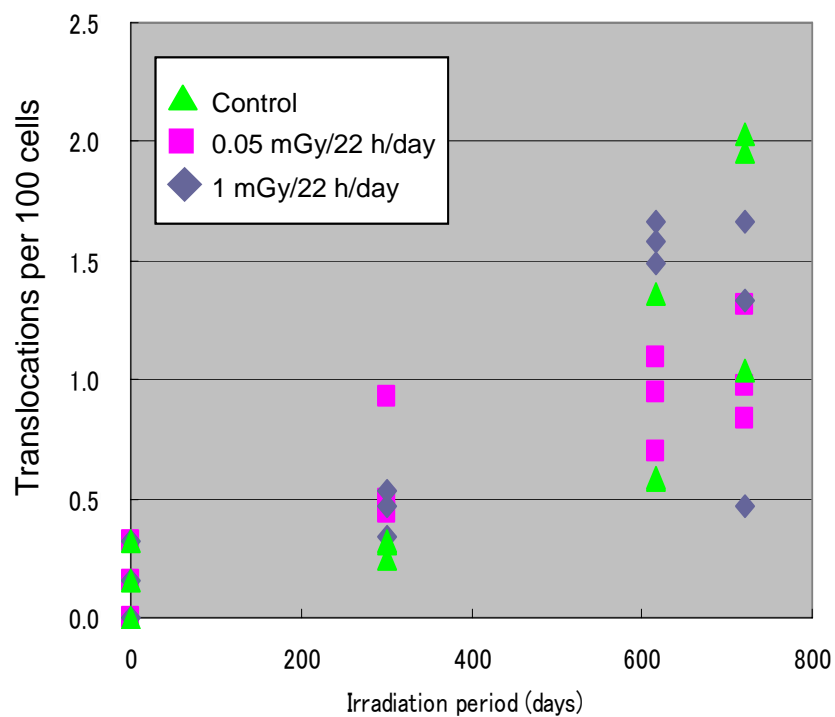


Fig.1 Frequencies of chromosomal translocations in splenocytes from mice continuously irradiated with low-dose-rate gamma-rays

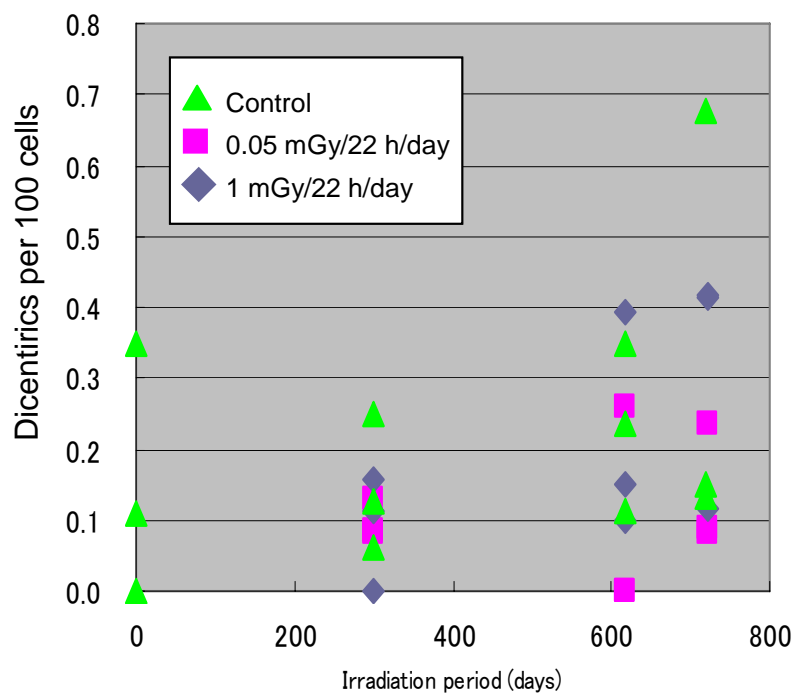


Fig.2 Frequencies of dicentric chromosome in splenocytes from mice continuously irradiated with low-dose-rate gamma-rays