

Effects of *In Utero* Low Dose-rate Gamma-ray Exposure in B6C3F1 Mice
– Preliminary Study (Immunohistochemistry) –

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Abstract

Apoptosis and cell proliferation were analyzed using the TUNEL assay and anti-Ki67 immunostaining, respectively, in brains of murine fetuses irradiated with γ -rays at 770 mGy/min (high dose-rate) on gestation day 13 (total dose: 2000 mGy), at 400 mGy/day (middle dose-rate) from day 0 to day 13 (total dose: 5200 mGy), or at 20 mGy/day (low dose-rate) from gestation day 0 to day 13 (total dose: 260 mGy). Apoptosis was induced by the high and middle dose-rate irradiations but not by the low dose-rate irradiation. Distribution patterns of proliferating cells were disturbed by the high dose-rate irradiation but not by the middle and low dose-rate irradiations. Thus, apoptosis and cell proliferation appear to be appropriate indicators for comparing the effects of high, middle, and low dose-rate irradiation *in utero*.

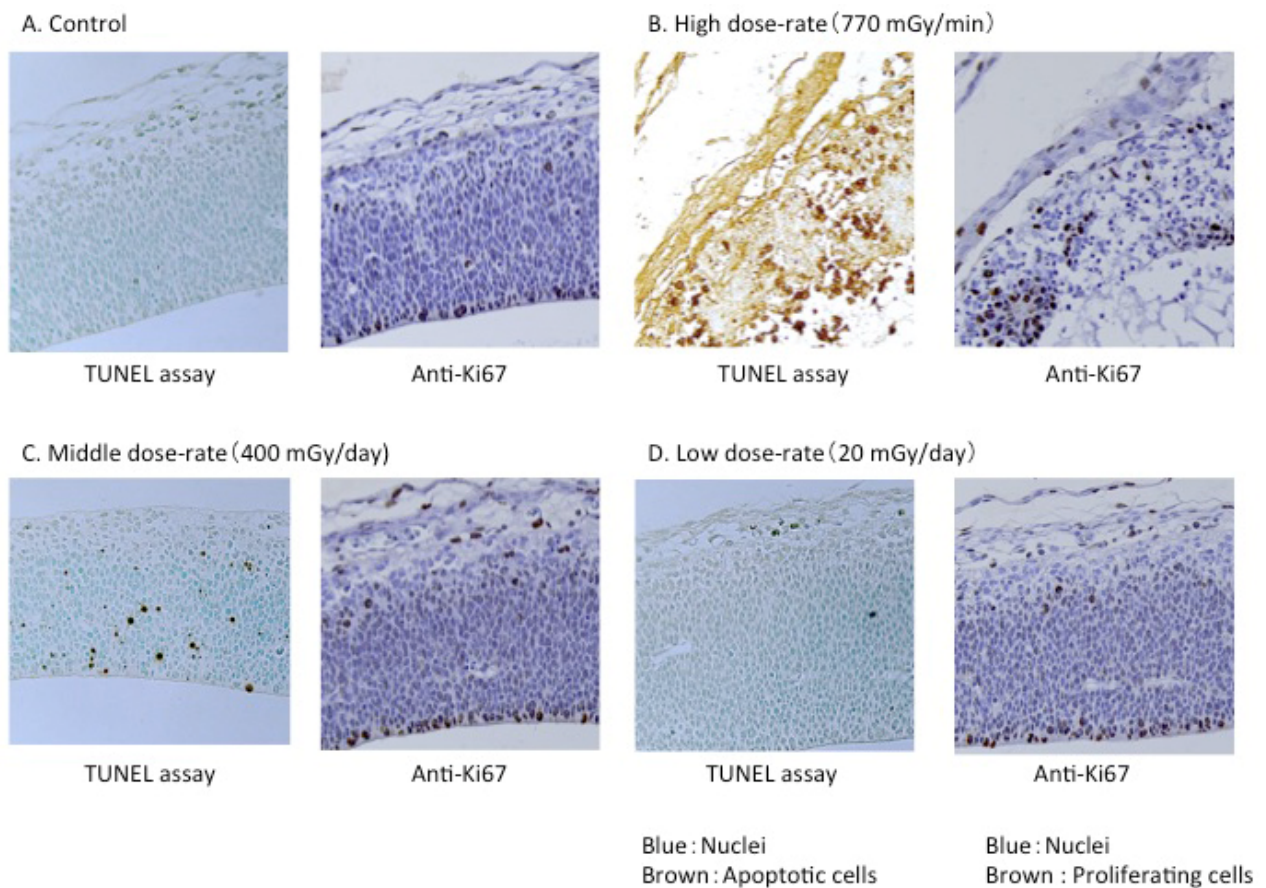


Fig. 1 Effects of high, middle, and low dose-rate irradiations detected by the TUNEL assay and Anti-Ki67 immunostaining in the brain of murine fetuses.