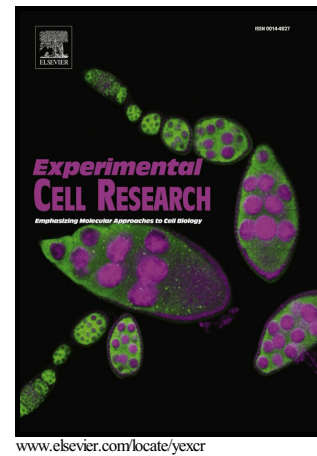


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Genetic and epigenetic changes in clonal descendants of irradiated human fibroblasts

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ABSTRACT

To study delayed genetic and epigenetic radiation effects, which may trigger radiation-induced carcinogenesis, we have established single-cell clones from irradiated and non-irradiated primary human fibroblasts. Stable clones were endowed with the same karyotype in all analyzed metaphases after 20 population doublings (PDs), whereas unstable clones displayed mosaics of normal and abnormal karyotypes. To account for variation in radiation sensitivity, all experiments were performed with two different fibroblast strains. After a single X-ray dose of 2 Gray more than half of the irradiated clones exhibited radiation-induced genome instability (RIGI). Irradiated clones displayed an increased rate of loss of

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