

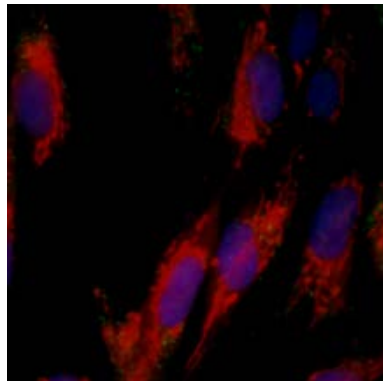
Evaluation and assessment of cancer risks associated with exposure to low-dose radiation

Mitochondrial dysfunction associated with radiation-induced tumorigenesis

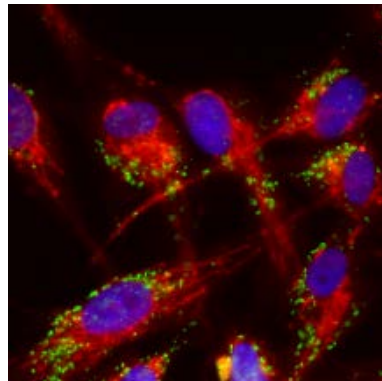
Background: According to an epidemiological study of the Life Span Study Cohort from the atomic bomb survivors of Hiroshima and Nagasaki, humans exposed to ionizing radiation showed a dose-dependent increase in cancer risk. However, epidemiological studies require a large sample size to statistically detect the risks of low-dose radiation; thus, the risks associated with low dose rate radiation remain unclear.

Radiation-induced mitochondrial damage in human cells

Non-irradiated cells

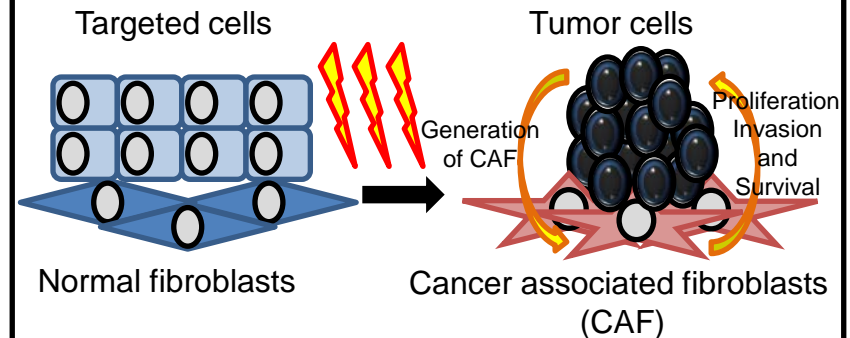


Irradiated cells



Green color shows damaged mitochondria in X-ray irradiated human cells.

Role of tumor microenvironment in radiation-induced cancer



Mitochondrial oxidative stresses may be associated with the development and progression of radiation-induced cancer through generation of CAF.

For humans

Contribution for education in radiation protection