



**Figure S1.** A549 cells were exposed to X-ray with dose ranging from 1 to 9 Gy, and the cell survival was determined by colony formation assay. The cells were prepared in T12.5 bottle flasks with  $10^6$  cells. Survival fractions for each dose were averaged from 7 repeated experiments. Error bars represents the standard errors. Solid line is the fitted regression line of linear Quadratic (LQ) model,  $S = \exp(-\alpha \times D - \beta \times D^2)$ , where  $S$  is the surviving fraction,  $D$  is the dose in Gy, and  $\alpha$  ( $\text{Gy}^{-1}$ ) and  $\beta$  ( $\text{Gy}^{-2}$ ) are the fitting parameters. Using the  $\alpha$ ,  $\beta$  parameters 10% surviving dose ( $D_{10}$ ) and 1% surviving dose ( $D_1$ ) were calculated. Parameters  $\alpha$ ,  $\beta$  and  $D_{10}$ ,  $D_1$  are listed in the Table S1.

**Table S1.** The LQ model was employed to calculate fitting parameters:  $\alpha$ ,  $\beta$  and  $D_{10}$ ,  $D_1$  based on the survival rate curve present at Figure S1.

Dose (Gy)	$\alpha$	$\beta$	$D_{10}$	$D_1$
X-ray	$0.328 \pm 0.055$	$0.044 \pm 0.034$	$4.42 \pm 0.35$	$7.18 \pm 0.67$