

Figure S1. Clonogenic survival curves of eight human breast cancer cell lines against $X$-ray and proton irradiation. Data are presented as the mean $\pm$ SEM of three independent experiments. Curves were fitted with linear quadratic model. The differences are evaluated by a two-way ANOVA; *p $<0.05$; *** $p<0.001$. Dashed lines indicate $\mathrm{SF}=0.1$.

## A

B


Figure S2. Scatter plot for correlation between RBE10 values and CDK4 mRNA expression in human BC cell lines (A) and cyclin D1 mRNA expression in human NSCLC cell lines (B). Log2 transformed RMA values were obtained from CCLE database. Pearson correlation coefficient (r) between gene expression and proton RBE10 across all samples were presented.

