



Supplemental Figures

Supplementary 1

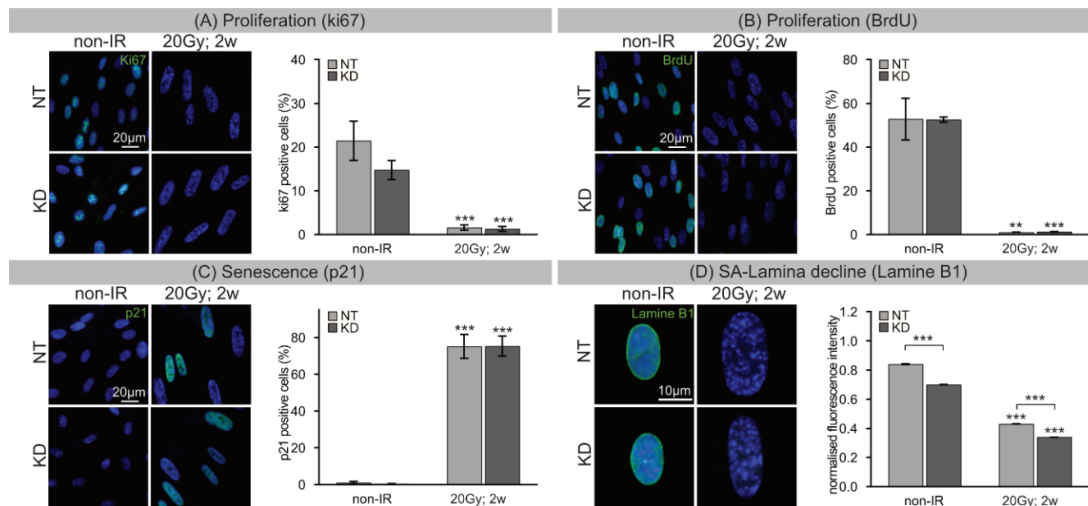


Figure S1. (A) Proliferation (ki67). IFM micrographs of ki67 staining and quantification of ki67+ cells in NT and KD fibroblasts of non-IR controls and following 20Gy (2w post-IR). (B) Proliferation (BrdU). IFM micrographs of NT and KD fibroblasts pulse-labelled with BrdU for 24h and quantification of BrdU+ cells in non-IR controls and following 20Gy (2w post-IR). (C) Senescence (p21). IFM micrographs of p21 staining and quantification of p21+ cells in NT and KD fibroblasts of non-IR controls and following 20Gy (2w post-IR). (D) Senescence-associated Lamina decline (Lamine B1). IFM micrographs and quantification of Lamine B1 stained NT and KD fibroblasts in non-IR controls and following 20Gy (2w post-IR). Lamine B1 was quantified through measurement fluorescence intensity per nucleus and normalized to DAPI signal. Significant statistical difference compared to non-irradiated controls (marked by asterisks alone) or between NT and KD cells (asterisks with square brackets): * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Supplementary 2

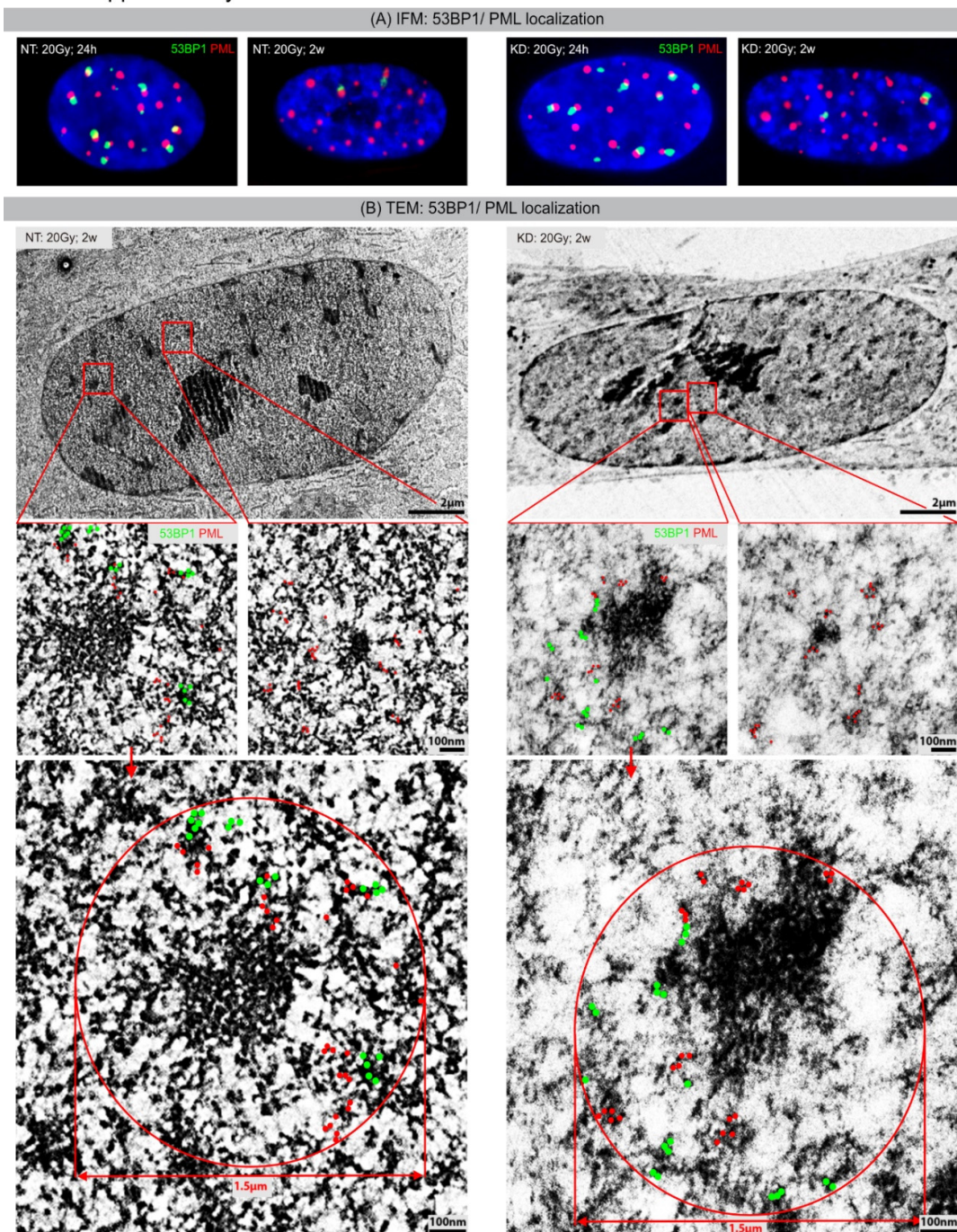


Figure S2. (A) IFM: 53BP1/PML localization. IFM micrographs showing increased co-localization between 53BP1 and PML with increasing time (24h, 2w) following 20Gy. (B) TEM: 53BP1/PML localization. TEM micrographs show gold-labelled PML (6-nm beads) and 53BP1 (10-nm beads) forming DNA-SCARS at periphery of heterochromatic SAHF in NT and KD fibroblasts following 20Gy (2w post-IR). Red marked areas shown in higher magnification; to aid visualization of gold-beads, green and red overlays were added. Red circle shows perimeter of maximum distance from SAHF in which DNA-SCARS were found and quantified.

Supplementary 3

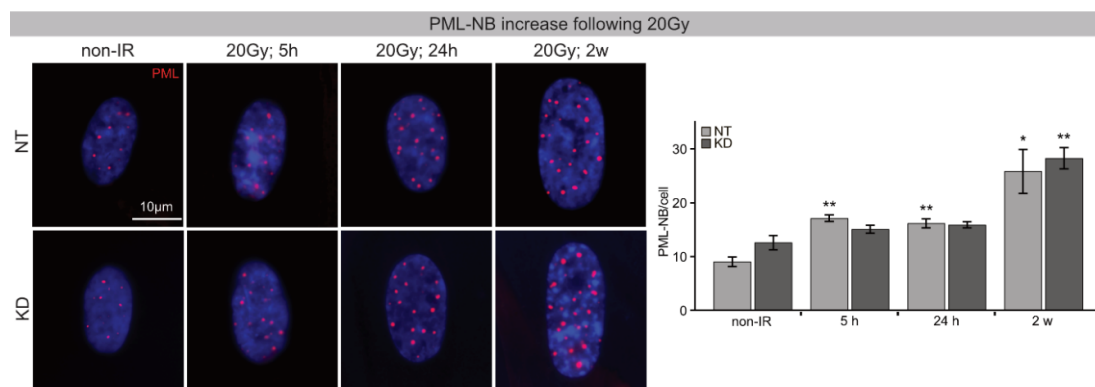


Figure S3. PML accumulation following IR. IFM micrographs of PML staining and PML foci/cell quantification showing increased PML accumulation (5h, 24h, 2w) following 20Gy. Significant statistical difference compared to non-irradiated controls: * $p < 0.05$; ** $p < 0.01$.