Bystander cells

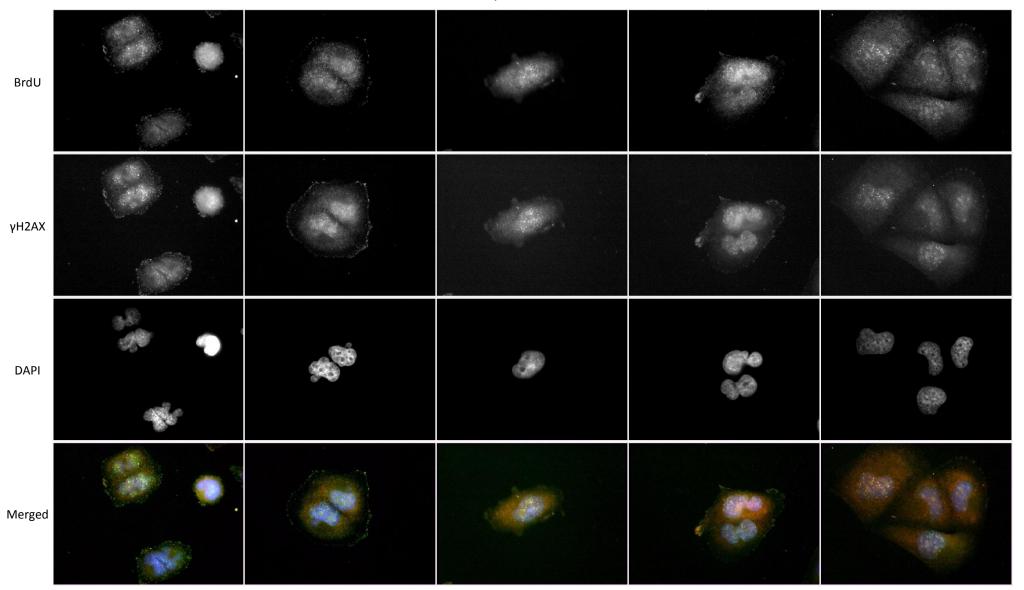


Figure S1A. Immunofluorescence microscopy of BrdU foci (red) and γH2AX foci (green) at sites of stalled replication in bystander cells. Samples were counter-stained with DAPI (blue). See Figure 1A for details. Each image is 162 μm wide.

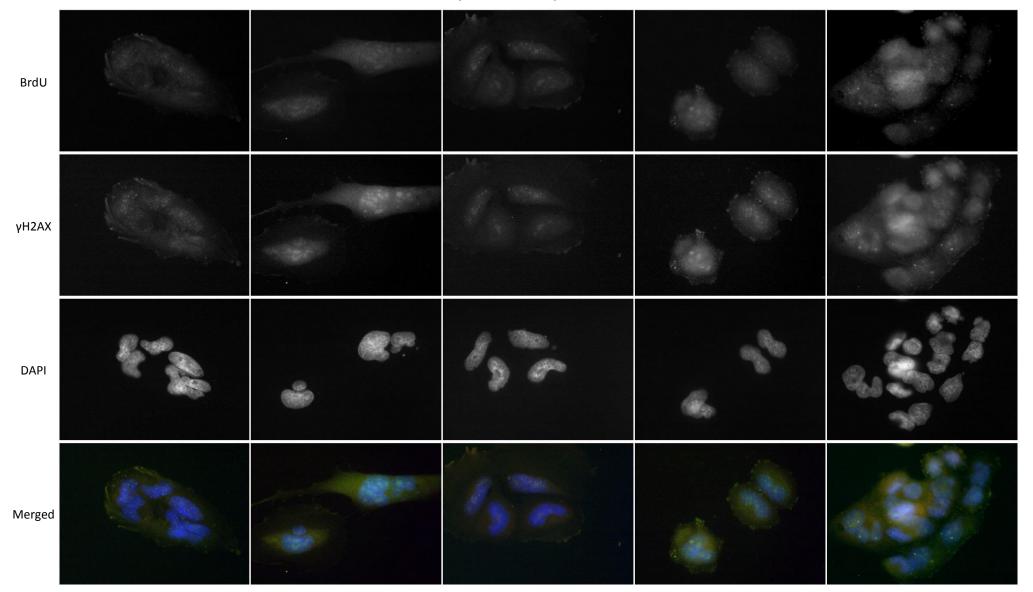


Figure S1B. Immunofluorescence microscopy of BrdU foci (red) and γH2AX foci (green) at sites of stalled replication in bystander cells treated with Filipin. Samples were counter-stained with DAPI (blue). See Figure 1B for details. Each image is 162 μm wide.

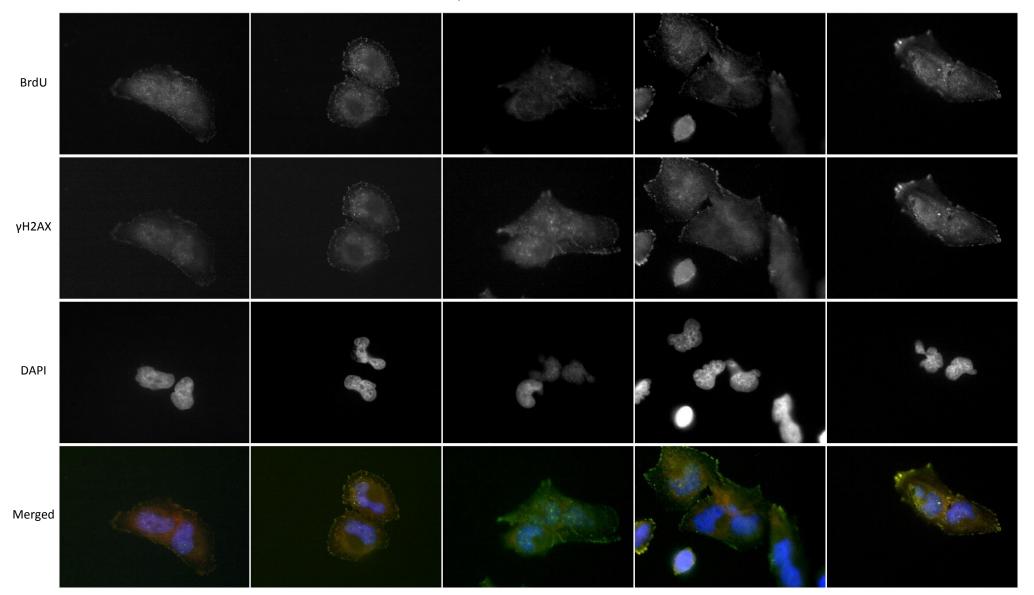


Figure S1C. Immunofluorescence microscopy of BrdU foci (red) and γH2AX foci (green) at sites of stalled replication in bystander cells treated with DMSO. Samples were counter-stained with DAPI (blue). See Figure 1B for details. Each image is 162 μm wide.

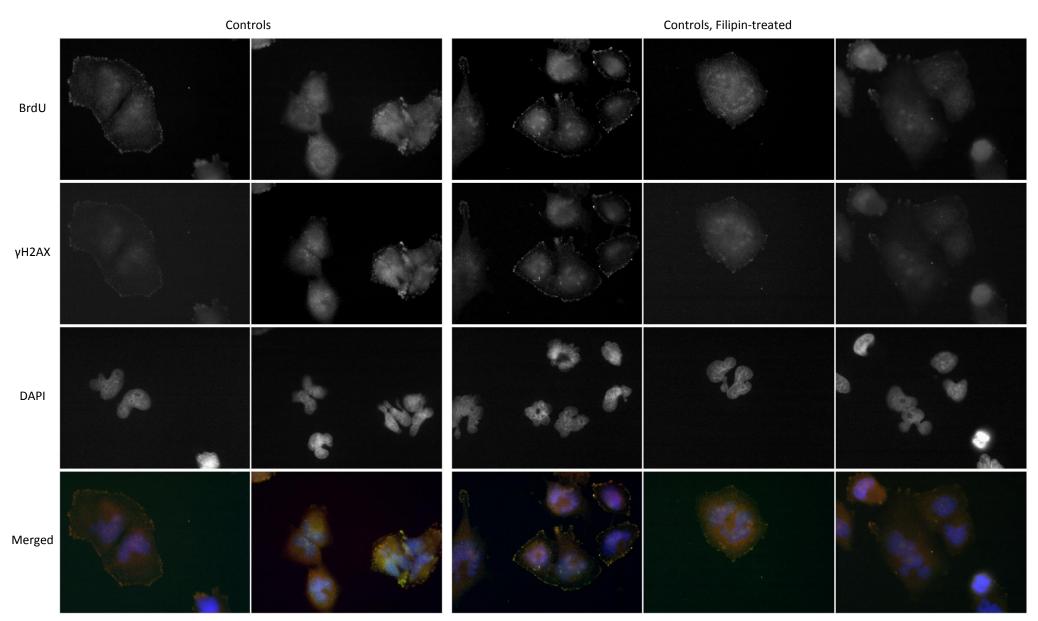
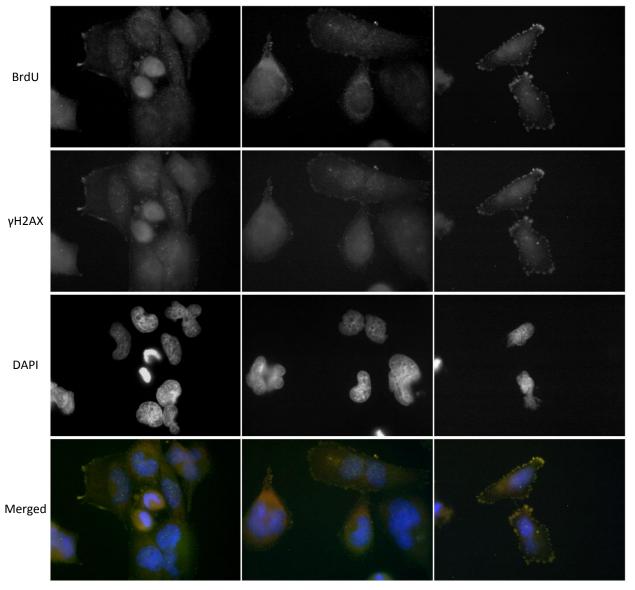


Figure S1D. Immunofluorescence microscopy of BrdU foci (red) and γH2AX foci (green) at sites of stalled replication in untreated and Filipin-treated control cells. Samples were counter-stained with DAPI (blue). See Figure 1B for details. Each image is 162 μm wide.

## Controls, DMSO-treated



**Figure S1E.** Immunofluorescence microscopy of BrdU foci (red) and γH2AX foci (green) at sites of stalled replication in DMSO-treated control cells. Samples were counter-stained with DAPI (blue). See Figure 1B for details. Each image is 162 μm wide.

Bystander cells

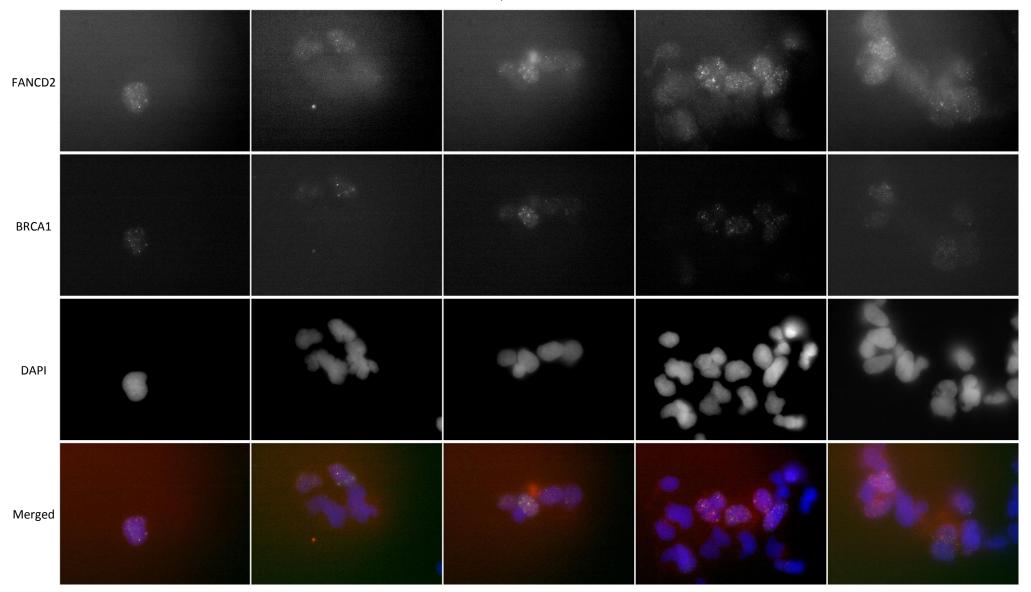


Figure S2A. Co-immunofluorescence microscopy of FANCD2 foci (red) and BRCA1 foci (green) at sites of stalled replication in bystander cells. Samples were counter-stained with DAPI (blue). See Figures 2A and 3A for details. Each image is 97 μm wide.

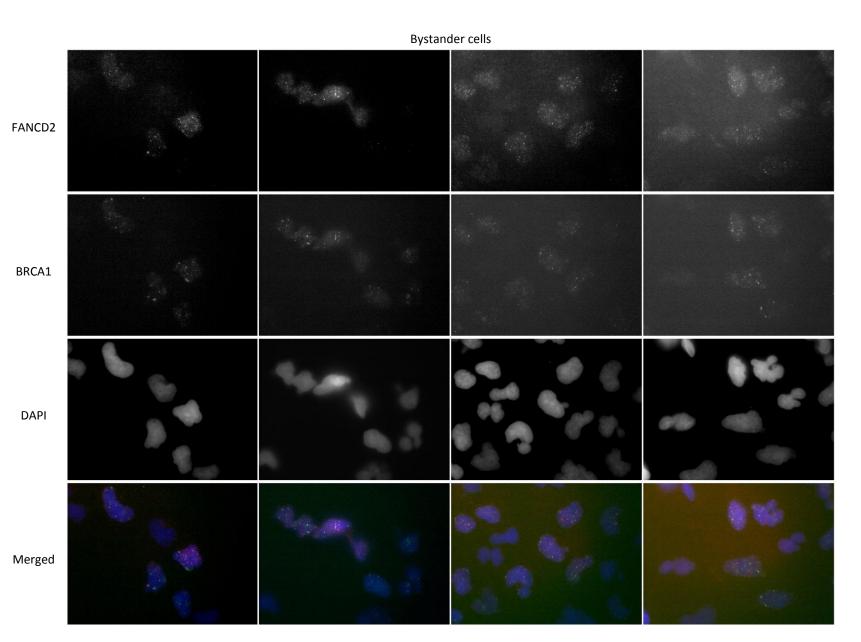
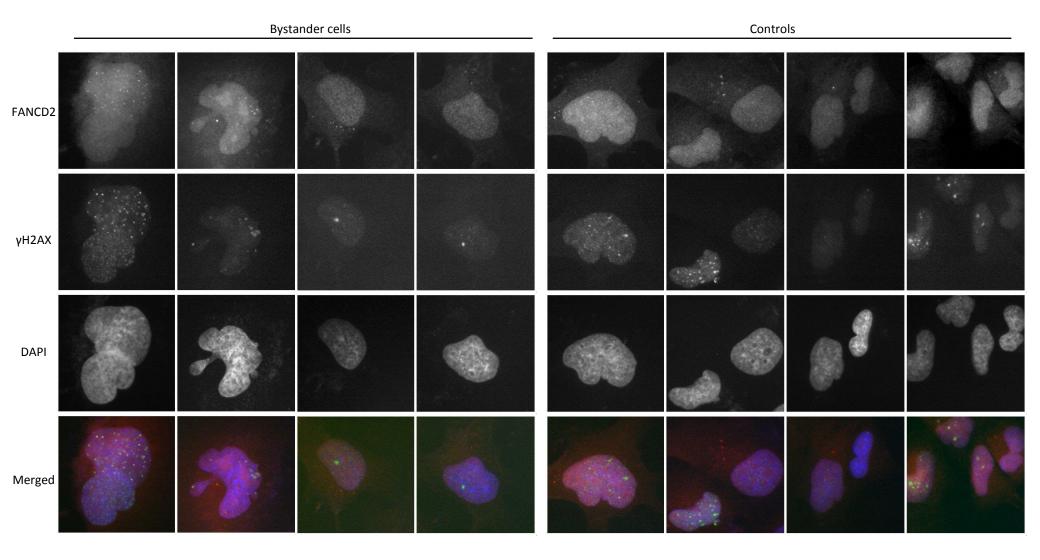
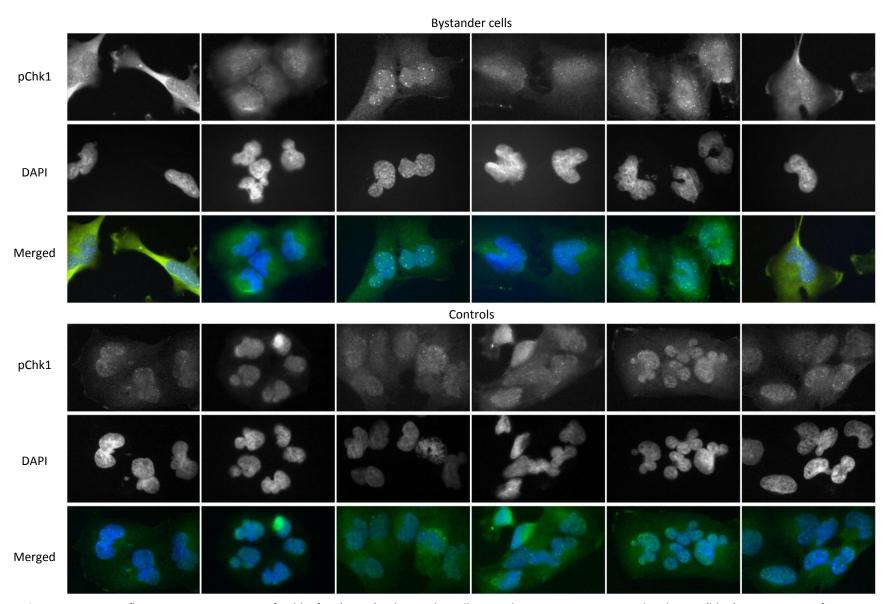


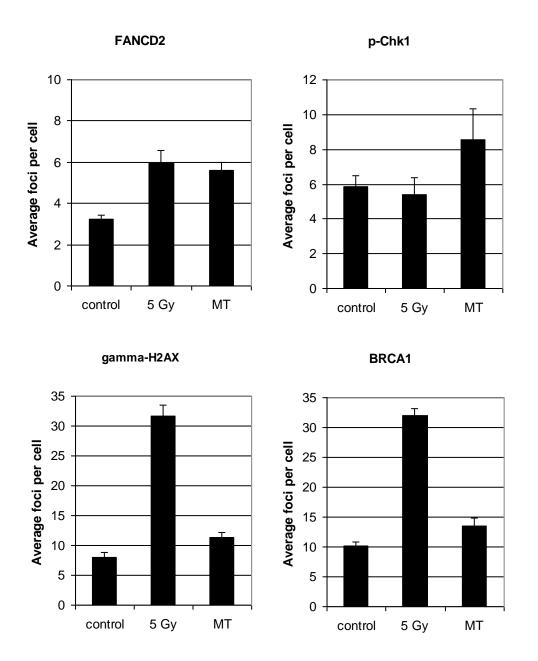
Figure S2A, cont'd. Co-immunofluorescence microscopy of FANCD2 foci (red) and BRCA1 foci (green) at sites of stalled replication in bystander cells. Samples were counterstained with DAPI (blue). See Figures 2A and 3A for details. Each image is 97 μm wide.



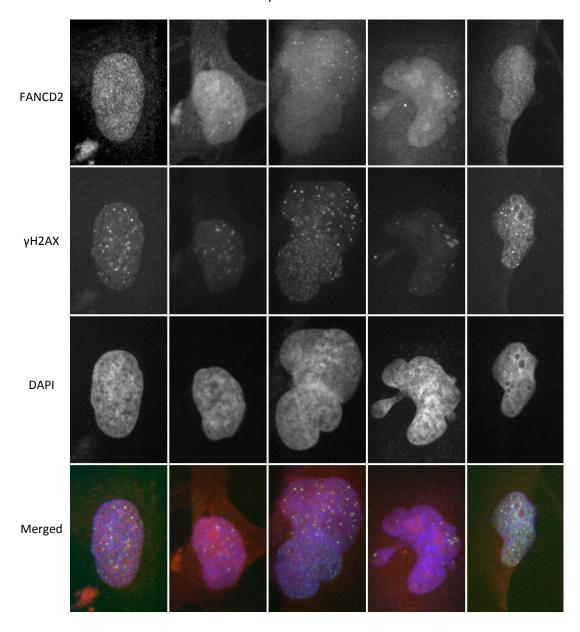
**Figure S2B.** Co-immunofluorescence microscopy of FANCD2 foci (red) and γH2AX foci (green) at sites of stalled replication in bystander cells. Samples were counter-stained with DAPI (blue). Each image is 38 μm wide.



**Figure S3.** Immunofluorescence microscopy of pChk1 foci (green) in bystander cells. Samples were counter-stained with DAPI (blue). See Figure 5A for details. Each image is 57  $\mu$ m wide.



**Figure S4.** Average number of p-Chk1, FANCD2, BRCA1 and gamma-H2AX foci per T98G cell in foci-bearing cells only in control, 5 Gy-irradiated and bystander cell cultures treated with medium from 2 Gy-irradiated cells. Foci data were collected from a total of 348 control, 333 bystander cells and 305 directly irradiated cells in two experiments. The analysis includes foci bearing cells only. Error bars show the standard errors.



**Figure S5.** Immunofluorescence microscopy of FANCD2 foci (red) and  $\gamma$ H2AX foci (green) in bystander cells. Samples were counter-stained with DAPI (blue).