

Supplementary Materials

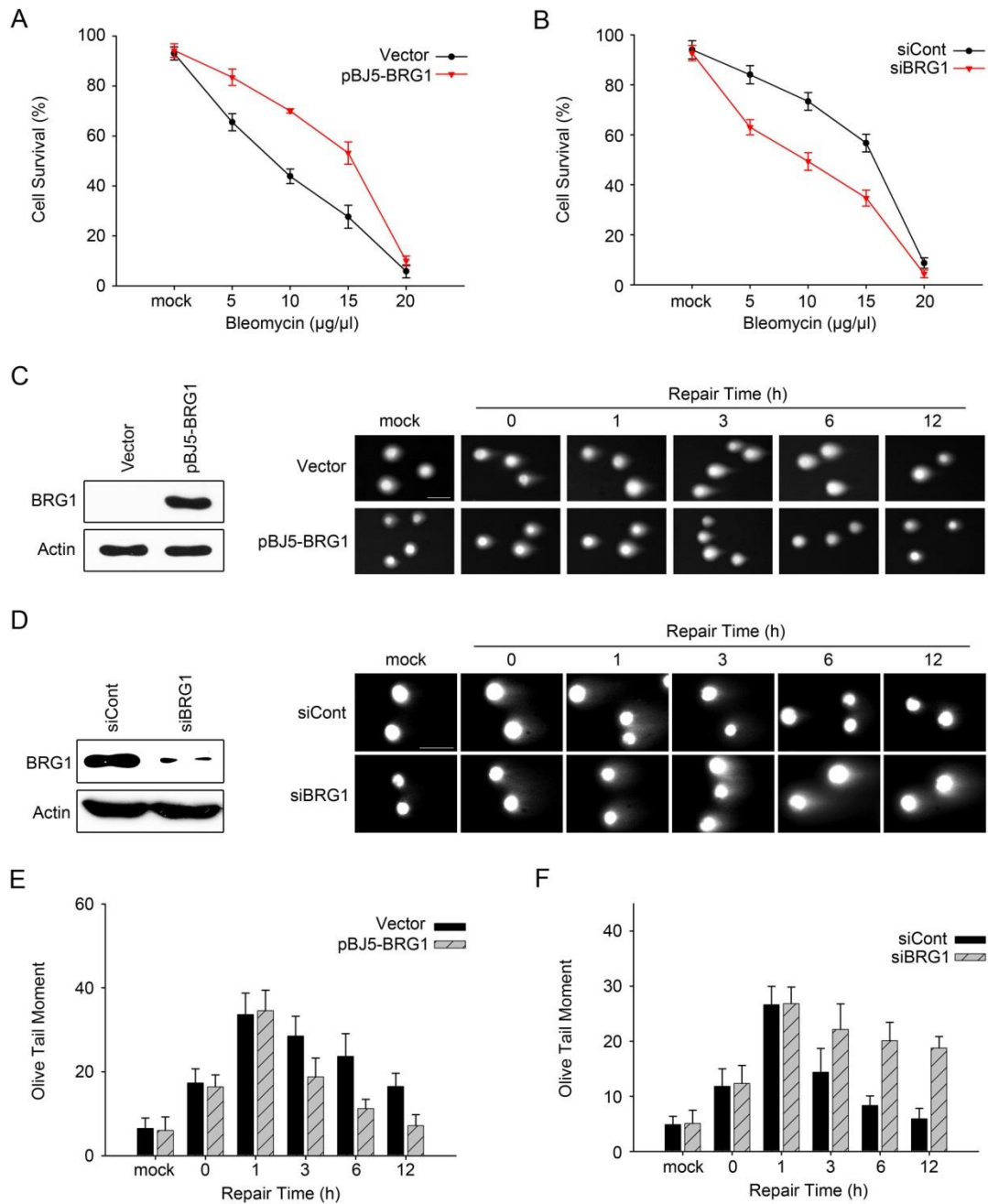


Figure S1. BRG1 deficiency increases cell sensitivity to bleomycin. (A) SW13 cells transfected with pBJ5-BRG1 or empty vector and (B) U2OS cells transfected with BRG1 siRNA or control siRNA were mock-treated or treated with increasing concentrations of bleomycin. A cell colony formation assay was performed as described in the Materials and Methods section. siCont: control siRNA. (C) SW13 cells were transfected with pBJ5-BRG1 or empty vector, and BRG1 expression was

assessed by immunoblotting. The representative images of the cell comet assay described in Figure 1E are shown on the right. Scale bar = 50 μ m. **(D)** U2OS cells were transfected with BRG1 siRNA or control siRNA for 48 h, and BRG1 expression was analysed by immunoblotting. Representative images of Figure 1F are shown on the right. Scale bar = 50 μ m. **(E, F)** SW13 cells transfected with pBJ5-BRG1 or empty vector and U2OS cells transfected with BRG1 siRNA or control siRNA were exposed to bleomycin. DSBs in cells were detected by a comet assay as described in Figure 1E, F.

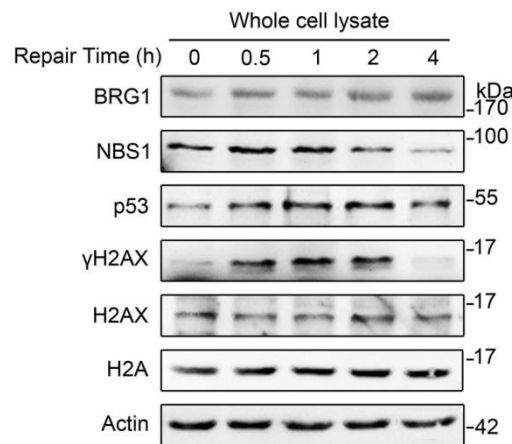


Figure S2. The expression of DDR proteins in response to DNA damage. A total of 10% of U2OS cells treated as in Figure 2A was lysed with RIPA buffer to obtain whole cell lysates and was analysed by immunoblotting.

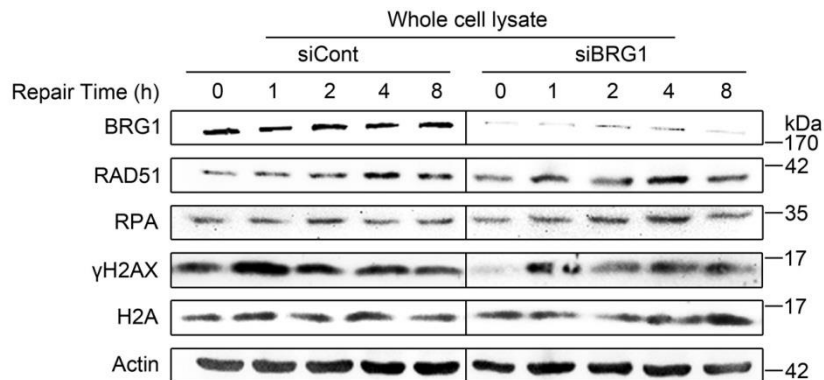


Figure S3. BRG1 knockdown had little effect on DDR protein expression. A total of 10% of U2OS cells treated as in Figure 5D was lysed by RIPA to obtain whole cell

lysates and was analysed by immunoblotting.

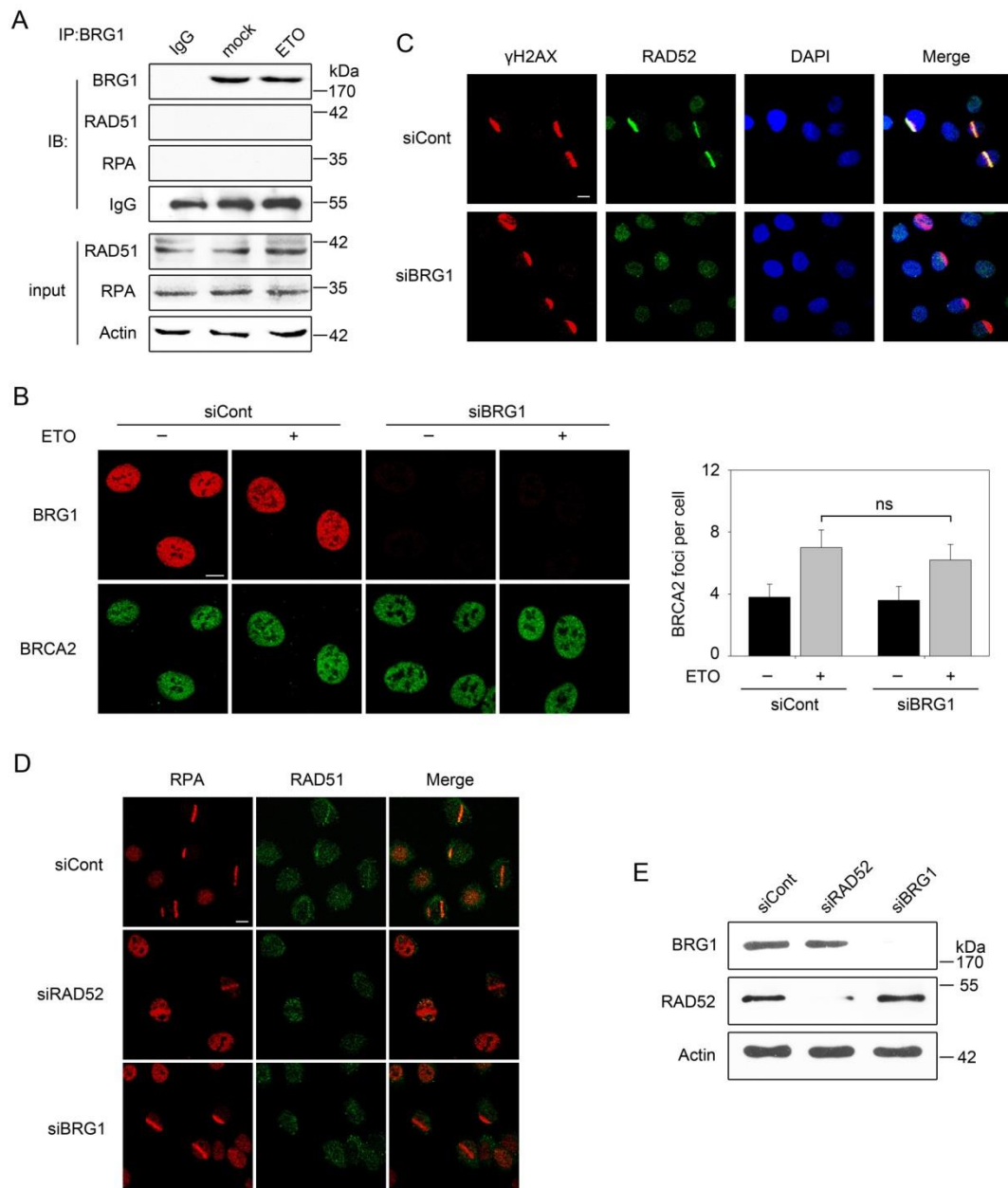
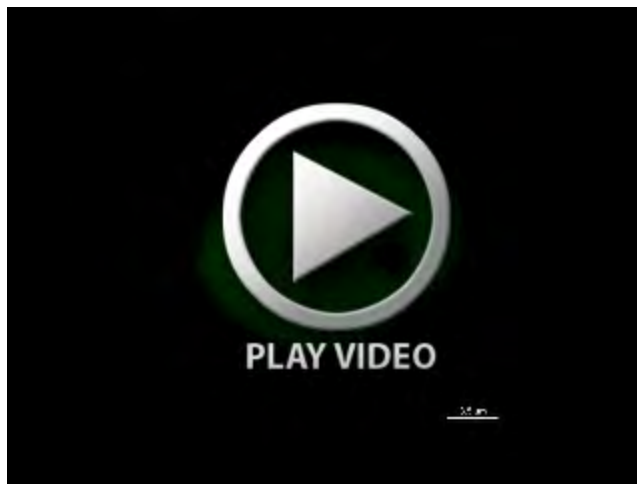


Figure S4. BRG1 regulates the recruitment of RAD51 and RAD52 to laser-induced DSBs. (A) U2OS cells were exposed to ETO or not, and cell pellets were lysed 1 h later. Cell lysates were incubated with a BRG1 antibody. The immunoprecipitated proteins were probed for RPA and RAD51. (B) U2OS cells transfected with BRG1 siRNA or control siRNA were exposed to 10 μ M ETO for 20 min. One hour later, cells were fixed and detected by immunostaining with antibodies

recognising BRG1 (red) and BRCA2 (green). Quantification of BRCA2 foci is shown on the right. Foci with more than 10 pixels were counted, with an average of 100 cells counted per experiment. Scale bar = 10 μ m. siCont: siControl. (C) U2OS cells transfected with BRG1 siRNA or control siRNA were subjected to multiphoton laser irradiation. After 1 h, the cells were immunostained for γ H2AX and RAD52. Scale bar = 10 μ m. (D) U2OS cells transfected with control siRNA, BRG1 siRNA or RAD52 siRNA pool were subjected to multiphoton laser irradiation. After 1 h, the cells were immunostained for RPA and RAD51. Scale bar = 10 μ m. (E) The expression of BRG1 and RAD52 was detected by immunoblotting.



Movie 1. The dynamics of GFP-RAD52 enrichment after DSB induction in control U2OS cells were observed through time-lapse video microscopy.



Movie 2. The dynamics of GFP-RAD52 enrichment after DSB induction in BRG1-depleted U2OS cells were observed through time-lapse video microscopy.