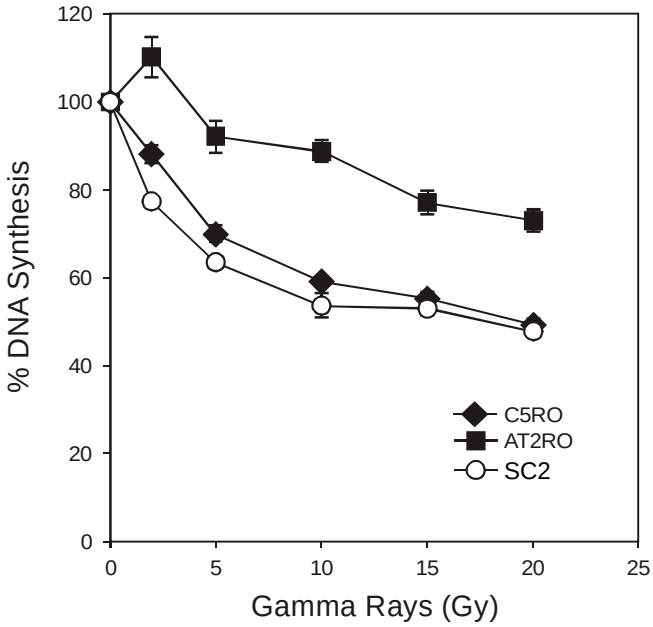
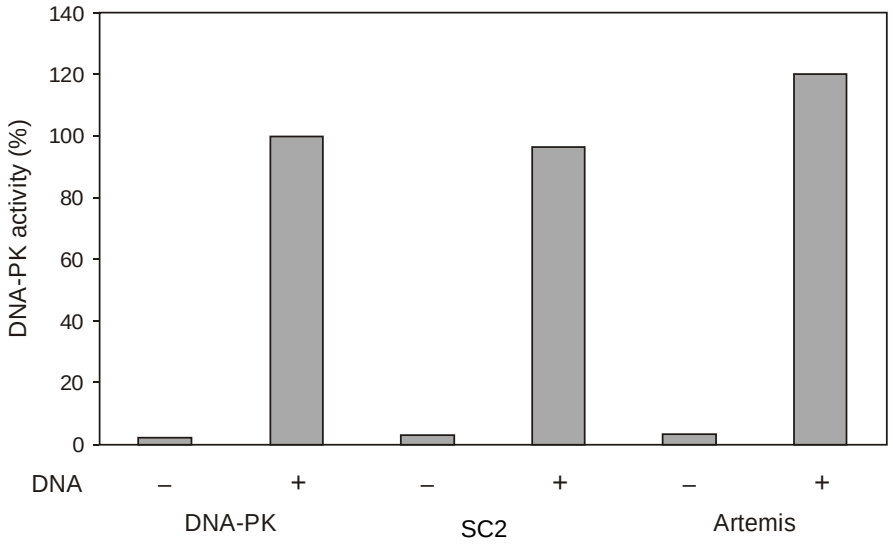
M. van der Burg et al. Figure S1

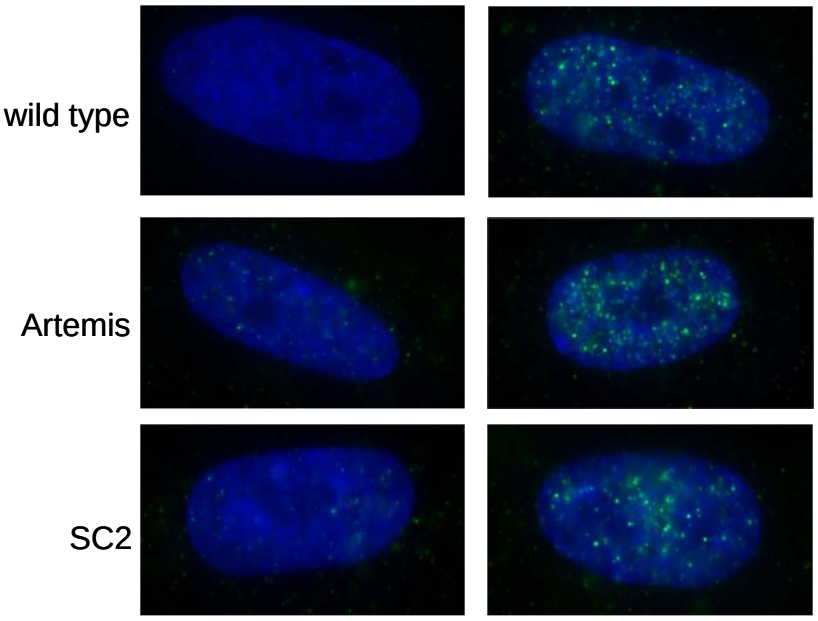


M. van der Burg et al. Figure S2

A



B



Supplementary Figure Legends

Figure S1. Radioresistant DNA synthesis

The radioresistant DNA synthesis (RDS) assay was performed as described (31). Wild type C5RO and the ATM mutant AT2RO primary human fibroblasts were used as controls. Cells were irradiated with increasing doses of γ-irradiation and ^{3}H-thymidine incorporation was determined between 0 and 4 hours after irradiation. C5RO (wild type) and AT2RO (ATM deficient) cells were used as controls. Upon irradiation, the SC2 cells showed a decrease in DNA synthesis similar to the C5RO wild type control cells, indicating that SC2 cells do not have impaired intra-S phase checkpoint function. The ATM-deficient cells showed a clear RDS phenotype.

Figure S2. DNA-PK activity assays

A. In whole cell extracts (47) prepared from hTert transformed SC2 or Artemis-deficient fibroblasts, DNA-PK activity was quantified using the SignaTECT DNA-dependent protein kinase assay system (Promega Corporation, Madison, WI). As a positive control the purified DNA-PK protein (100 ng) was used. The relative level of ^{32}P-phosphate incorporation into a p53 peptide by the cellular extracts (1μg of total protein each) was determined with (+) and without (-) addition of DNA. Purified DNA-PK was used as positive control and was arbitrarily set at 100%. DNA-PKcs activity in SC2 was normal.

B. Autophosphorylation of DNA-PKcs. Cells were treated with 0 or 5 Gy X-rays and DNA-PKcs autophosphorylation on T2609 was detected using a phosphorylation specific antiserum (green) (S1). Nuclei were visualized using DAPI staining (blue). Ionizing radiation induced DNA-PKcs autophosphorylation foci were found in all irradiated cells.

S1. Chan, D.W., et al. 2002. Autophosphorylation of the DNA-dependent protein kinase catalytic subunit is required for rejoining of DNA double-strand breaks. *Genes Dev*. **16**:2333–2338.