

SUPPLEMENTARY INFORMATION**Supplementary Table 1:** List of alternatively spliced transcripts identified in mESCs expressing *BRCA2* variants with PTC

Variants	Major alternate transcripts identified	Transcripts that generate protein with internal deletion	Transcripts that generate functional protein
c.407delA	Δexon 3-7 Δexon 4-7 Δexon 5-7 Δ3' 39 bp of exon 6 and exon 7 Δ3' 39 bp of exon 6 and exon 7-8	Δexon 3-7 Δexon 4-7 Δexon 5-7 (including one bp deletion in exon 4)	Δexon 4-7 Δexon 5-7 (one bp deletion in exon 4)
c.470_474del AGTCA	Δexon 3-7 Δexon 4-7 Δexon 5	Δexon 3-7 Δexon 4-7	Δexon 4-7
c.518delG	Δexon 3-7 Δexon 4-7 Δexon 5 Δexon 5-7	Δexon 3-7 Δexon 4-7 Δexon 5 (including one bp deletion in exon 7)	Δexon 4-7 Δexon 5 (including one bp deletion in exon 7)
c.610delC	Δexon 3-7 Δexon 4-7 Δexon 5	Δexon 3-7 Δexon 4-7	Δexon 4-7
c.632-2A>G	Δexon 4-8 Δ3' 39 bp of exon 6 and exon 7 Δ3' 39 bp of exon 6 and exon 7-8	Δ3' 39 bp of exon 6 and exon 7-8	Δ3' 39 bp of exon 6 and exon 7-8

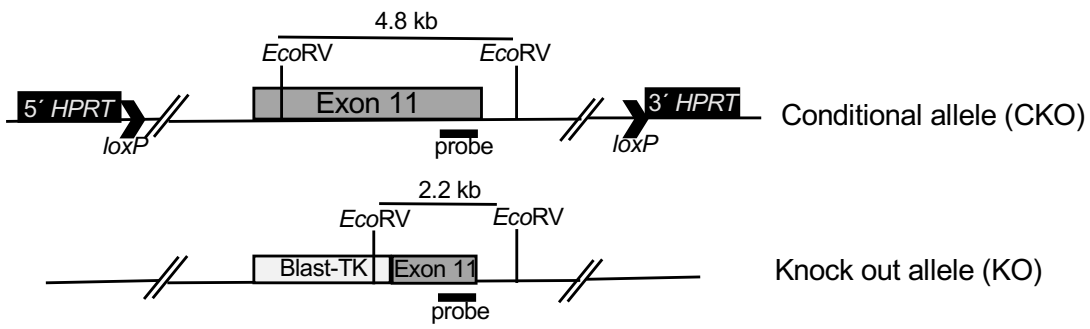
Supplementary Figure 1. Genotyping of PL2F7 mouse ES cell clones by Southern blot analysis

A. Schematic representation of *Brca2* null allele (*KO*) and conditional allele (*CKO*) in PL2F7 mESC and location of *EcoRV* sites in exon 11. A probe from exon 11 was used to distinguish between two alleles by Southern blot analysis of *EcoRV* digested genomic DNA. Thick line represents the location of probe.

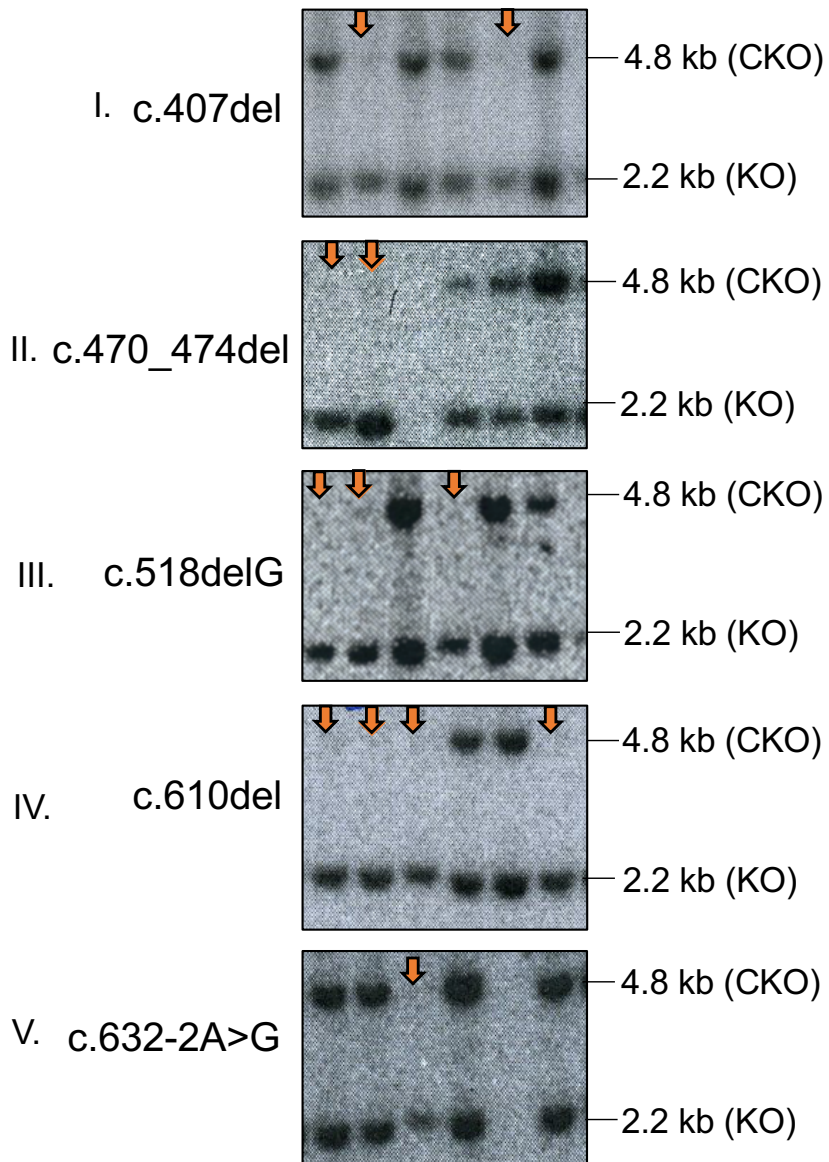
B. Representative results of Southern blot analysis for HAT-resistant mESC colonies expressing *BRCA2* variants (I. c.407delA; II. c.470_474delAGTCA, III, c.518delG, IV. c.610delC, V. c.632-2A>G). The upper band corresponds to the conditional allele, and the lower band corresponds to the mutant allele. Band sizes are marked on the right. *Brca2*^{KO/KO} mESC are marked with an arrow.

Supplementary Figure 1

A



B

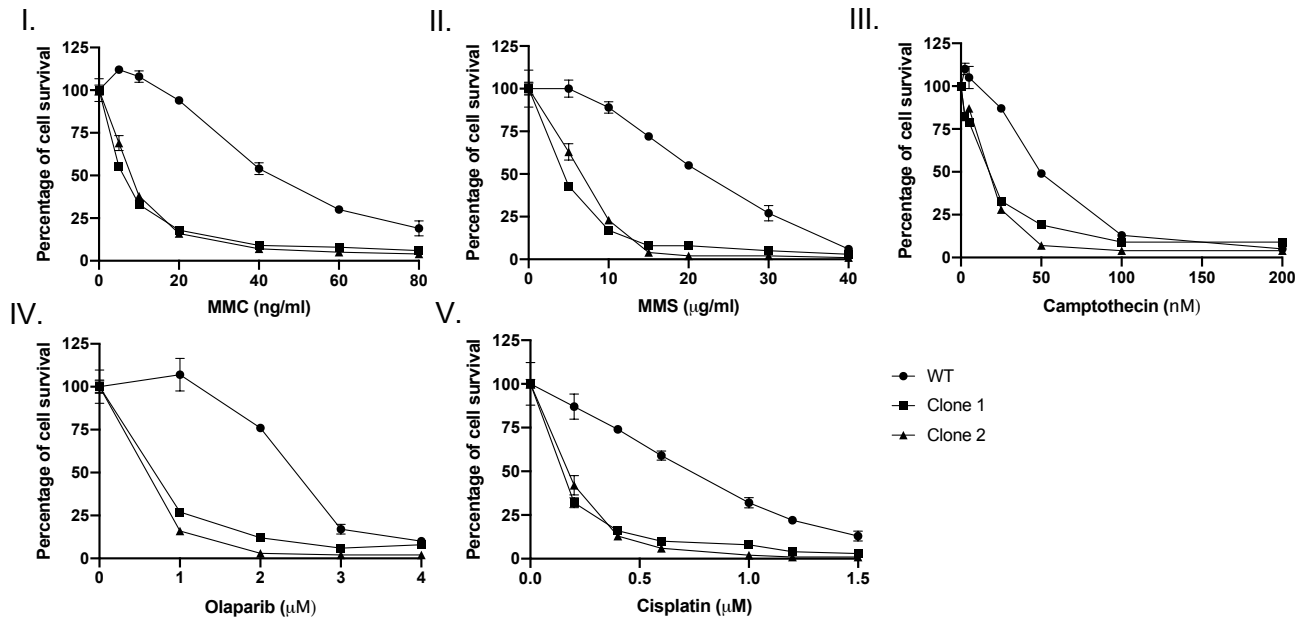


Supplementary Figure 2. Sensitivity of mES cells expressing WT and BRCA2 variants to various DNA-damaging agents.

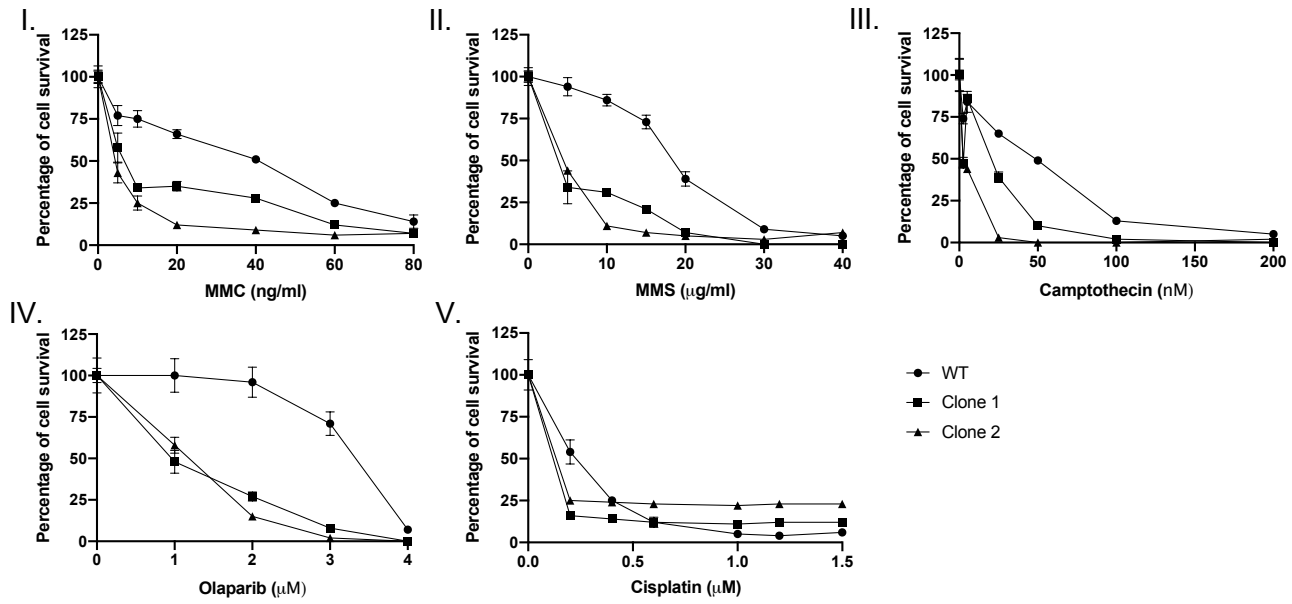
A-E. Survival, estimated by XTT assay, of mESC expressing either WT or BRCA2 variants (A. c.407delA; B. c.470_474delAGTCA, C. c.518delG, D. c.610delC, E. c.632-2A>G) in response to treatment with various DNA-damaging agents: MitomycinC (MMC, I); methyl-methane sulfonate (MMS, II); Camptothecin (III); Olaparib (IV); and cisplatin (V). Two independently generated clones were used for each variant. Error bars indicate standard deviations.

Supplementary Figure 2

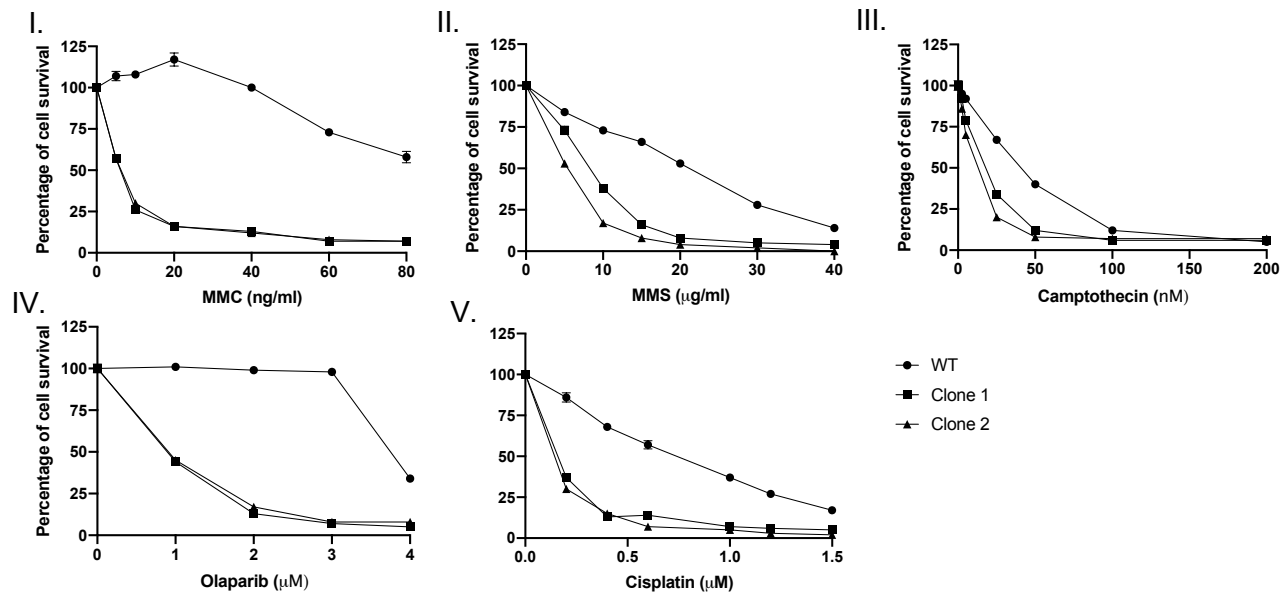
A. c.407 del



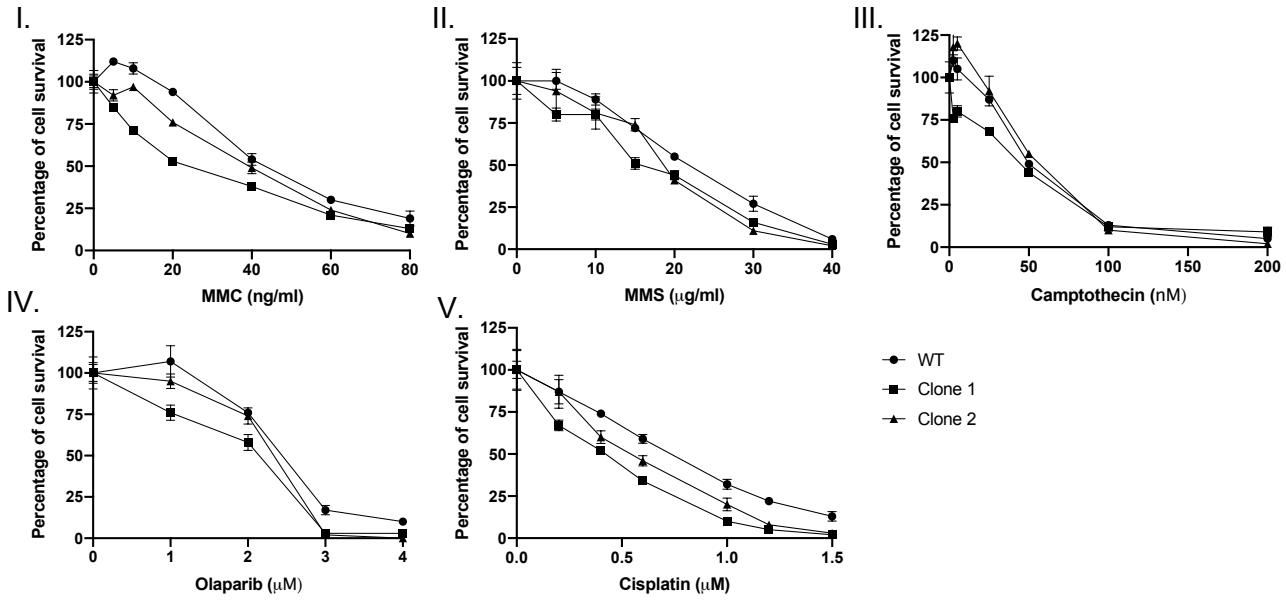
B. c.470-474 del



C. c.518 delG



D. c.610 del



E. c.632-2 A>G

