

Figure S1. Mutational analysis of *BRCA1* and *BRCA2* in SHIN3 cells. (A) Sample *BRCA1* sequence (3,630 bp) was compared with Reference NM_007294 in the NCBI gene database (49) and a single variant of A→G at codon 349 was detected. This variant causes a single amino acid change at position 116 from Gln to Arg, which is currently not known to have functional outcome or be associated with breast or ovarian cancer, therefore it was determined to be variants of unknown significance. Sample Sequence for *BRCA2* (5,018 bp) was compared with Reference NM_000059 in the NCBI gene database (50), and two variants were detected at (B) codon 2660 A→G and (C) codon 4560 G→C. These variants do not cause amino acid changes.



Figure S2. Combination treatment of pharmacological ascorbate and olaparib enhanced DNA double stranded breaks in OVCAR5 cells. Cells were treated with ascorbate, olaparib or a combination of the two at different concentrations for 2 h. Where indicated, cells were pretreated with catalase. Representative western blotting images from two independent experiments are presented. β -actin was used as a loading control. Asc, ascorbate.

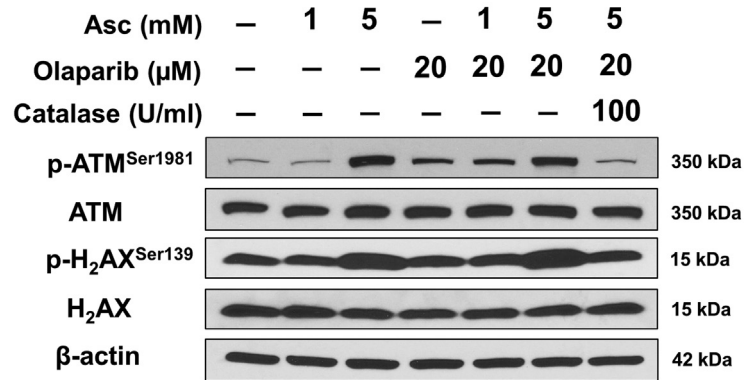


Table SI. Primer sequences used in the present study.

Exon 11 of *BRCA1* gene

Nest PCR primers (5'→3')

F1: AGAACCAGTTTTCTGATGGCC

R1: GGGACACCTGGATTTGCTTT

F2: TAGCCAGTTGGTTGATTTCCACC

R2: GCACCTTAGGAGGAACATGTTTC

Sequencing primers (5'→3')

F3: GGAATAAGCAGAAACTGCCATG

F4: ATGAGAATAAAACAAAAGGTGATTC

F5: TTGTCAATCCTAGCCTTCCAAG

F6: TGCCCACTCTGGGTCCTTAA

F7: GAAGTGGGCTCCAGTATTAATGA

F8: GGATGAAGAGCTTCCCTGCT

F9: TCAAGAAGAGCAAAGCATGG

Exon 11 of *BRCA2* gene

Nest PCR primers (5'→3')

F1: AAGCAGTCCTTGCACCTCACC

R1: CCATACTCCCCAAACTGACTA

F2: CTGCCTCAGCCTCCCAAAGT

R2: CCACTAAGATAAGGGGCTCTCC

Sequencing primers (5'→3')

F3: GAAGGACAGTGTGAAAATGATCCAA

F4: CAATTTCAAAAATAACTGTCAATCC

F5: GTGTTGAAATTGTAAATACCTTGGC

F6: TGCTGGCCTGTTGAAAAATG

F7: TATCTGGCCAGTTTATGAAGGAGG

F8: ACAACCCGAACGTGATGAAA

F9: AAAAATTCTGTGAGTCAGACTTCA

F10: GGTAGGGCCACCTGCATTTA

F11: ACAGCAAGTGGAAAATCTGTCC

F12: GTTGATAAGAGAAAACCCAGAGCAC

F13: TTCTAAACTGCCAAGTCATGCC

F, Forward; R, reverse.

Table SII. IC₅₀ values of ascorbate, olaparib and veliparib in the ovarian cancer cell lines.

Cell line	<i>BRCA1</i> mutation status	<i>BRCA2</i> mutation status	Ascorbate IC ₅₀ (mM) ^a	Olaparib IC ₅₀ (μM) ^a	Veliparib IC ₅₀ (μM) ^a
A2780	Wild-type	Wild-type	0.15±0.02	-	-
OVCAR10	Wild-type	Wild-type	0.30±0.01	-	-
OVCAR3	Wild-type	Wild-type	0.36±0.03	-	-
OVCAR5	Wild-type	Wild-type	1.35±0.04	219.85±77.65	64.06±10.04
SKOV3	Wild-type	Wild-type	1.49±0.04	-	-
OVCAR8	Wild-type	Wild-type	1.67±0.02	-	-
SHIN3	Wild-type	Wild-type	2.80±0.08	270.95±69.75	95.28±24.82
HIO-80 ^b	-	-	NA ^c	-	-

^aMean ± standard error of mean; ^bnon-tumorigenic human ovarian cell line; ^cNA, not applicable.