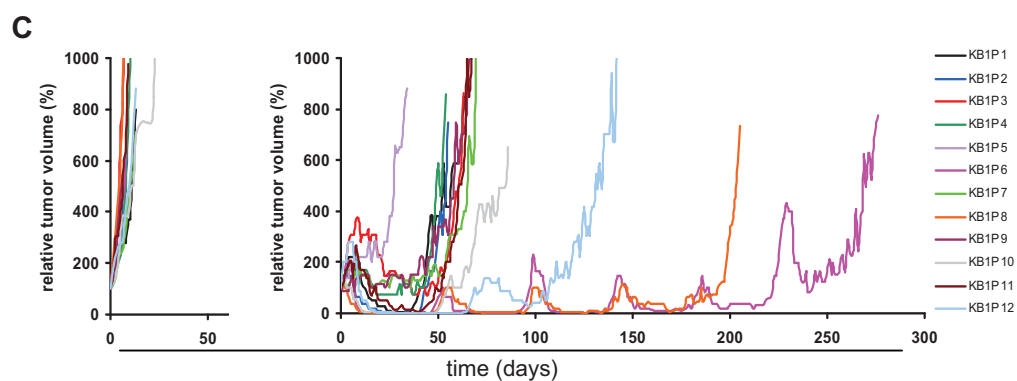
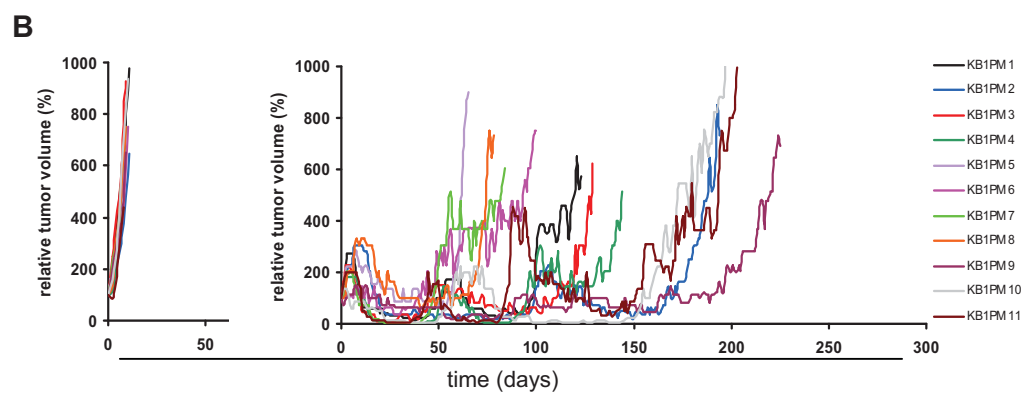
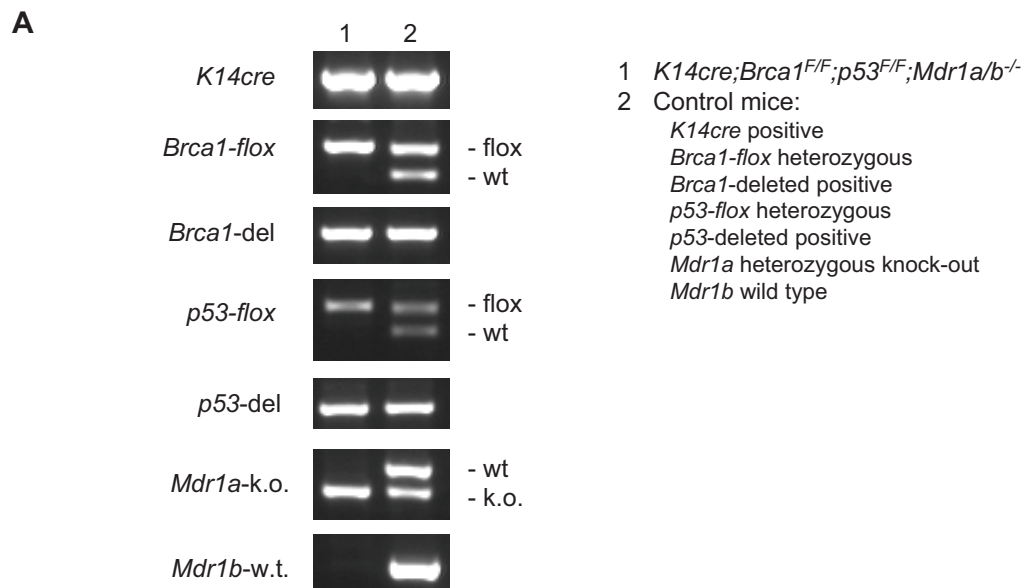


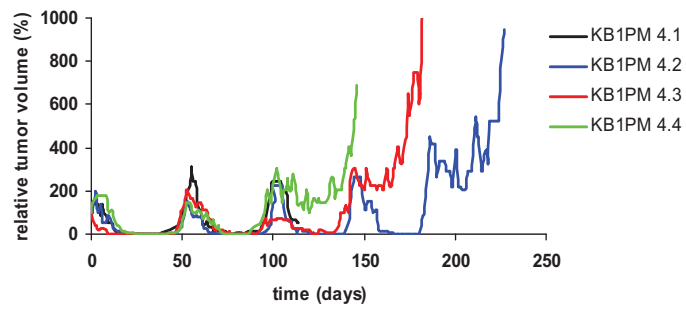
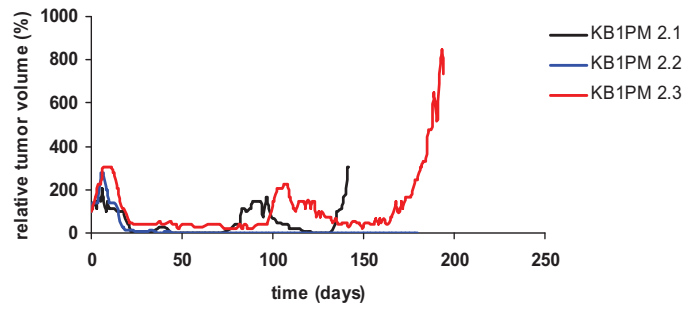
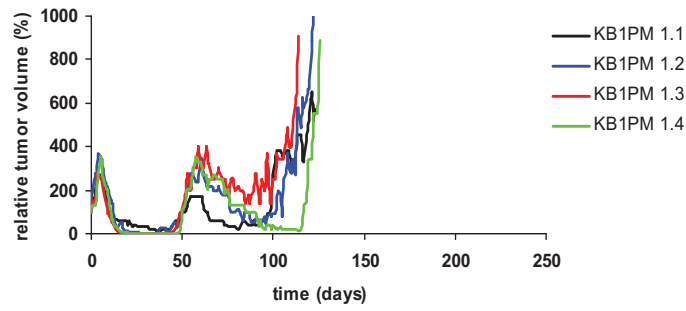
Supplementary Figure S1

Tumor responses to olaparib treatment



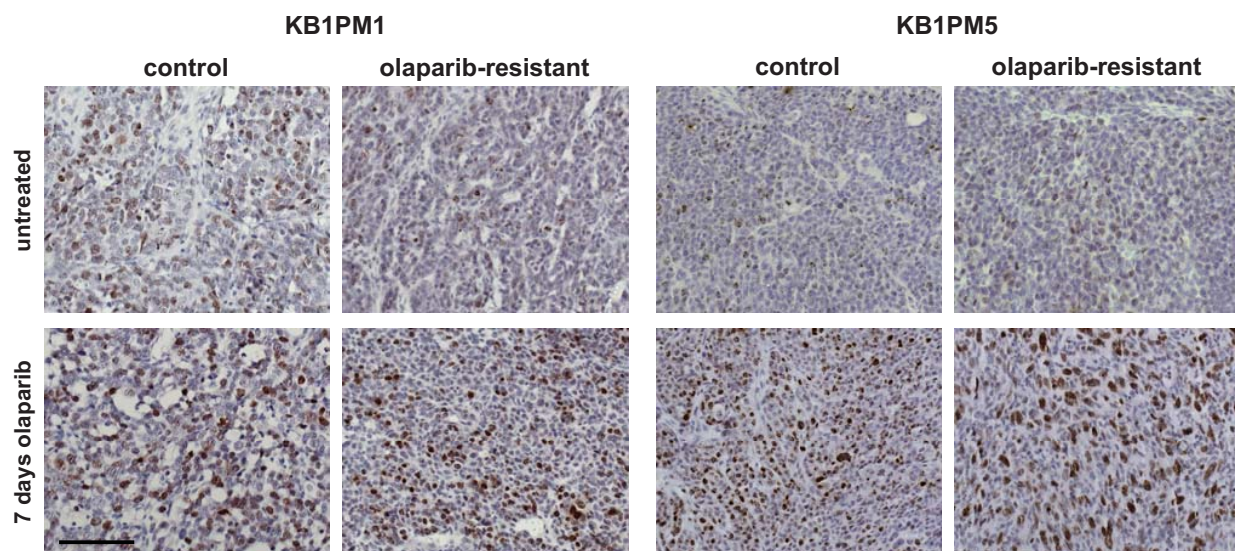
Supplementary Figure S2

Different tumors from the same donor respond similarly



Supplementary Figure S3

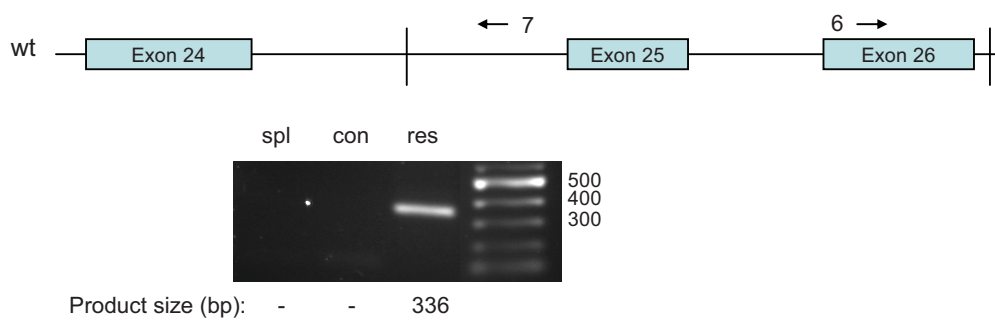
Damage induction in control and olaparib-resistant tumors after PARP inhibition



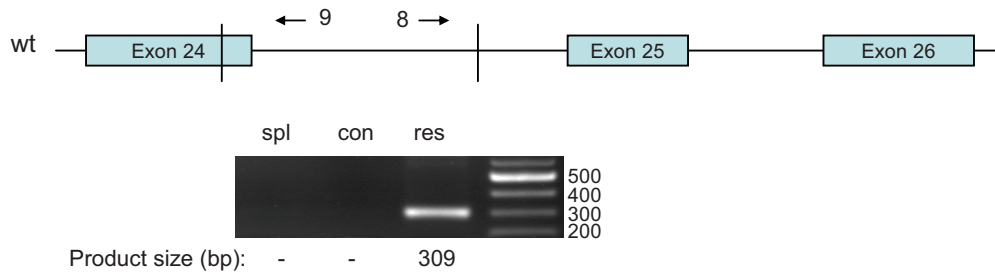
Supplementary Figure S4

Detection of rearrangements in *Trp53bp1* in the olaparib-resistant tumor KB1PM5

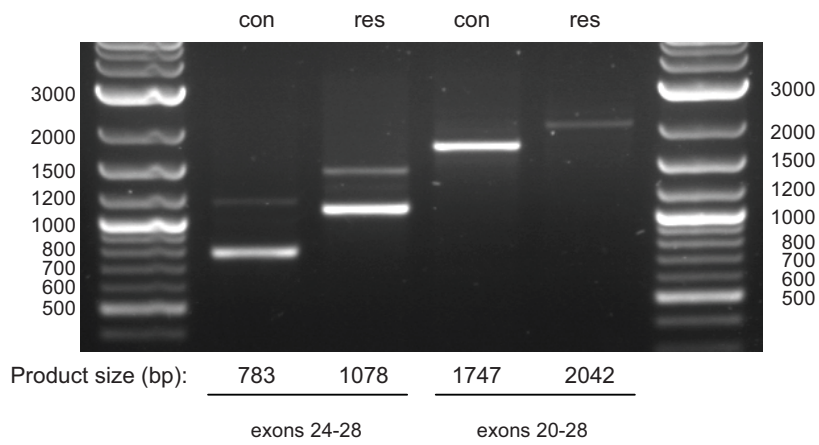
A



B



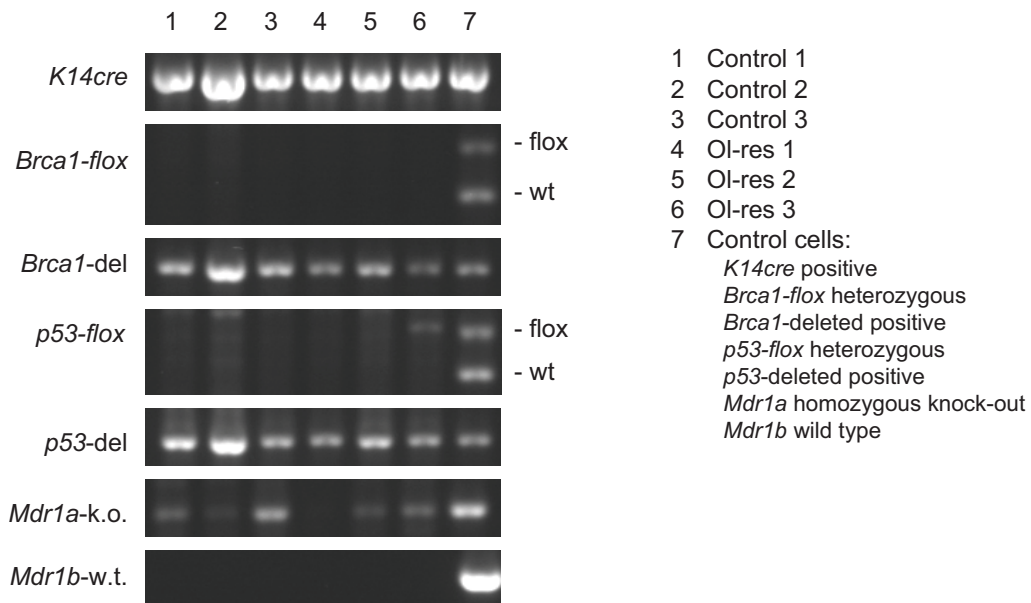
C



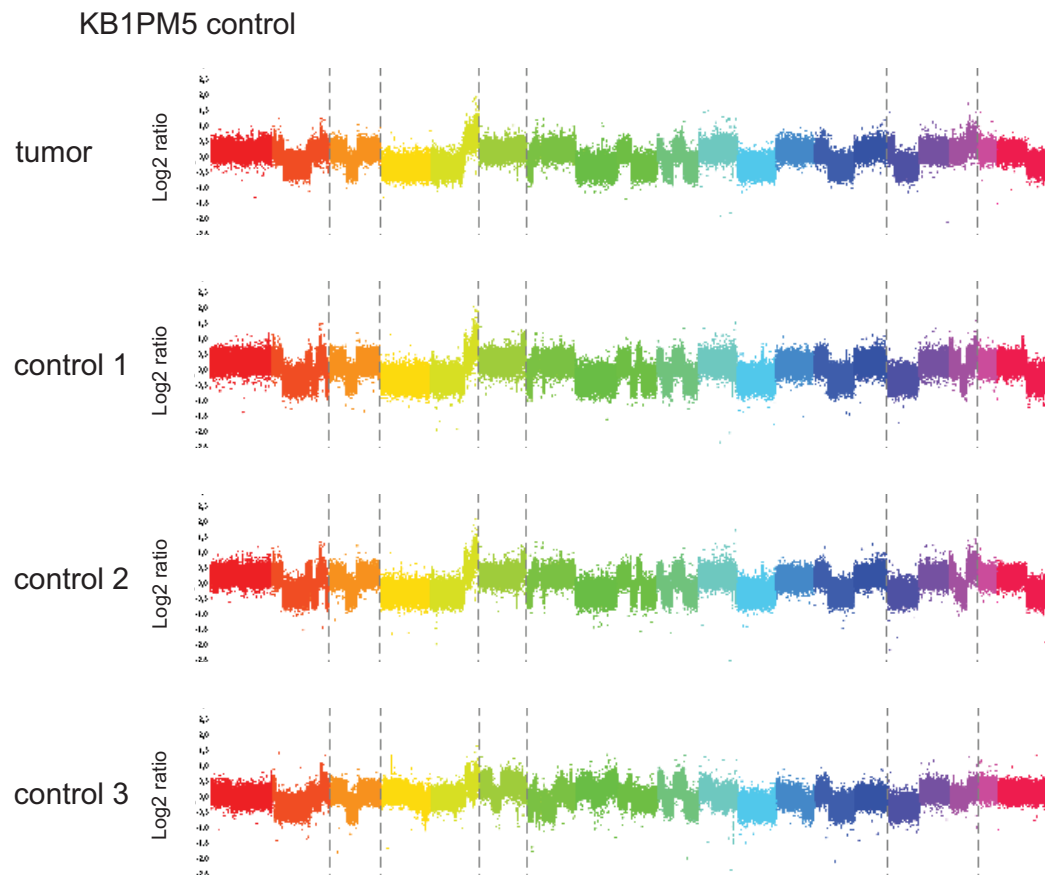
Supplementary Figure S5

Characterization of tumor-derived cell lines from KB1PM5

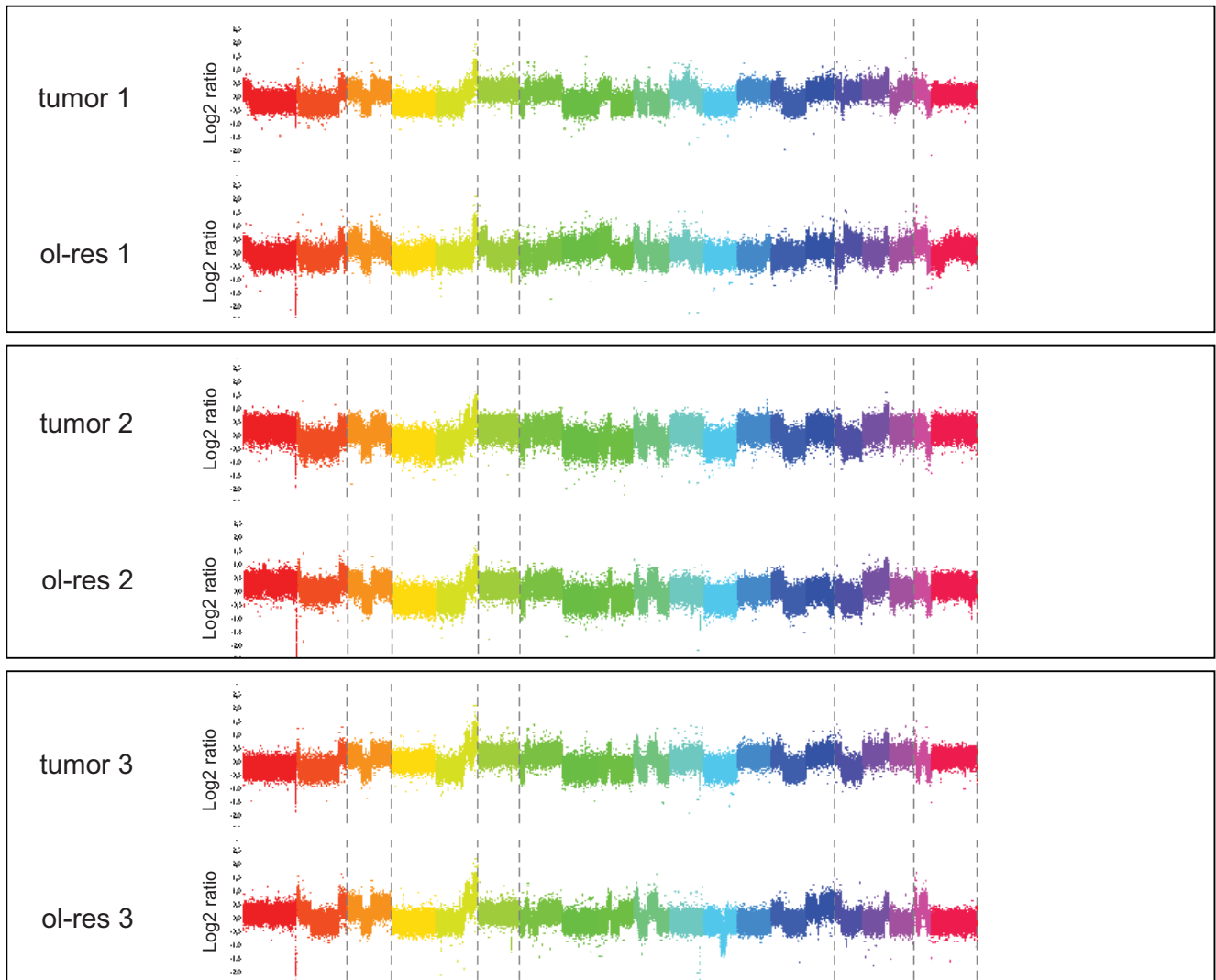
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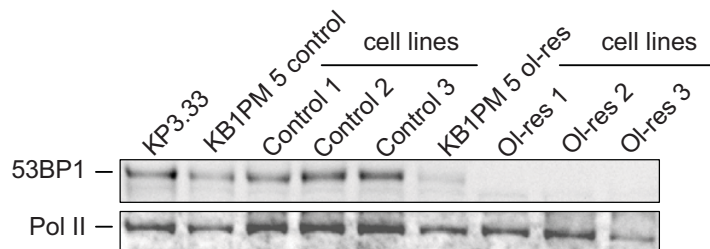
B



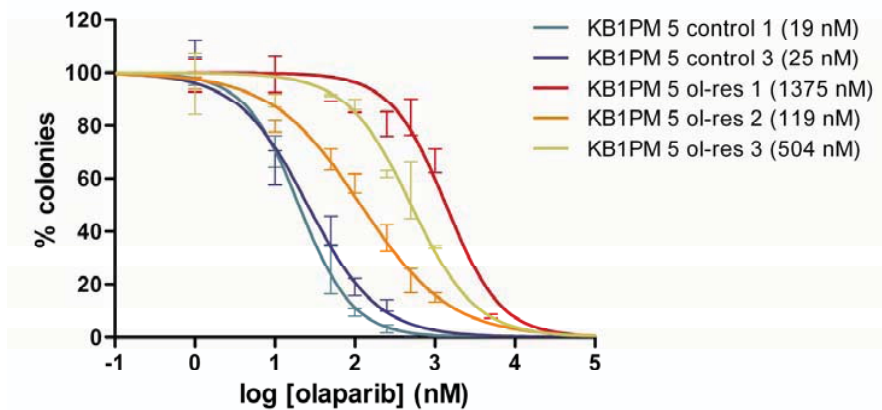
KB1PM5 olaparib-resistant



C

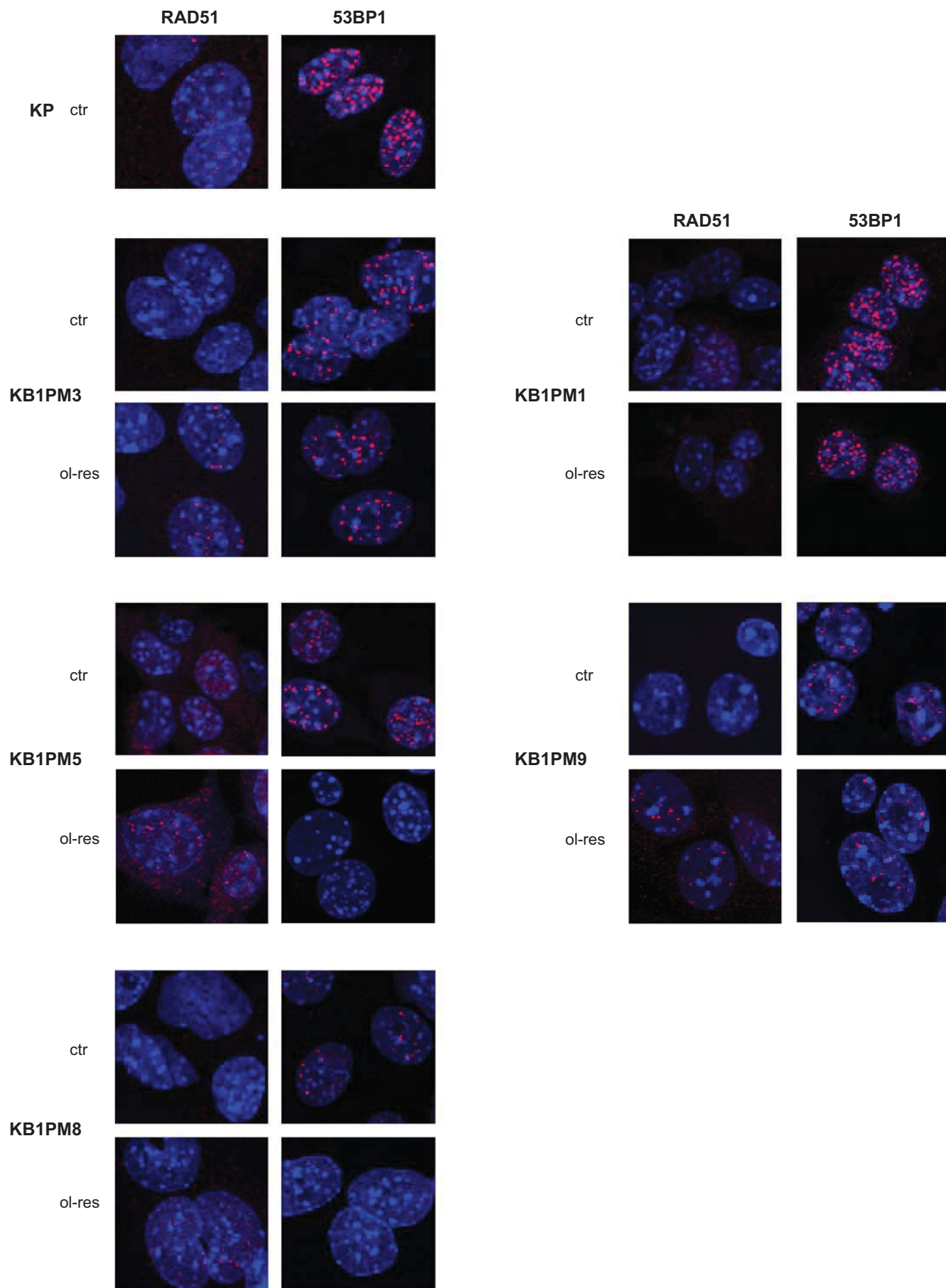


D



Supplementary Figure S6

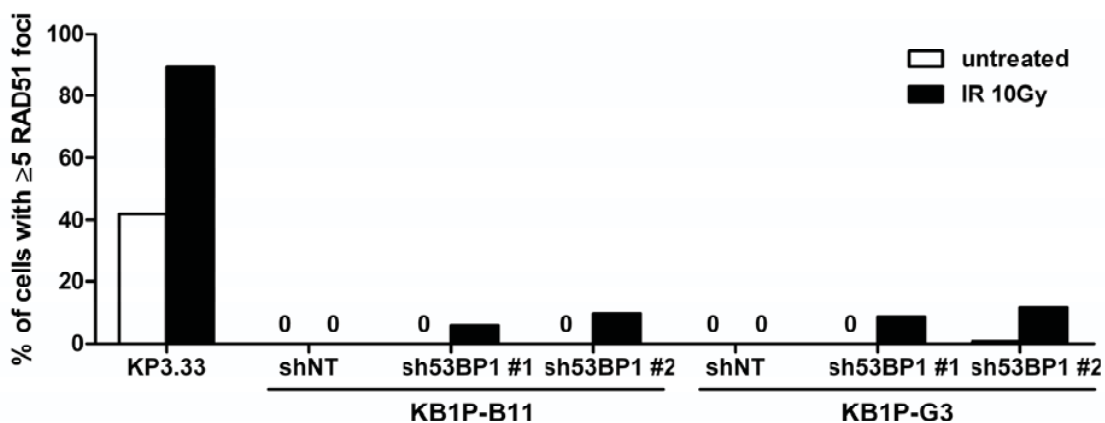
RAD51 and 53BP1 foci in irradiated tumor cell suspensions



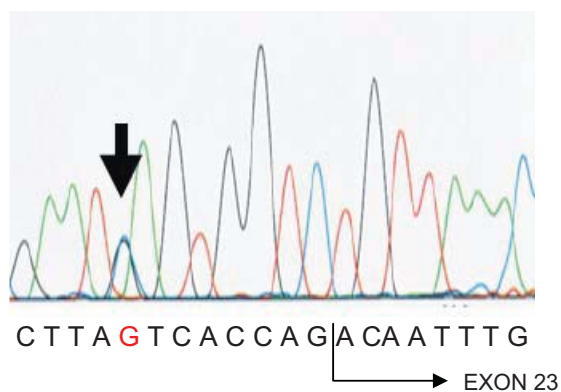
Supplementary Figure S7

53BP1 depletion in *Brca1*^{ΔΔ};*p53*^{ΔΔ} mammary tumor cells

A



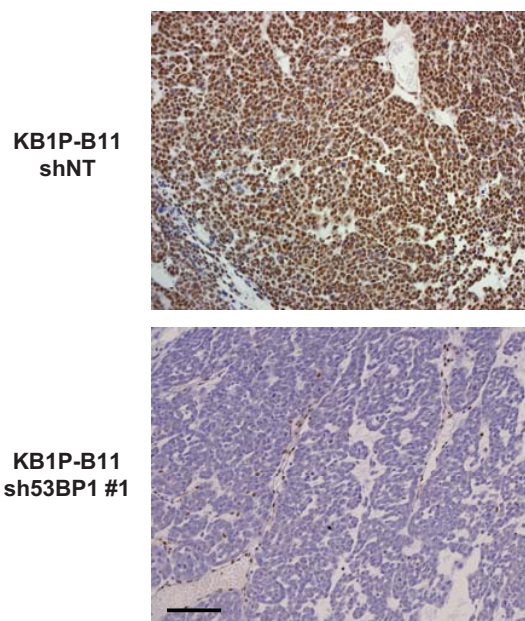
B



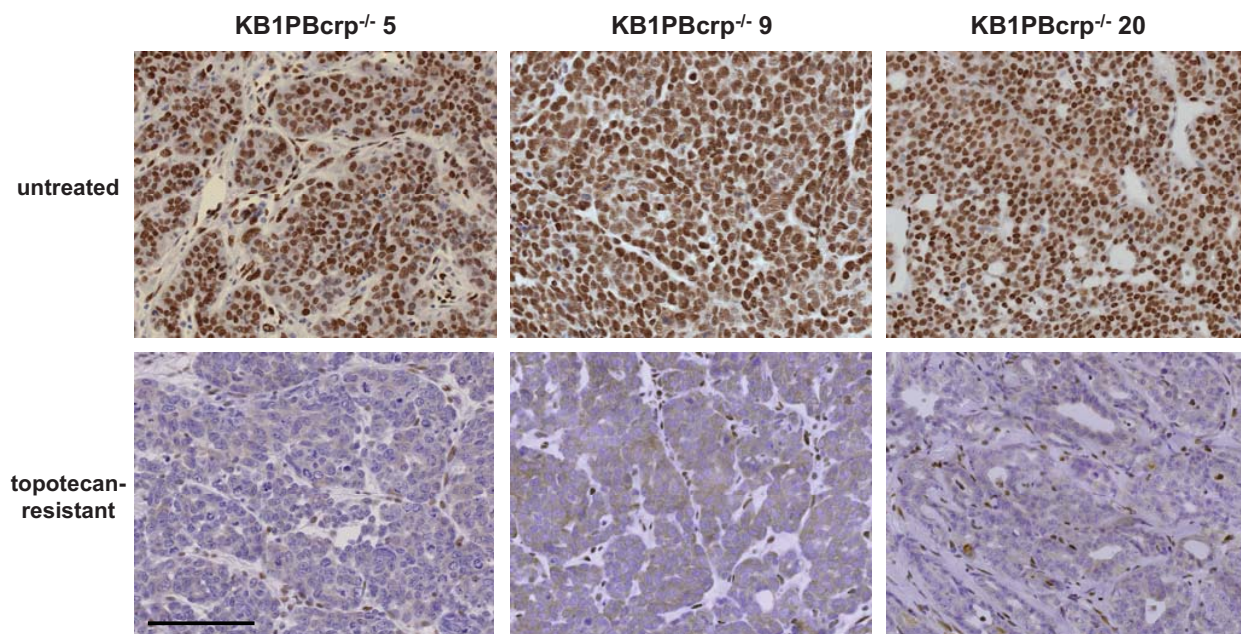
Trp53bp1 mRNA sequence:

Exon 22 Exon 23
 ...ATCAGCTTAGTCACCAGACAATTTGGTGGAAAGGAAAGCGGAAACGGCGCA
GTAACATCAGCTCCCCAGTCACCCCACT...

C



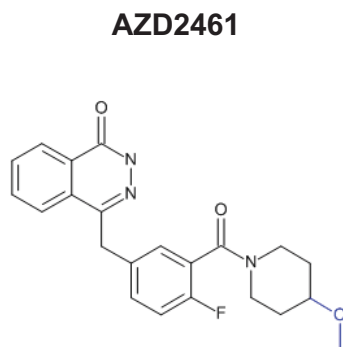
Supplementary Figure S8
Loss of 53BP1 in topotecan-resistant tumors



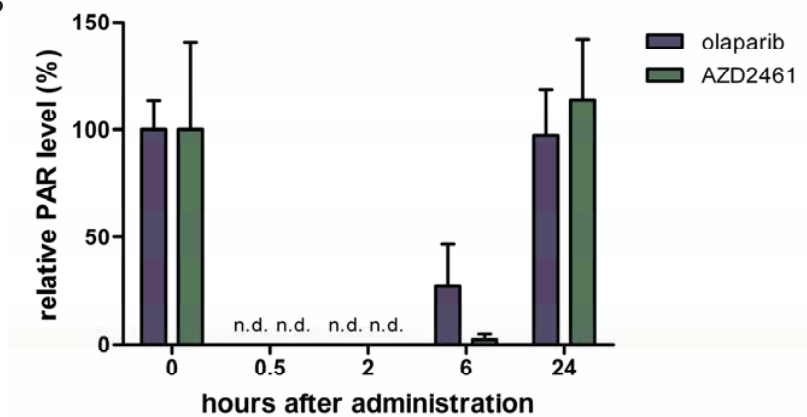
Supplementary Figure S9

Response of BRCA1-deficient mammary tumors to PARP inhibitor AZD2461

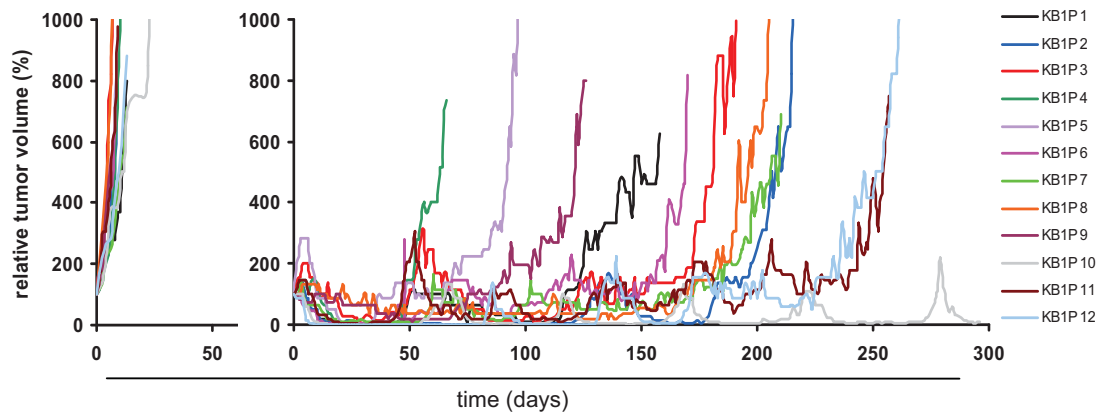
A



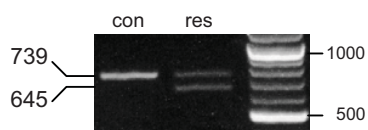
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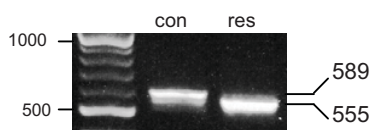
C



D



E



Supplementary Figure S10

Long-term treatment with PARP-inhibitor AZD2461

