

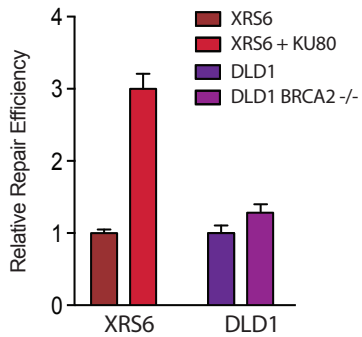
Supplementary Data

Supplementary Figure S1

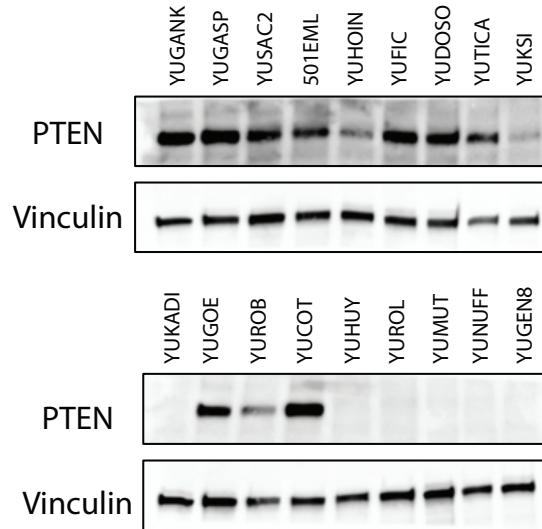
A

Patient information and Key Clinical Characteristics: Melanoma Cohort										
Sample ID	Age	Gender	Grade	Tumor Location	Microarray	Exome Seq	PTEN	BRAF	NRAS	TP53
YUCOT	33	F	IV	metastasis to ulna (long bone of forearm)	✓	✓	WT	V600E	WT	R196X-R and R213X-R
YUDOSO	84	M	b. primary	left abdomen	✓	✓	WT	WT	Q61K	WT
YUFIC	65	M	III	metastasis to inguinal lymph node	✓	✓	WT	E304K	Q61R	WT
YUGANK	78	M	IV	metastasis to brain	✓	✓	WT	WT	Q61K	WT
YUGASP	88	F	III	metastasis to right inguinal lymph node	✓	✓	WT	WT	Q61L	WT
YUGEN8	44	F	IV	metastasis to brain	✓	✓	Null	V600E	WT	WT
YUGOE	55	M	III	recurrence to right neck	✓	✓	WT	WT	G12V	R342X-R
YUHOIN	59	F	III	metastasis to right sub maxillary lymph node	✓	✓	WT	WT	WT	WT
YUHUY	64	M	III	metastasis to right axillary lymph node	✓	✓	Null	V600E	WT	WT
YUKADI	56	M	IIIC	metastasis to right chest	✓	✓	WT	V600E	WT	WT
YUKSI	62	M	IV	metastasis to right neck	✓	✓	WT	V600K	WT	Q317X
YUMUT	44	M	III	metastasis to soft tissue of wrist	✓	✓	Null	V600E	WT	WT
YUNUFF	59	F	IV	pleural cavity fluid (metastasis)	✓	✓	Null	V600E	WT	R158H
YUROB	76	F	IV	metastasis to abdominal wall	✓	✓	WT	WT	HRAS-Q61K	WT
YUROL	85	M	III	recurrence right posterior calf	✓	✓	Null	WT	WT	WT
YUSAC2	46	M	IV	Left neck	✓	✓	WT	V600E	WT	WT
YUTICA	65	M	IV	pleural cavity fluid (metastasis)	✓	✓	WT	WT	Q61R	WT

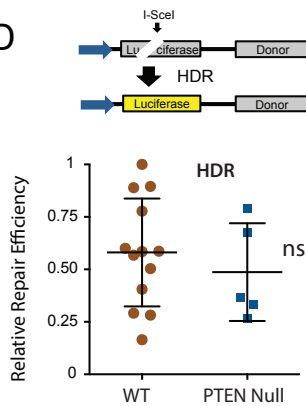
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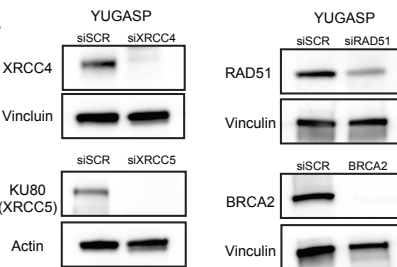
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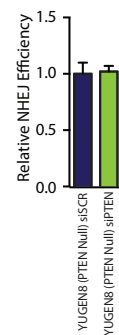
D



E



F



Supplementary Figure S1.

(A) Key clinical characteristics of the Yale patient-derived melanoma sample cohort. (B) Quantification of the NHEJ luciferase based reporter assay in the XRS6 cells deficient in Ku80 compared to the Ku80 complemented cells and in the DLD1 cells after BRCA2 homozygous knockout. (C) Western blot analysis of PTEN levels in the patient-derived, short-term melanoma cultures. Vinculin is used as a loading control. (D) Quantification of homology-dependent repair (HDR) reporter assay performed in patient-derived, short-term melanoma cultures. (E) Western blot analysis of siRNA knockdown of XRCC4, XRCC5, RAD51 and BRCA2 in the YUGASP patient-derived, short-term melanoma culture. (F) Quantification of the NHEJ luciferase based reporter assay in the PTEN-null YUGEN8 melanoma cells after transfection with siRNA targeting PTEN or scrambled control siRNA.