Chromosomal instability syndromes are sensitive to poly ADP ribose polymerase inhibitors

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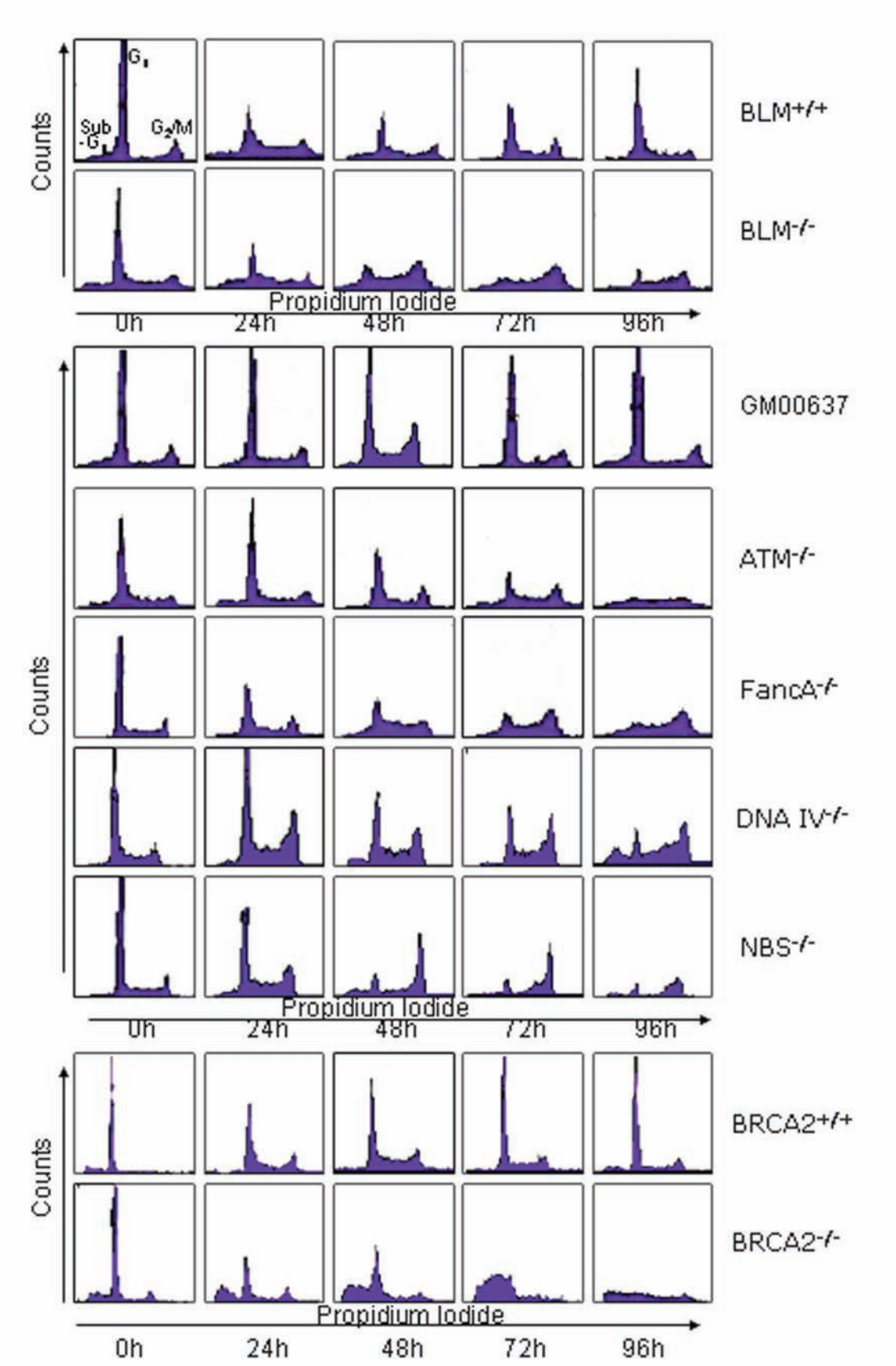
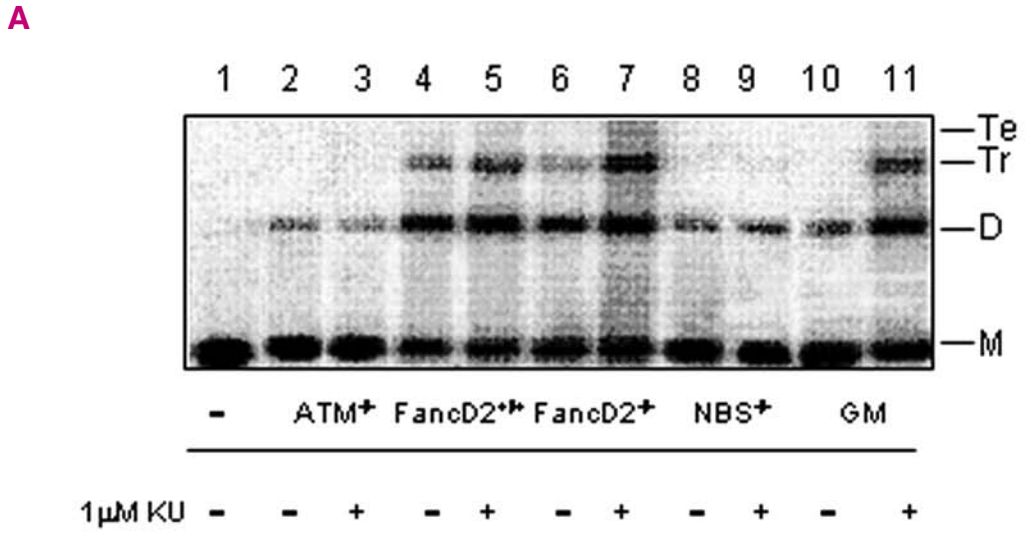
Online Supplementary Table S1. Apoptosis induced by KU-0058948 in chromosomal instability syndrome cell lines.

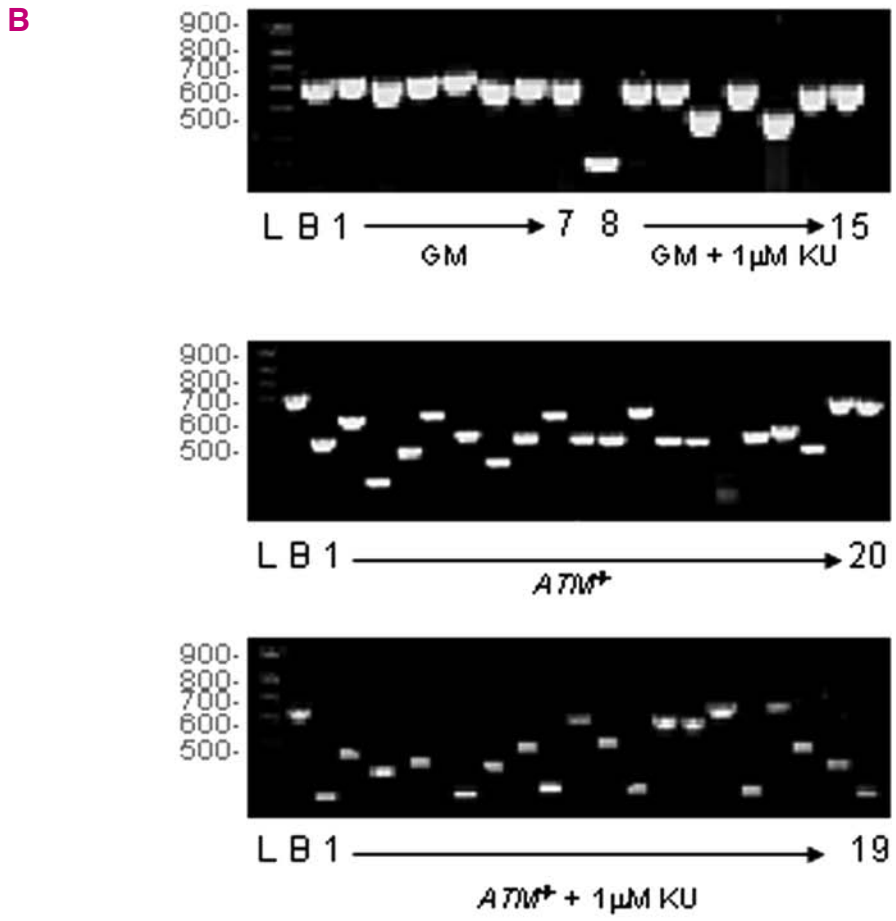
Cell line	*Time (hrs.)*	*0*	*24*	*48*	*72*	*96*
				*Apoptotic Index (%)**		
$BLM^{-/-}$		4.1±1	9±1	2±1	12±2	30±2
BLM^{+}		4.8±1	8.6±1	9.6±2	4.5±1	4±1
$BRCA2^{-/-}$		10±2	13.6±1	18±3	45±4	88±6
$BRCA2^{+}$		4±3	9±1	7±2	5±1	5±1
$FancD2^{-/-}$		9±1	3.8±1	12±1	27±2	35±5
$FancD2^{+}$		2.1±1	10±1	11±1	1.9±1	2.1±1
$ATM^{-/-}$		2±1	5±1	16±3	30±3	66±6
$FancA^{-/-}$		5±1	6.3±1	7.5±1	19±2	24±4
DNL $IV^{-/-}$		2±1	2.5±1	8.9±1	10±1	29.3±5
$NBS^{-/-}$		3±2	8.9±1	21±2	29±3	59±2
GM00637		5±1	4.6±1	4±2	2±1	1.1±1

*Note: 1 μM ku-0058948 was added to all the cultures. *Apoptotic Index is defined as the percentage sub-G_1 population events as a fraction of the total sub-G_1 + G_1 population events.*



Online Supplementary Figure S1. PARP inhibitors induce aberrant cell cycle anomalies and apoptosis. 1 μM KU-0058948 was added to *BLM*$^{+/+}$, *BLM*$^{-/-}$, GM00637, *ATM*$^{-/-}$, *FancA*$^{-/-}$, *DNL IV*$^{-/-}$, NBS$^{-/-}$, *BRCA2*$^{+/+}$ and *BRCA2*$^{-/-}$ for 96 h and analyzed by flow cytometry, n=3.





Online Supplementary Figure 2. PARP inhibitors increase NHEJ efficiency and inaccurate repair. (A) Plasmid ligation assay. Lane 1, plasmid only, Lane 2; *ATM*$^{-/-}$, Lane 3; *ATM*$^{-/-}$ + 1 μM ku-0058948, Lane 4; *FancD2*$^{+/+}$, Lane 5; *FANCD2*$^{+/+}$ + 1 μM ku-0058948, Lane 6; *FANCD2*$^{-/-}$, Lane 7; *FANCD2*$^{+/+}$ + 1 μM ku-0058948, Lane 8; *NBS*$^{-/-}$, Lane 9; *NBS*$^{-/-}$ + 1 μM KU-0058948, Lane 10; GM00637 (GM), Lane 11; GM00637 (GM) + 1 μM ku-0058948. End-ligation efficiency defined as ligated products as a fraction of unligated plasmid + all products. M-monomer, D-Dimer, Tr-Trimers, Te-Tetramers. (B) PCR of white (W) colonies produced in lacZ plasmid reactivation misrepair assay, untreated GM (W1-7), GM + 1 μM KU-0058948 (W8-15), *ATM*$^{-/-}$ (W1-20), *ATM*$^{-/-}$ + 1 μM ku-0058948 (W1-19). L- ladder, B-blue colony (628bp).