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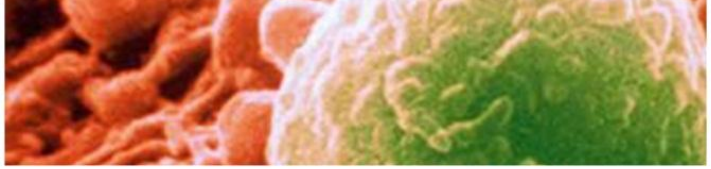

ATCC™

LYMPHOMA P53 HOTSPOT MUTATION CELL PANEL

p53 is a tumor suppressor protein encoded by the TP53 gene that responds to DNA damage by regulating cell-cycle arrest, apoptosis and senescence. At least 50 % of human tumors contain mutations or deletions of the TP53 gene. The **Lymphoma p53 Hotspot Mutation Cell Panel (ATCC® TCP-2050™)** is comprised of 5 select suspension cell lines derived from the lymphoma that have been sequenced and validated by ATCC. This panel includes cell lines of p53 WT as well as with p53 hotspot mutations at codons 248 and 273. The panel is useful for anti-cancer drug targeting or reactivation of mutant p53, as well as studies related to p53 molecular mechanisms.

ATCC® No.	Name	Tissue	Histology	TP53 status	Zygosity	CDS mutation	AA mutation
CCL-85™	EB-3	lymph node	Burkitt lymphoma	WT	-	-	-
CRL-1648™	CA46	lymph node	Burkitt lymphoma	MUT	homozygous	c.743G>A	p.R248Q
CRL-1432™	Namalwa	lymph node	Burkitt lymphoma, carry EBV	MUT	homozygous	c.743G>A	p.R248Q
CRL-2289™	DB	lymph node	large B-cell lymphoma	MUT	heterozygous	c.743G>A	p.R248Q
CRL-1942™	SUP-T1	lymph node	T cell lymphoblastic lymphoma	MUT	heterozygous	c.818G>A	p.R273H

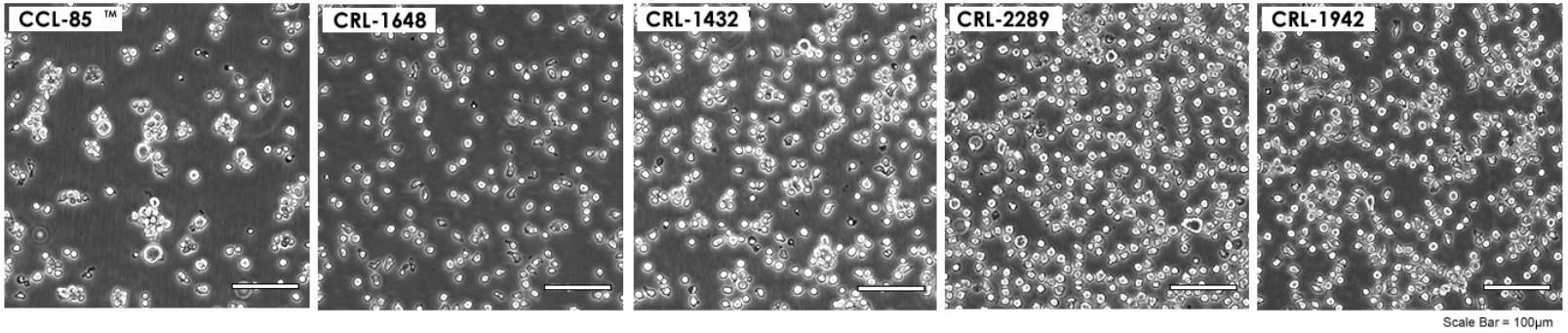

Figure 1. Cell morphology of five cell lines in the Lymphoma p53 Hotspot Mutation Cell Panel. One p53 wild-type lymphoma cell lines, EB-3, and four p53 hotspot mutation lymphoma cell lines, CA46, Namalwa, DB, and SUP-T1, were maintained in ATCC recommended culture conditions. Cell morphology was observed under Nikon™ microscopy, and images of the indicated cell lines were captured by Olympus® digital camera. Scale bar represents 100µm.

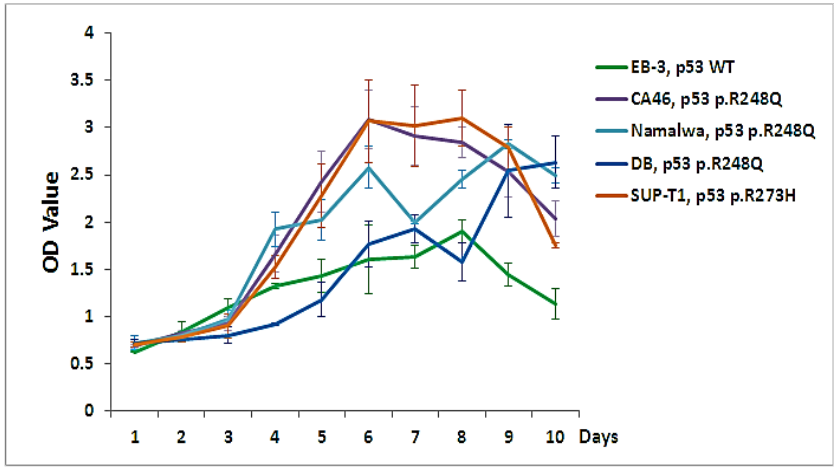

Figure 2. Cell growth kinetics. The indicated p53 wild-type and p53 mutation cells were cultured in ATCC recommended media, and plated at 3000 cells/well in 96-well plates. The cell growth kinetics were monitored for 10 days by CellTiter 96® AQueous One Solution Cell Proliferation Assay (Promega).

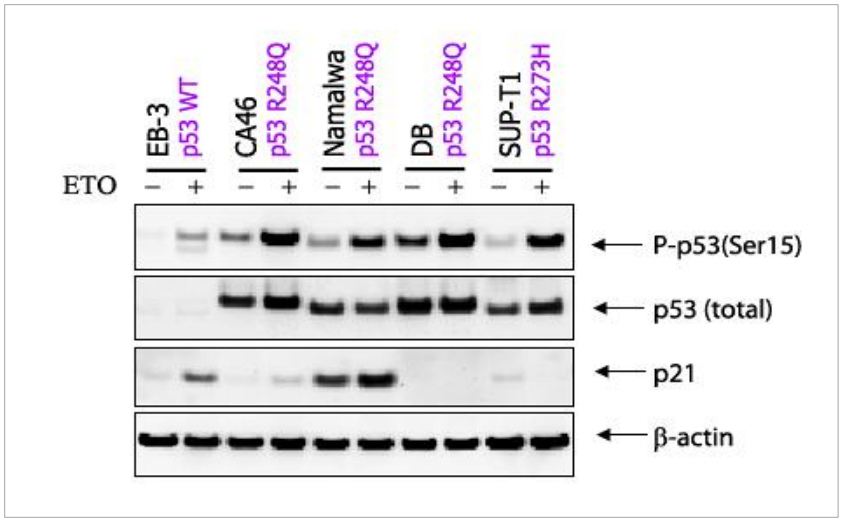

Figure 4. The indicated p53 wild-type and p53 mutation cells were treated with 20 μM etoposide (ETO) for 8 hours to induce DNA damage, or treated with DMSO as a control. Western blotting assay was used to examine phosphorylation of p53 at Serine 15, total protein expression of p53, and expression of p21, a downstream target of p53. β-actin protein was also examined as a control.

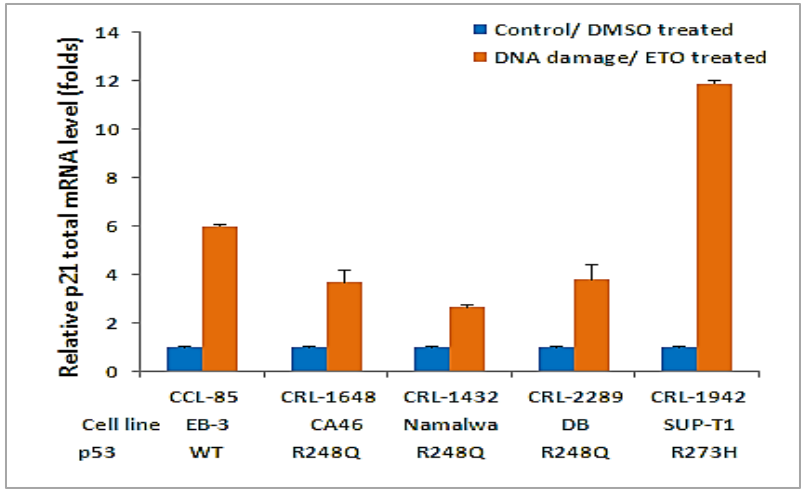

Figure 3. Real time PCR analysis of total mRNA levels of p21, a downstream target of p53, in the indicated p53 wild-type and p53 mutation cell lines. Cells were treated with 20 μM etoposide (ETO) for 6 hours to induce DNA damage, or treated with DMSO as a control. Total mRNA level of p21 and 36B4 were determined by real time quantitative PCR. Relative p21 total mRNA changes were normalized to the housekeeping gene 36B4.