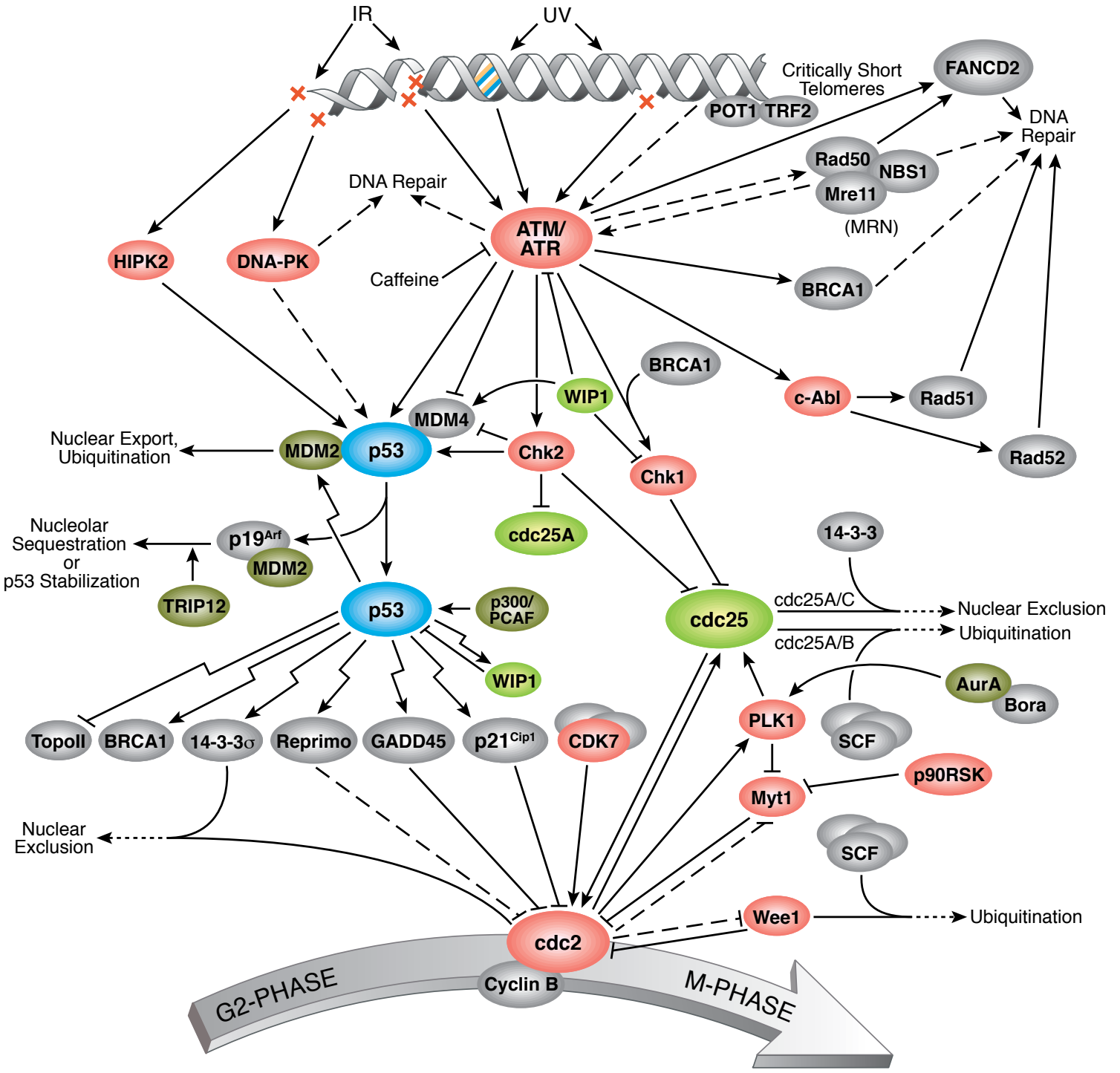


p53 Signaling

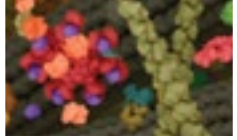
CELL CYCLE G2/M DNA DAMAGE SIGNALING PATHWAY



For pathway key and background please visit:

www.cellsignal.com/p53

Cell Signaling TECHNOLOGY®



Key Products for p53 Signaling

Visit **www.cellsignal.com/p53list** for full listing of antibodies, related kits, and reagents.

ANTIBODIES

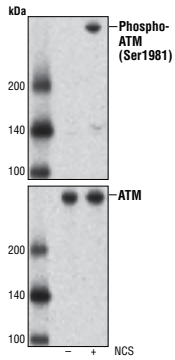
		APPLICATIONS	REACTIVITY
#4937	53BP1 Antibody	WB, IHC-P, IF-IC	H, Mk
#2675	Phospho-53BP1 (Ser1778) Antibody	WB, IF-IC, F	H, Mk
#2873	ATM (D2E2) Rabbit mAb	WB	H, M
#13050	Phospho-ATM (Ser1981) (D25E5) Rabbit mAb	WB, F	H
#13934	ATR (E1S3S) Rabbit mAb	WB, IP	H, M, R
#2853	Phospho-ATR (Ser428) Antibody	WB	H, M, R, Mk
#14823	BRCA1 (A8X9F) Rabbit mAb	WB, IP	H
#9009	Phospho-BRCA1 (Ser1524) Antibody	WB	H
#9116	cdc2 (POH1) Mouse mAb	WB, IP, IF-IC	H, Mk
#4539	Phospho-cdc2 (Tyr15) (10A11) Rabbit mAb	WB, IP, IF-IC, F	H, M, R, Mk
#9114	Phospho-cdc2 (Thr161) Antibody	WB	H, M, R, Mk
#3652	cdc25A Antibody	WB	H, M
#9525	cdc25B Antibody	WB	H, M, R, Mk
#4688	cdc25C (5H9) Rabbit mAb	WB	H
#4901	Phospho-cdc25C (Ser216) (63F9) Rabbit mAb	WB, IP, IHC-P	H, Mk
#2546	CDK2 (78B2) Rabbit mAb	WB, IP, F	H, M, R, Mk
#2561	Phospho-CDK2 (Thr160) Antibody	WB, IP, F, E-P	H, M, R
#2360	Chk1 (2G1D5) Mouse mAb	WB	H, M, R, Mk
#12302	Phospho-Chk1 (Ser317) (D12H3) XP® Rabbit mAb	WB, IP, IF-IC	H, M, Mk
#2348	Phospho-Chk1 (Ser345) (133D3) Rabbit mAb	WB, IF-IC, F	H, M, R, Mk
#6334	Chk2 (D9C6) XP® Rabbit mAb	WB, IP, IHC-P, IF-IC	H
#3440	Chk2 (1C12) Mouse mAb	WB, IHC-P, IF-IC	H, Mk
#2197	Phospho-Chk2 (Thr68) (C13C1) Rabbit mAb	WB, IP, IHC-P, F	H
#2661	Phospho-Chk2 (Thr68) Antibody	WB, IP, IF-IC, F	H, Mk
#12231	Cyclin B1 (D5C10) XP® Rabbit mAb	WB, IP, IF-IC, F	H, R
#4135	Cyclin B1 (V152) Mouse mAb	WB, F	H, M, (Hm)
#4118	Cyclin B1 (V152) Mouse mAb (Alexa Fluor® 647 Conjugate)	F	H, M, (Hm)
#4133	Phospho-Cyclin B1 (Ser133) (9E3) Rabbit mAb	WB, IP	H
#4131	Phospho-Cyclin B1 (Ser147) Antibody	WB	H, M, R, (Pg)
#12311	DNA-PK (3H6) Mouse mAb	WB, IHC-P, IF-IC	H, Mk
#2294	DRAK2 (33D7) Rabbit mAb	WB, IP, IHC-P, F	M
#4632	GADD45 α (D17E8) Rabbit mAb	WB	H, M, R, Mk
#3521	Phospho-MDM2 (Ser166) Antibody	WB	H, M, R
#2947	p21 Waf1/Cip1 (12D1) Rabbit mAb	WB, IP, IHC-P, IF-IC, F	H, Mk, (Dg)
#8587	p21 Waf1/Cip1 (12D1) Rabbit mAb (Alexa Fluor® 647 Conjugate)	IF-IC, F	H, Mk, (Dg)
#2527	p53 (7F5) Rabbit mAb	WB, IHC-P, IF-IC, F, ChIP	H, Mk
#2524	p53 (1C12) Mouse mAb	WB, IP, IF-IC, F, ChIP	H, M, R, Hm, Mk
#48818	p53 (DO-7) Mouse mAb	WB, IHC-P, IF-IC, F, ChIP	H
#9286	Phospho-p53 (Ser15) (16G8) Mouse mAb	WB, IF-IC, F	H
#8514	Phospho-p53 (Ser15) (16G8) Mouse mAb (PE Conjugate)	F	H
#9287	Phospho-p53 (Ser20) Antibody	WB	H, Mk
#2521	Phospho-p53 (Ser46) Antibody	WB, IP, IF-IC, F	H, Mk
#9281	Phospho-p53 (Ser392) Antibody	WB	H, M, Mi
#2570	Acetyl-p53 (Lys379) Antibody	WB	H, M
#2525	Acetyl-p53 (Lys382) Antibody	WB	H
#13109	p63-α (D2K8X) XP® Rabbit mAb	WB, IP, IF-IC, F, ChIP	H
#9335	Phospho-p90RSK (Ser380) (9D9) Rabbit mAb	WB	H, M, R, Mk, (C)
#11989	Phospho-p90RSK (Ser380) (D3H11) Rabbit mAb	WB, IHC-P, IF-IC	H, M, R, Mk, Mi, (C, X, Z, B, Dg, Pg, Hr)
#11901	WIP1 (D4F7) Rabbit mAb	WB	H, M, R, Mk

RELATED KITS AND REAGENTS

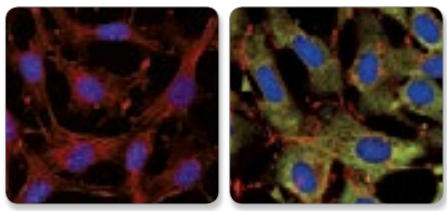
#9947	DNA Damage Antibody Sampler Kit
#7370	PathScan® Total p53 Sandwich ELISA Kit
#7365	PathScan® Phospho-p53 (Ser15) Sandwich ELISA Kit
#7236	PathScan® Acetylated p53 Sandwich ELISA Kit
#12856	PathScan® Stress and Apoptosis Signaling Antibody Array Kit (Chemiluminescent Readout)
#12923	PathScan® Stress and Apoptosis Signaling Antibody Array Kit (Fluorescent Readout)
#8357	Stress and Apoptosis Antibody Sampler Kit

ATM is a serine/threonine kinase that regulates cell cycle checkpoints and DNA repair. Activation of ATM by autophosphorylation on Ser1981 occurs in response to exposed DNA double stranded breaks. ATM kinase regulates a number of proteins involved in cell cycle checkpoint control, apoptosis, and DNA repair.

Phospho-ATM (Ser1981) (D25E5) Rabbit mAb #13050: WB analysis of extracts from HCT 116 cells, untreated (-) or treated with NCS (+), using #13050 (upper) and ATM (D2E2) Rabbit mAb #2873 (lower).

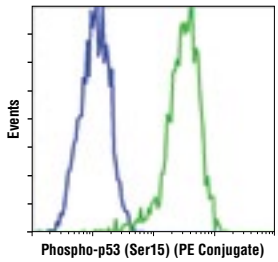


Phospho-p90RSK (Ser380) (D3H11) Rabbit mAb #11989: IF analysis of NIH/3T3 cells, serum-starved (left), or treated with TPA #4174 (200 nM, 15 min; right), using #11989 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

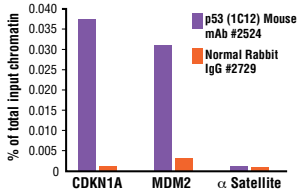


p53 is a tumor suppressor protein which plays a major role in cellular response to DNA damage and other genomic aberrations. DNA damage induces phosphorylation of p53 at Ser15, leading to reduced interaction between p53 and its negative regulator, MDM2. MDM2 regulates p53 accumulation by targeting it for ubiquitination and proteasomal degradation.

Phospho-p53 (Ser15) (16G8) Mouse mAb (PE Conjugate) #8514: Flow cytometric analysis of HT-29 cells, untreated (blue) or UV-treated (green), using #8514.

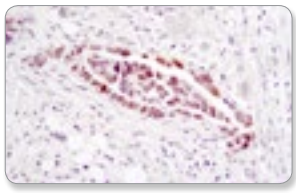


p53 (1C12) Mouse mAb #2524: Chromatin IPs were performed with cross-linked chromatin from 4 x 10^6 HCT 116 cells treated with UV and either 2.5 µl of #2524 or 2 µl of Normal Rabbit IgG #2729 using SimpleChIP® Enzymatic Chromatin IP Kit (Magnetic Beads) #9003 and primers to the designated loci.



Chk2 can phosphorylate p53 at Ser20, which can interfere with p53 and MDM2 binding subsequently preventing ubiquitination and proteasomal degradation of p53.

Chk2 (D9C6) XP® Rabbit mAb #6334: IHC analysis of paraffin-embedded human ovarian serous adenocarcinoma using #6334.



APPLICATIONS & REACTIVITY KEY: **WB** Western Blotting / **IP** Immunoprecipitation / **IHC** Immunohistochemistry / **IF** Immunofluorescence / **F** Flow Cytometry / **ChIP** Chromatin Immunoprecipitation / **-IC** Immunocytochemistry / **-P** Paraffin / **-F** Frozen / **E-P** Peptide ELISA / **H** human / **M** mouse / **R** rat / **Hm** hamster / **Mk** monkey / **C** chicken / **Mi** mink / **Dm** D. melanogaster / **X** Xenopus / **Z** zebra fish / **B** bovine / **Dg** dog / **Pg** pig / **Sc** S. cerevisiae / **All** all species expected / **( )** 100% sequence homology

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