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Datasheet for 200-303-400

ATM phospho S1981 Peroxidase Conjugated Antibody

Overview

Description:	Anti-ATM Protein Kinase pS1981 (MOUSE) Monoclonal Antibody Peroxidase Conjugated - 200-303-400
Item No.:	200-303-400
Size:	100 µg
Applications:	ELISA, WB
Reactivity:	Human, Mouse, Rat
Host Species:	Mouse

Product Details

Background:	ATM, the gene mutated in the hereditary disease ataxia-telangiectasia, codes for a protein kinase that acts as a master regulator of cellular responses to DNA double-strand breaks. ATM is normally inactive and the question of how it is activated in the event of DNA damage (due to ionizing radiation for instance) is central to understanding its function. ATM protein is now shown to be present in undamaged cells as an inactive dimer. Low doses of ionizing radiation, which induce only a few DNA breaks, activate at least half of the total ATM protein present, possibly in response to changes in chromatin structure. The ATM gene encodes a 370-kDa protein that belongs to the phosphoinositide 3-kinase (PI(3)K) superfamily, but which phosphorylates proteins rather than lipids. The 350-amino-acid kinase domain at the carboxy terminus of this large protein is the only segment of ATM with an assigned function. Exposure of cells to IR triggers ATM kinase activity, and this function is required for arrests in G1, S and G2 phases of the cell cycle. Several substrates of the ATM kinase participate in these IR-induced cell-cycle arrests. These include p53, Mdm2 and Chk2 in the G1 checkpoint; Nbs1. Ideal for Cancer, Cell Signaling, Chromatin, Neuroscience and Signal Transduction research.
Synonyms:	mouse anti-ATM antibody biotin, biotin conjugated mouse anti-ATMpS1981 antibody, mouse anti-ATM pS1981 antibody biotin conjugated, DKFZp781A0353 antibody, Human phosphatidylinositol 3 kinase homolog antibody, MGC74674 antibody, Serine protein kinase ATM antibody, T cell prolymphocytic leukemia antibody, AT mutated antibody, AT protein antibody, AT1 antibody, ATA antibody, Ataxia telangiectasia gene mutated in human beings antibody, Ataxia telangiectasia mutated antibody, ATC antibody, ATDC antibody, ATE antibody, ATM antibody
Host Species:	Mouse
Conjugate:	Peroxidase (HRP)

Clonality:	Monoclonal
Clone ID:	10H11.E12
Format:	IgG1

Target Details

Gene Name:	ATM
Reactivity:	Human, Mouse, Rat
PTM Specificity:	Phosphorylation
Immunogen Type:	Conjugated Peptide
Immunogen:	ATM phospho S1981 Peroxidase Conjugated Antibody was produced from a synthetic peptide S-L-A-F-E-E-G-Sp-Q-S-T-T-I-S-S corresponding to aa 1974-1988 of human ATM.
Purity/Specificity:	HRP conjugated ATM phospho S1981 Monoclonal Antibody is Protein A Purified directed against human ATM and is useful in determining its presence in various assays. This monoclonal anti-ATM antibody recognizes the phosphorylated epitope in native and over-expressed proteins found in various tissues and extracts. Reactivity is observed against human and mouse ATM. Cross reactivity with ATM from other mammalian sources has not been tested.
Relevant Links:	• UniProtKB - Q13315 • NCBI - NP_000042.3 • GeneID - 472

Application Details

Tested Applications:	ELISA, WB
Application Note:	This product has been tested by ELISA and western blotting against both the native and recombinant forms of the protein. This reagent may also be suitable for immunoperoxidase electron microscopy and immunohistochemistry as well as other peroxidase-antibody based enzymatic assays.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
ELISA:	1:70,000
IF:	1:200
IHC:	User Optimized
WB:	1:600

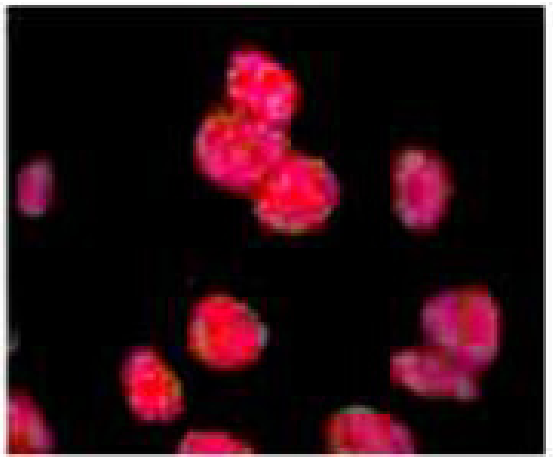
Formulation

Physical State:	Lyophilized
Concentration:	1.1 mg/mL by UV absorbance at 280 nm
Buffer:	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Preservative:	0.01% (w/v) Gentamicin Sulfate. Do NOT add Sodium Azide!
Stabilizer:	10 mg/mL Bovine Serum Albumin (BSA) - Immunoglobulin and Protease free
Reconstitution Volume:	100 µL
Reconstitution Buffer:	Restore with deionized water (or equivalent)

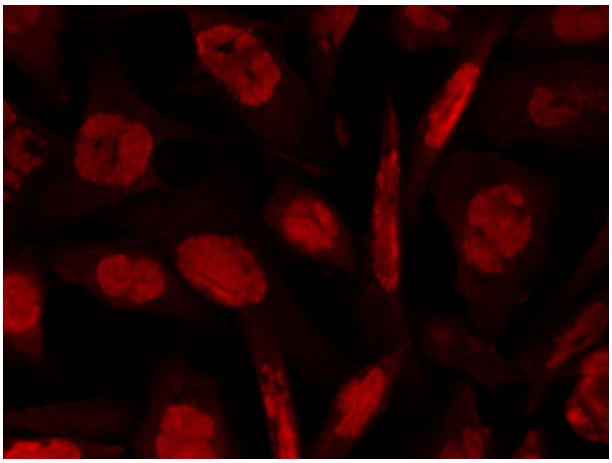
Shipping & Handling

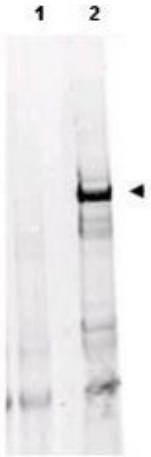
Shipping Condition:	Ambient
Storage Condition:	Store Anti-ATM phospho S1981 Peroxidase Conjugated Antibody at 4° C prior to restoration. For extended storage aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This ATM antibody is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.
Expiration:	Expiration date is one (1) year from date of receipt.

Images



Immunofluorescence Microscopy
Anti ATM Antibody showing overlay of anti-ATM pS1981 staining. Cells were fixed 15 min after 5 Gy (IR+) of irradiation, then labeled with antibody. See Kitagawa et al. for additional details.



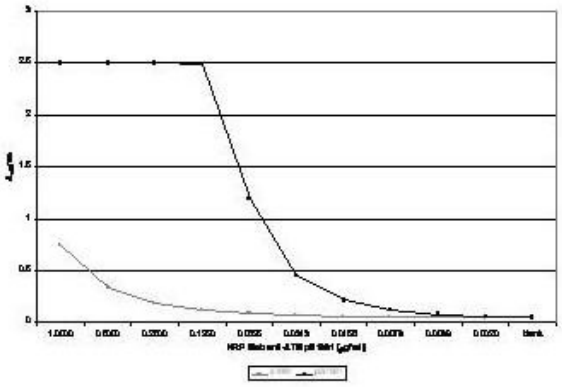


Immunofluorescence Microscopy

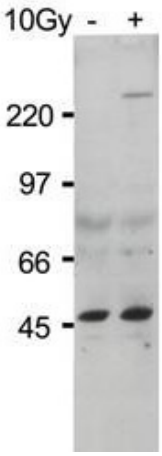
Rockland's anti-ATM pS1981 mouse monoclonal antibody (Catalog # 200-301-400) detects ATM phosphorylated on Ser 1981 by Indirect immunofluorescence microscopy. Shown are hTCEpi cells (courtesy of Dr. Danielle Robertson) infected with HSV-1 at MOI 5.0 and fixed at 8 hpi with 3% paraformaldehyde/2% sucrose for 10 min. After rinsing, cells were permeabilized with 0.5% Triton X-100 for 5 min, blocked with 3% BSA for 30 min, and stained with Rockland's primary anti-ATM pS1981 antibody overnight at 5 µg/mL (1:200). Secondary staining was performed with Alexa Fluor 594 anti-mouse antibody. Images were taken with Olympus AX70 compound epifluorescence microscope equipped with Spot RT Slider camera. Experiment was performed by Oleg Alekseev in the laboratory of Dr. Jane Azizkhan-Clifford at Drexel University College of Medicine.

Western Blot

Anti ATM Mab with human derived HEK293 cells treated with doxorubicin using Rockland's Protein A Purified Mab anti-ATM Protein Kinase pS1981(clone 10H11.E12). A 370 kDa band corresponding to phosphorylated ATM is detected (arrowhead, lane 2). The lysate was prepared with HALT phosphatase inhibitor (Pierce). Pre-incubation of peptide with 50 µg of immunizing phospho peptide negates specific staining (lane 1). Approximately 30 µg of lysate was added to each lane of an SDS-PAGE gel under non-reducing conditions. The protein was transferred to nitrocellulose using standard methods. After blocking the membrane was probed with the primary antibody diluted 1:500 overnight at 4°C followed by washes and reaction with a 1:10,000 dilution of IRDye™800 conjugated Gt-a-Mouse IgG [H&L] (code 610-132-121) for 40 min at room temperature. LICOR's Odyssey® Infrared Imaging System was used to scan and process the image. Other detection systems will yield similar results.

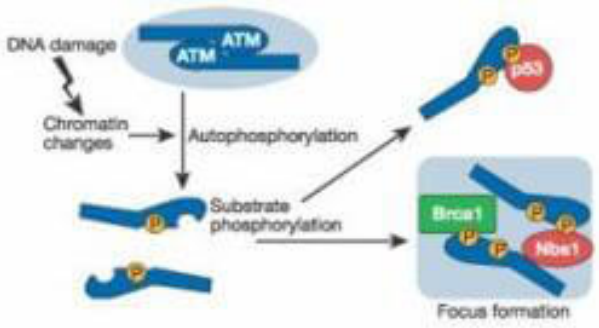


Immunofluorescence Microscopy
Anti ATM Antibody showing overlay of anti-ATM pS1981 staining. Cells were fixed 15 min after 5 Gy (IR+) of irradiation, then labeled with antibody. See Kitagawa et al. for additional details.



Western Blot
Western Blot of Rockland's Protein A Purified Mab anti-ATM Protein Kinase pS1981. Lane 1: HEK293 cells treated with doxorubicin pre-incubation of peptide with 50 µg of immunizing phospho peptide negates specific staining. Lane 2: HEK293 cells treated with doxorubicin. A 370 kDa band corresponding to phosphorylated ATM is detected (lane 2). The lysate was prepared with HALT phosphatase inhibitor (Pierce). Load: ~30µg. Primary antibody: anti-ATM Protein Kinase pS1981 diluted 1:500 overnight at 4°C. Secondary Antibody: IRDye™800 conjugated Gt-a-Mouse IgG [H&L] (code 610-132-121) at 1:10,000 for 40 min at room temperature. LICOR's Odyssey® Infrared Imaging System was used to scan and process the image. Other detection systems will yield similar results.

Pathway



Disclaimer

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