Datasheet for ABIN6656104

anti-ATM antibody (pSer1981)

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Overview

Quantity:	100 µg
Target:	ATM
Binding Specificity:	AA 1974-1988, pSer1981
Reactivity:	Human
Host:	Mouse
Clonality:	Monoclonal
Conjugate:	This ATM antibody is un-conjugated
Application:	Western Blotting (WB), Immunohistochemistry (IHC), ELISA, Flow Cytometry (FACS), Fluorescence Microscopy (FM)

Product Details

Immunogen:	Immunogen: Anti-ATM phospho S1981 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. Immunogen Type: Peptide
Clone:	10H11-E12
Isotype:	IgG1
Cross-Reactivity:	Human, Mouse (Murine), Rat (Rattus)
Purification:	Anti-ATM phospho S1981 Monoclonal Antibody is 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. By ELISA reactivity against SLAFEEGSpQSTTISS at a 1:1600 dilution shows an

Product Details

	absorbance >3.000, whereas reactivity against SLAFEEGSQSTTISS shows and absorbance of 0.145. Reactivity is observed against human ATM. Cross reactivity with ATM from other mammalian sources has not been tested. The immunogen has 91% sequence homology with mouse ATM.

Target Details

Target:	ATM
Alternative Name:	ATM (ATM Products)
Background:	Synonyms: mouse anti-ATM antibody, mouse anti-ATMpS1981 antibody, mouse anti- ATM pS1981 antibody, DKFZp781A0353 antibody, Human phosphatidylinositol 3 kinase homolog antibody, MGC74674 antibody, Serine protein kinase ATM antibody, T cell prolymphocytic leukemia antibody Background: Anti ATM pS1981 Antibody is a phospho site specific antibody and recognizes the product of the ATM gene that is mutated in the hereditary disease ataxia-telangiectasia. ATM 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, Brca1, FancD2 and SMC1 in the transient IR-induced S-phase arrest, and Brca1 and hRad17 in the G2/M checkpoint. Ideal for Cancer, Cell Signaling, Chromatin, Neuroscience and Signal Transduction research. Gene Name: ATM
Gene ID:	472
UniProt:	Q13315
Pathways:	p53 Signaling, Apoptosis, DNA Damage Repair, Inositol Metabolic Process, Positive Regulation of Response to DNA Damage Stimulus

Application Details

Application Notes:	Immunohistochemistry Dilution: Not Recommended Application Note: Protein A Purified Mab anti-ATM has been tested by ELISA, Flow Cytometry, IF, and western blotting against both the native and recombinant forms of the protein. The antibody immunoprecipitates ATM from irradiated human and transfected mouse cells. By immunofluorescence, foci are detected in irradiated human and mouse fibroblasts. This antibody is not recommended for immunohistochemistry. Instead, for IHC, use the clone 7C10D8 (p/n 200-301-500). ELISA Dilution: 1:20,000 - 1:100,000 Flow Cytometry Dilution: 5 µg/mL Western Blot Dilution: 1:200 - 1:2,000 IF Microscopy Dilution: 1:100 - 1:500
Restrictions:	For Research Use only

Handling

Format:	Liquid
Buffer:	Buffer: 0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2 0.01 % (w/v) Sodium Azide Stabilizer: None
Preservative:	Sodium azide
Precaution of Use:	This product contains Sodium azide: a POISONOUS AND HAZARDOUS SUBSTANCE which should be handled by trained staff only.
Storage:	RT,4 °C,-20 °C
Storage Comment:	Store Anti-ATM phospho S1981 Antibody at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.

Publications

Product cited in:	Chen, Chen, Huang, Gu, Qiu, Qian, Shao, Zhang, Hu, Li, He, Zhou, Abdel-Wahab, Zhang, Fu: "The Augmented R-Loop Is a Unifying Mechanism for Myelodysplastic Syndromes Induced by High-Risk Splicing Factor Mutations." in: **Molecular cell**, Vol. 69, Issue 3, pp. 412-425.e6, (2019) (PubMed).

Publications

Li, Mahon, Sweeney, Verschueren, Kantamani, Li, Hennigs, Marciano, Diebold, Abu-Halawa, Elliott, Sa, Guo, Wang, Cao, Guignabert, Sollier, Nickel, Kaschwich, Cimprich, Rabinovitch: "PPAR γ Interaction with UBR5/ATMIN Promotes DNA Repair to Maintain Endothelial Homeostasis." in: **Cell reports**, Vol. 26, Issue 5, pp. 1333-1343.e7, (2019) (PubMed).

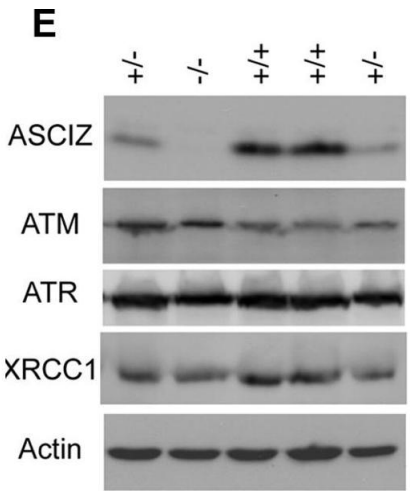
Parisotto, Grelet, El Bizri, Dai, Terzic, Eckert, Gargowitsch, Bornert, Metzger: "PTEN deletion in luminal cells of mature prostate induces replication stress and senescence in vivo." in: **The Journal of experimental medicine**, Vol. 215, Issue 6, pp. 1749-1763, (2019) (PubMed).

Ashraf, Hamidullah, Hasanain, Pandey, Maheshwari, Singh, Siddiqui, Konwar, Sashidhara, Sarkar : "Coumarin-chalcone hybrid instigates DNA damage by minor groove binding and stabilizes p53 through post translational modifications." in: **Scientific reports**, Vol. 7, pp. 45287, (2018) (PubMed).

Gursoy-Yuzugullu, Carman, Serafim, Myronakis, Valente, Price: "Epigenetic therapy with inhibitors of histone methylation suppresses DNA damage signaling and increases glioma cell radiosensitivity." in: **Oncotarget**, Vol. 8, Issue 15, pp. 24518-24532, (2018) (PubMed).

There are more publications referencing this product on: Product page

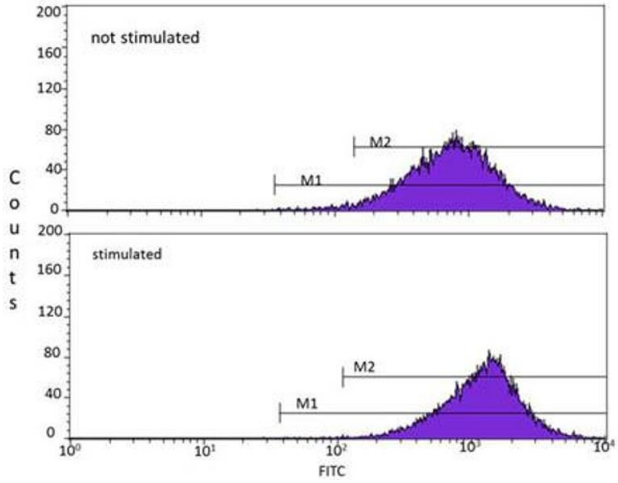
Images



Western Blotting

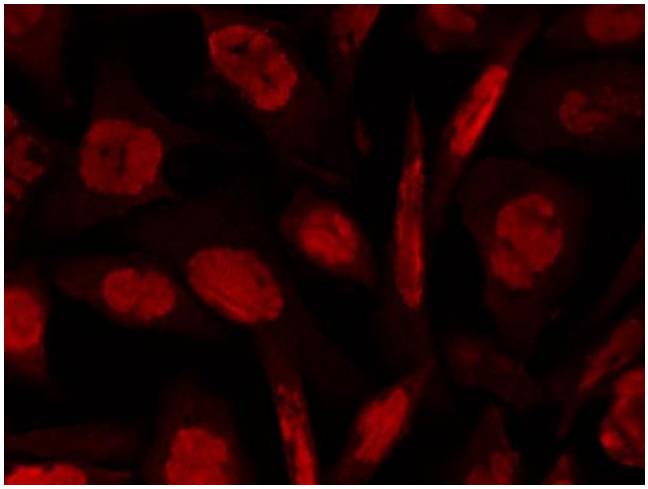
Image 1. Generation of Asciz-deficient mice.(A) Schematic comparison of human and mouse ASCIZ. ZF, Zn2+ finger, NLS, nuclear localization signal. Lollipops indicate predicted ATM/ATR phosphorylation sites. (B) Asciz gene structure and targeting strategy, drawn approximately to scale. The four exons (A-D) are indicated by black boxes, as are locations of oligonucleotide primers, ScaI restriction sites and the probe for genotyping, and the positions of loxP sites. (C) Southern blot (top) and PCR genotyping (bottom) of a randomly chosen litter from a heterozygote intercross at weaning. (D) PCR genotyping of a randomly chosen litter at E15.5. (E) Western blot analysis of head extracts of a

randomly chosen litter at E12.5 using the indicated antibodies. (F) Western blot analysis of the indicated tissues of an 8-week old male WT mouse, and E15.5 Asciz+/- and Asciz-/- head extracts as antibody specificity controls. - figure provided by CiteAb. Source: PMID20975950



Flow Cytometry

Image 2. Anti-ATMpS1981 Flow Cytometry Flow Cytometry of Mouse anti-ATMpS1981 antibody. Cells: HEK293. Stimulation: none – top image, 0.1mg/ml Zeocin for 3 hr – bottom image. Primary antibody: anti-ATM pS1981antibody at 5 µg/mL for 30 min at 4°C. Secondary antibody: anti-mouse IgG FITC at 1µg/ml, 30min at 4°C IN THE DARK.



Immunofluorescence

Image 3. Anti-ATM Monoclonal Antibody - Immunofluorescence Microscopy 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 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

Please check the product details page for more images. Overall 12 images are available for ABIN6656104.