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Datasheet for 600-601-400S

ATM phospho S1981 Antibody

Overview

Description:	Anti-ATM Protein Kinase pS1981 (SHEEP) Antibody - 600-601-400S
Item No.:	600-601-400S
Size:	25 µL
Applications:	ELISA, WB
Reactivity:	Human
Host Species:	Sheep

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, Brca1, FancD2 and SMC1 in the transient IR-induced S-phase arrest; and Brca1 and hRad17 in the G2/M checkpoint. This antibody is similar to the rabbit host antibody discussed by Bakkenist, C. J. & Kastan, M. B. in Nature 421, 499-506 (2003).
Synonyms:	sheep anti-ATM pS1981 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
Host Species:	Sheep
Clonality:	Polyclonal
Format:	IgG

Target Details

Gene Name:	ATM
Reactivity:	Human
PTM Specificity:	Phosphorylation
Immunogen Type:	Conjugated Peptide
Immunogen:	This antibody was affinity purified from whole sheep serum prepared by repeated immunizations with a synthetic phospho-peptide corresponding to a region near serine 1981 of human ATM conjugated to KLH using maleimide.
Purity/Specificity:	This affinity-purified antibody is directed against human ATM and is useful in determining its presence in various assays. This polyclonal anti-ATM antibody recognizes the phosphorylated epitope in native and over-expressed proteins found in various tissues and extracts. Reactivity is observed against human 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:	Affinity purified sheep anti-ATM has been tested by ELISA and western blotting against native form phosphorylated ATM PK.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
ELISA:	1:2,000 - 1:10,000
WB:	1:500 - 1:2,000

Formulation

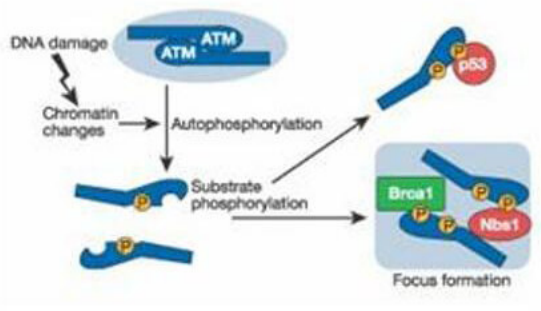
Physical State:	Liquid (sterile filtered)
Concentration:	1.0 mg/mL by UV absorbance at 280 nm
Buffer:	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Preservative:	0.01% (w/v) Sodium Azide

Stabilizer:	None

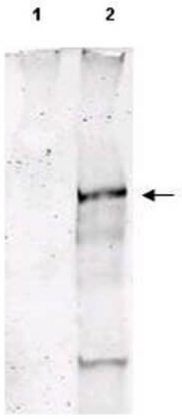
Shipping & Handling

Shipping Condition:	Dry Ice
Storage Condition:	Store vial at -20° C or below prior to opening. This vial contains a relatively low volume of reagent (25 µL). To minimize loss of volume dilute 1:10 by adding 225 µL of the buffer stated above directly to the vial. Recap, mix thoroughly and briefly centrifuge to collect the volume at the bottom of the vial. Use this intermediate dilution when calculating final dilutions as recommended below. Store the vial at -20°C or below after dilution. Avoid cycles of freezing and thawing.
Expiration:	Expiration date is three (3) months from date of receipt.

Images



Pathway
Schematic of ATM induction by DNA damage.



Western Blot

Western Blot of Sheep Anti-ATM pS1981 polyclonal antibody. Lane 1: untreated MCF-7 cell lysate (p/n W09-000 -360). Lane 2: Hydrogen Peroxide stimulated MCF-7 Whole Cell Lysate (p/n W09-000-366). Load: 35 µg per lane. Primary antibody: ATM pS1981 antibody at 1:1000 for 1 h at room temperature. Secondary antibody: IRDye™800 conjugated Donkey anti-Sheep IgG secondary antibody at 1:5,000 for 1h at room temperature. Block: 5% BLOTTO (B501) overnight at 4°C. Predicted/Observed size: 370 kDa, ATM (370 kDa) is indicated by an arrow. Other band(s): ATM splice variants and isoforms.

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