

## Anti-ATM Protein Kinase pS1981 (SHEEP) Antibody - 600-601-400

**Code:** 600-601-400

**Size:** 100 µg

**Product Description:** Anti-ATM Protein Kinase pS1981 (SHEEP) Antibody - 600-601-400

**Concentration:** 1.0 mg/mL by UV absorbance at 280 nm

**PhysicalState:** Liquid (sterile filtered)

<b>Label</b>	Unconjugated
<b>Host</b>	Sheep
<b>Gene Name</b>	ATM
<b>Species Reactivity</b>	human
<b>Buffer</b>	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
<b>Stabilizer</b>	None
<b>Preservative</b>	0.01% (w/v) Sodium Azide
<b>Storage Condition</b>	Store vial 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.
<b>Synonyms</b>	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
<b>Application Note</b>	Affinity purified sheep anti-ATM has been tested by ELISA and western blotting against native form phosphorylated ATM PK.
<b>Background</b>	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).
<b>Purity And Specificity</b>	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 and cross reactivity with ATM from other mammalian sources has not been tested.
<b>Assay Dilutions</b>	User Optimized
<b>ELISA</b>	1:2,000 - 1:10,000
<b>Western Blot</b>	1:500 - 1:2,000
<b>Other Assays</b>	User Optimized
<b>Expiration</b>	Expiration date is one (1) year from date of opening.
<b>Immunogen</b>	This antibody was affinity purified from whole sheep serum prepared by repeated immunizations with a synthetic peptide corresponding to a region near serine 1981 of human ATM conjugated to KLH using maleimide.
<b>General Reference</b>	Bakkenist, C. J. & Kastan, M. B. (2003). DNA damage activates ATM through intermolecular autophosphorylation and dimer dissociation. Nature 421, 499-506. Kitagawa R, Bakkenist CJ, McKinnon PJ, Kastan MB. (2004) Phosphorylation of SMC1 is a critical downstream event in the ATM-NBS1-BRCA1 pathway. Genes Dev. 18(12):1423-38. Falck, J. Coates, J. and Jackson, S.P. (2005) Conserved modes of recruitment of ATM, ATR and DNA-PKcs to sites of DNA damage. Nature 434: 605-611.
<b>Related Products</b>	

000-000-400	ATM pS1981 CONTROL PEPTIDE - 000-000-400
200-301-174	Anti-p53 (MOUSE) Monoclonal Antibody - 200-301-174
600-401-280	Anti-CHK2 pT68 (RABBIT) Antibody - 600-401-280
600-401-398	Anti-ATM Protein Kinase S1981 (RABBIT) Antibody - 600-401-398

## Related Links

UniProtKB - Q13315

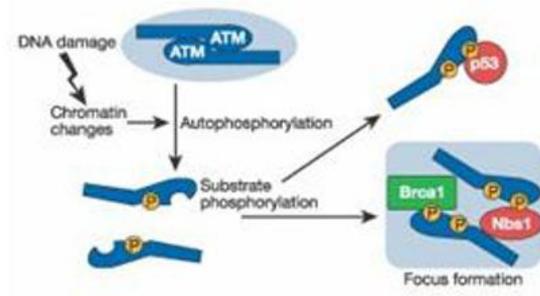
<http://www.uniprot.org/uniprot/Q13315>

NCBI - Q13315.3 <http://www.ncbi.nlm.nih.gov/protein/Q13315.3>

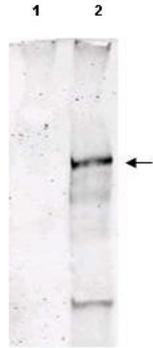
GeneID - 472

## Images

1 Schematic of ATM induction by DNA damage.



2 Western Blot of Sheep Anti-ATM pS1981 polyclonal antibody. Lane 1: untreated MCF-7 cell lysate. Lane 2: Hydrogen Peroxide stimulated MCF-7 Whole Cell Lysate. 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 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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