

Phospho-ATM(S1981) Antibody Blocking peptide
Synthetic peptide
Catalog # BP3504a**Specification**

Phospho-ATM(S1981) Antibody Blocking peptide - Product InformationPrimary Accession [Q13315](#)**Phospho-ATM(S1981) Antibody Blocking peptide - Additional Information****Gene ID** 472**Other Names**

Serine-protein kinase ATM, Ataxia telangiectasia mutated, A-T mutated, ATM

Target/Specificity

The synthetic peptide sequence used to generate the antibody [AP3504a](/product/products/AP3504a) was selected from the region of human Phospho-ATM-pS1981. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

Phospho-ATM(S1981) Antibody Blocking peptide - Protein Information**Name** ATM**Function**

Serine/threonine protein kinase which activates checkpoint signaling upon double strand breaks (DSBs), apoptosis and genotoxic stresses such as ionizing ultraviolet A light (UVA), thereby acting as a DNA damage sensor (PubMed:<http://www.uniprot.org/citations/9733514> target="_blank">9733514, PubMed:<http://www.uniprot.org/citations/10550055> target="_blank">10550055, PubMed:<http://www.uniprot.org/citations/10839545> target="_blank">10839545, PubMed:<http://www.uniprot.org/citations/10910365> target="_blank">10910365, PubMed:<http://www.uniprot.org/citations/12556884> target="_blank">12556884, PubMed:<http://www.uniprot.org/citations/14871926> target="_blank">14871926, PubMed:<http://www.uniprot.org/citations/15456891> target="_blank">15456891, PubMed:<http://www.uniprot.org/citations/15448695> target="_blank">15448695, PubMed:<http://www.uniprot.org/citations/15916964> target="_blank">15916964, PubMed:<http://www.uniprot.org/citations/17923702>

target="_blank">17923702). Recognizes the substrate consensus sequence [ST]-Q (PubMed:9733514, PubMed:10550055, PubMed:10839545, PubMed:10910365, PubMed:12556884, PubMed:14871926, PubMed:15456891, PubMed:15448695, PubMed:15916964, PubMed:17923702). Phosphorylates 'Ser-139' of histone variant H2AX at double strand breaks (DSBs), thereby regulating DNA damage response mechanism (By similarity). Also plays a role in pre-B cell allelic exclusion, a process leading to expression of a single immunoglobulin heavy chain allele to enforce clonality and monospecific recognition by the B-cell antigen receptor (BCR) expressed on individual B-lymphocytes. After the introduction of DNA breaks by the RAG complex on one immunoglobulin allele, acts by mediating a repositioning of the second allele to pericentromeric heterochromatin, preventing accessibility to the RAG complex and recombination of the second allele. Also involved in signal transduction and cell cycle control. May function as a tumor suppressor. Necessary for activation of ABL1 and SAPK. Phosphorylates DYRK2, CHEK2, p53/TP53, FBXW7, FANCD2, NFKBIA, BRCA1, CTIP, nibrin (NBN), TERF1, UFL1, RAD9, UBQLN4 and DCLRE1C (PubMed:9843217, PubMed:9733515, PubMed:10550055, PubMed:10766245, PubMed:10839545, PubMed:10910365, PubMed:10802669, PubMed:10973490, PubMed:11375976, PubMed:12086603, PubMed:15456891, PubMed:19965871, PubMed:30612738, PubMed:30886146, PubMed:26774286). May play a role in vesicle and/or protein transport. Could play a role in T-cell development, gonad and neurological function. Plays a role in replication-dependent histone mRNA degradation. Binds DNA ends. Phosphorylation of DYRK2 in nucleus in response to genotoxic stress prevents its MDM2-mediated ubiquitination and subsequent proteasome degradation (PubMed:19965871). Phosphorylates ATF2 which stimulates its function in DNA damage response (PubMed:15916964). Phosphorylates ERCC6 which is essential for its chromatin remodeling activity at DNA double-strand breaks (PubMed:29203878). Phosphorylates TTC5/STRAP at 'Ser-203' in the cytoplasm in response to DNA damage, which promotes TTC5/STRAP nuclear localization (PubMed:15448695). Also involved in pexophagy by mediating phosphorylation of PEX5: translocated to peroxisomes in response to reactive oxygen species (ROS), and catalyzes phosphorylation of PEX5, promoting PEX5 ubiquitination and induction of pexophagy (PubMed:26344566).

Cellular Location

Nucleus. Cytoplasmic vesicle. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome {ECO:0000250|UniProtKB:Q62388}. Peroxisome matrix. Note=Primarily nuclear (PubMed:9050866, PubMed:9150358). Found also in endocytic vesicles in association with

beta-adaptin (PubMed:9707615). Translocated to peroxisomes in response to reactive oxygen species (ROS) by PEX5 (PubMed:26344566)

Tissue Location

Found in pancreas, kidney, skeletal muscle, liver, lung, placenta, brain, heart, spleen, thymus, testis, ovary, small intestine, colon and leukocytes

Phospho-ATM(S1981) Antibody Blocking peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Blocking Peptides](#)

Phospho-ATM(S1981) Antibody Blocking peptide - Images**Phospho-ATM(S1981) Antibody Blocking peptide - Background**

ATM belongs to the PI3/PI4-kinase family. This protein is an important cell cycle checkpoint kinase that phosphorylates; thus, it functions as a regulator of a wide variety of downstream proteins, including tumor suppressor proteins p53 and BRCA1, checkpoint kinase CHK2, checkpoint proteins RAD17 and RAD9, and DNA repair protein NBS1. ATM and the closely related kinase ATR are thought to be master controllers of cell cycle checkpoint signaling pathways that are required for cell response to DNA damage and for genome stability. Mutations in the gene encoding ATM are associated with ataxia telangiectasia, an autosomal recessive disorder.

Phospho-ATM(S1981) Antibody Blocking peptide - References

Brunet,J.,Clin. Genet. 73 (5), 465-473 (2008)Tsai,W.B., Nat. Cell Biol. 10 (4), 460-467 (2008)