

Rabbit anti-Human ATM Polyclonal Antibody | anti-ATM antibody

Phospho-ATM (Ser1981) Antibody

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA329398	Rabbit	Human	ELISA, Immunohistochemistry, Western Blot

PRODUCT SYNONYMS

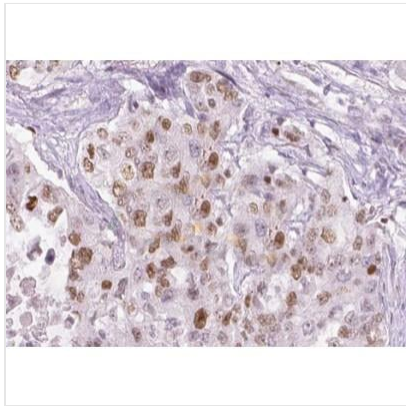
ATM; Polyclonal Antibody; Phospho-ATM (Ser1981) Antibody; A-T mutated; A-T mutated homolog; AT mutated; AT1; ATA; Ataxia telangiectasia mutated; Ataxia telangiectasia mutated gene; Ataxia telangiectasia mutated homolog (human); Ataxia telangiectasia mutated homolog; ATC; ATD; ATDC; ATE; ATM serine/threonine kinase; ATM_HUMAN; DKFZp781A0353; MGC74674; OTTHUMP00000232981; Serine protein kinase ATM; Serine-protein kinase ATM; Serine/threonine-protein kinase ATM; Tefu; TEL1; telomere maintenance 1; homolog; TELO1; Telomere fusion protein; anti-ATM antibody

PRODUCT SPECIFICATIONS

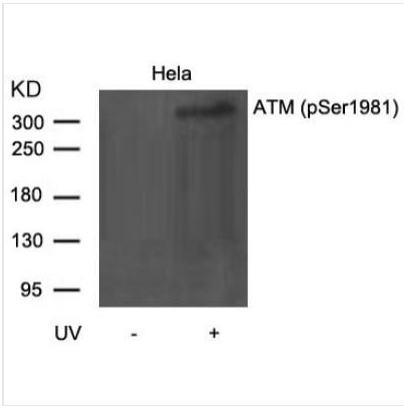
Host	Rabbit
Reactivity	Human
Clonality	Polyclonal
Isotype	Supplied at 1.0mg/mL in phosphate buffered saline (without Mg ²⁺ and Ca ²⁺), pH7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Specificity	Phospho-ATM (Ser1981) Antibody detects endogenous levels of ATM only when phosphorylated at serine 1981. Tissue Specificity: Found in pancreas, kidney, skeletal muscle, liver, lung, placenta, brain, heart, spleen, thymus, testis, ovary, small intestine, colon and leukocytes.
Purity/Purification	The antibody is from purified rabbit serum by affinity purification via sequential chromatography on phospho-peptide and non-phospho-peptide affinity columns.
Form/Format	Liquid. Supplied at 1.0mg/mL in phosphate buffered saline (without Mg ²⁺ and Ca ²⁺), pH7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Applicable Applications for anti-ATM antibody	ELISA (Peptide ELISA), IHC (Immunohistochemistry), WB (Western Blot)
Immunogen	Peptide sequence around phosphorylation site of serine 1981 (E-G-S (p)-Q-S) derived from Human ATM.
Conjugation	Unconjugated
Fragment	Fab fragment
Post Translational Modifications	Phosphorylated by NUAK1/ARK5. Autophosphorylation on Ser-367, Ser-1893, Ser-1981 correlates with DNA damage-mediated activation of the kinase. During the late stages of DNA damage response, dephosphorylated following deacetylation by SIRT7, leading to ATM deactivation. Acetylation, on DNA damage, is required for activation of the kinase activity, dimer-monomer transition, and subsequent autophosphorylation on Ser-1981. Acetylated in vitro by KAT5/TIP60. Deacetylated by SIRT7 during the late stages of DNA damage response, promoting ATM dephosphorylation and subsequent deactivation.
Subunit Structure	Homodimer. Dimers or tetramers in inactive state. On DNA damage, autophosphorylation dissociates ATM into monomers rendering them catalytically active. Binds p53/TP53, ABL1, BRCA1, NBN/nibrin and TERF1. Part of the BRCA1-associated genome surveillance complex (BASC), which contains BRCA1, MSH2, MSH6, MLH1, ATM, BLM, PMS2 and the RAD50-MRE11-NBN protein complex. This association could be a dynamic process changing throughout the cell cycle and within subnuclear domains. Interacts with RAD17; DNA damage promotes the association. Interacts with EEF1E1; the interaction, induced on DNA damage, up-regulates TP53. Interacts with DCLRE1C, KAT8, KAT5, NABP2, ATMIN and CEP164. Interacts with AP2B1 and AP3B2; the interaction occurs in cytoplasmic vesicles (By similarity). Interacts with TELO2 and TTI1. Interacts with DDX1. Interacts with BRAT1.

Similarity	The FATC domain is required for interaction with KAT5.Belongs to the PI3/PI4-kinase family. ATM subfamily.
Subcellular Location	Nucleus. Cytoplasmic vesicle. Note: Primarily nuclear. Found also in endocytic vesicles in association with beta-adaptin.
Preparation and Storage	Supplied at 1.0mg/mL in phosphate buffered saline (without Mg2+ and Ca2+), pH7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.

IMAGES



IHC (Immunohiostchemistry)
Staining human liver carcinoma sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.



WB (Western Blot)
Western blot analysis of extracts from HeLa cells untreated or treated with UV using ATM(Phospho-Ser1981) Antibody

ADDITIONAL INFORMATION

Related Product Information for anti-ATM antibody	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. Recognizes the substrate consensus sequence [ST]-Q. Phosphorylates 'Ser-139' of histone variant H2AX at double strand breaks (DSBs), thereby regulating DNA damage response mechanism. 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, FANCD2, NFKBIA, BRCA1, CTIP, nibrin (NBN), TERF1, RAD9, UBQLN4 and DCLRE1C. 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. Phosphorylates ATF2 which stimulates its function in DNA damage response. Phosphorylates ERCC6 which is essential for its chromatin remodeling activity at DNA double-strand breaks. ATM encoded by this gene 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. This protein 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 this gene are associated with ataxia telangiectasia, an autosomal recessive disorder. Two transcript variants encoding different isoforms have been found for this gene.
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NCBI AND UNIPROT INFORMATION

NCBI GI #	187951615
NCBI GeneID	472
UniProt Accession #	Q13315; O15429; Q12758; Q16551; Q93007; Q9NP02; Q9UCX7; B2RNX5

Molecular Weight	350,714 Da
NCBI Official Full Name	Ataxia telangiectasia mutated
NCBI Official Synonym Full Names	ataxia telangiectasia mutated
NCBI Official Symbol	ATM
NCBI Official Synonym Symbols	AT1; ATA; ATC; ATD; ATE; ATDC; TEL1; TELO1
NCBI Protein Information	serine-protein kinase ATM; AT mutated; A-T mutated; TEL1, telomere maintenance 1, homolog
UniProt Protein Name	Serine-protein kinase ATM
UniProt Gene Name	ATM
UniProt Synonym Gene Names	A-T mutated
UniProt Entry Name	ATM_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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