

# ATM Rabbit mAb

Catalog # AP78624

## Product Information

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<b>Application</b>	WB, IF, FC, ICC, IP
<b>Primary Accession</b>	<a href="#">Q13315</a>
<b>Reactivity</b>	Rat, Human, Mouse
<b>Host</b>	Rabbit
<b>Clonality</b>	Monoclonal Antibody
<b>Isotype</b>	IgG
<b>Conjugate</b>	Unconjugated
<b>Immunogen</b>	A synthesized peptide derived from human ATM
<b>Purification</b>	Affinity Chromatography
<b>Calculated MW</b>	350687

## Additional Information

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<b>Gene ID</b>	472
<b>Other Names</b>	ATM
<b>Dilution</b>	WB~~1/500-1/1000 IF~~1:50~200 FC~~1:10~50 ICC~~N/A IP~~N/A
<b>Format</b>	Liquid in 10mM PBS, pH 7.4, 150mM sodium chloride, 0.05% BSA, 0.02% sodium azide and 50% glycerol.
<b>Storage</b>	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

## Protein Information

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<b>Name</b>	ATM
<b>Function</b>	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: <a href="#">10550055</a> , PubMed: <a href="#">10839545</a> , PubMed: <a href="#">10910365</a> , PubMed: <a href="#">12556884</a> , PubMed: <a href="#">14871926</a> , PubMed: <a href="#">15064416</a> , PubMed: <a href="#">15448695</a> , PubMed: <a href="#">15456891</a> , PubMed: <a href="#">15790808</a> , PubMed: <a href="#">15916964</a> , PubMed: <a href="#">17923702</a> , PubMed: <a href="#">21757780</a> , PubMed: <a href="#">24534091</a> , PubMed: <a href="#">35076389</a> , PubMed: <a href="#">9733514</a> ). Recognizes the substrate consensus sequence [ST]-Q (PubMed: <a href="#">10550055</a> , PubMed: <a href="#">10839545</a> , PubMed: <a href="#">10910365</a> , PubMed: <a href="#">12556884</a> , PubMed: <a href="#">14871926</a> , PubMed: <a href="#">15448695</a> , PubMed: <a href="#">15456891</a> , PubMed: <a href="#">15916964</a> , PubMed: <a href="#">17923702</a> , PubMed: <a href="#">24534091</a> , PubMed: <a href="#">9733514</a> ). 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, CREBBP/CBP, RBBP8/CTIP, FBXO46, MRE11, nibrin (NBN), RAD50, RAD17, PELI1, TERF1, UFL1, RAD9, UBQLN4 and DCLRE1C (PubMed:[10550055](#), PubMed:[10766245](#), PubMed:[10802669](#), PubMed:[10839545](#), PubMed:[10910365](#), PubMed:[10973490](#), PubMed:[11375976](#), PubMed:[12086603](#), PubMed:[15456891](#), PubMed:[19965871](#), PubMed:[21757780](#), PubMed:[24534091](#), PubMed:[26240375](#), PubMed:[26774286](#), PubMed:[30171069](#), PubMed:[30612738](#), PubMed:[30886146](#), PubMed:[30952868](#), PubMed:[38128537](#), PubMed:[9733515](#), PubMed:[9843217](#)). 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

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