



Rabbit Anti-ATM antibody

SL1370R

Product Name:	ATM
Chinese Name:	毛细血管扩张性共济失调症突变蛋白抗体
Alias:	ataxia telangiectasia mutated; AT complementation group A; AT complementation group C; AT complementation group D; AT complementation group E; AT mutated; AT protein; AT1; ATA; Ataxia telangiectasia gene mutated in human beings; ATC; ATDC; ATE; ATM; DKFZp781A0353; Human phosphatidylinositol 3 kinase homolog; MGC74674; Serine protein kinase ATM; T cell prolymphocytic leukemia; TEL1; TPLL.
Organism Species:	Rabbit
Clonality:	Polyclonal
React Species:	Human,Mouse,Rat,
Applications:	ELISA=1:500-1000IHC-P=1:400-800IHC-F=1:400-800Flow-Cyt=1μg/TestIF=1:100-500 (Paraffin sections need antigen repair) not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Molecular weight:	370kDa
Cellular localization:	The nucleuscytoplasmic
Form:	Lyophilized or Liquid
Concentration:	1mg/ml
immunogen:	KLH conjugated synthetic peptide derived from human ATM:2681-2750/3066
Lsotype:	IgG
Purification:	affinity purified by Protein A
Storage Buffer:	0.01M TBS(pH7.4) with 1% BSA, 0.03% Proclin300 and 50% Glycerol.
Storage:	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. The lyophilized antibody is stable at room temperature for at least one month and for greater than a year when kept at -20°C. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.
PubMed:	PubMed
Product Detail:	ATM is a 370 kDa nuclear phosphoprotein involved in the autosomal recessive disease Ataxia Telangiectasia (AT). ATM belongs to a novel family of proteins associated with cell cycle regulation, apoptosis, and response to DNA damage repair (DNA damage

caused by such things as ionizing irradiation activates ATM kinase). The C terminal region has extensive homology to the catalytic domains of Phosphatidylinositol 3 kinases (PI3 kinases).

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. Recognizes the substrate consensus sequence [ST]-Q. Phosphorylates 'Ser-139' of histone variant H2AX/H2AFX 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 p53/TP53, FANCD2, NFKBIA, BRCA1, CTIP, nibrin (NBN), TERF1, RAD9 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.

Subcellular Location:

Nucleus. Cytoplasmic vesicle. Primarily nuclear. Found also in endocytic vesicles in association with beta-adaptin.

Tissue Specificity:

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

Post-translational modifications:

Phosphorylated by NUA1/ARK5. Autophosphorylation on Ser-367, Ser-1893, Ser-1981 correlates with DNA damage-mediated activation of the kinase.

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.

DISEASE:

Defects in ATM are the cause of ataxia telangiectasia (AT) [MIM:208900]; also known as Louis-Bar syndrome, which includes four complementation groups: A, C, D and E. This rare recessive disorder is characterized by progressive cerebellar ataxia, dilation of the blood vessels in the conjunctiva and eyeballs, immunodeficiency, growth retardation and sexual immaturity. AT patients have a strong predisposition to cancer; about 30% of patients develop tumors, particularly lymphomas and leukemias. Cells from affected individuals are highly sensitive to damage by ionizing radiation and resistant to

inhibition of DNA synthesis following irradiation.

Note=Defects in ATM contribute to T-cell acute lymphoblastic leukemia (TALL) and T-prolymphocytic leukemia (TPLL). TPLL is characterized by a high white blood cell count, with a predominance of prolymphocytes, marked splenomegaly, lymphadenopathy, skin lesions and serous effusion. The clinical course is highly aggressive, with poor response to chemotherapy and short survival time. TPLL occurs both in adults as a sporadic disease and in younger AT patients.

Note=Defects in ATM contribute to B-cell non-Hodgkin lymphomas (BNHL), including mantle cell lymphoma (MCL).

Note=Defects in ATM contribute to B-cell chronic lymphocytic leukemia (BCLL).

BCLL is the commonest form of leukemia in the elderly. It is characterized by the accumulation of mature CD5+ B lymphocytes, lymphadenopathy, immunodeficiency and bone marrow failure.

Similarity:

Belongs to the PI3/PI4-kinase family. ATM subfamily.

Contains 1 FAT domain.

Contains 1 FATC domain.

Contains 1 PI3K/PI4K domain.

SWISS:

Q62388

Gene ID:

472

Database links:

[Entrez Gene: 472](#)Human

[Entrez Gene: 11920](#)Mouse

[Entrez Gene: 300711](#)Rat

[Ommim: 607585](#)Human

[SwissProt: Q13315](#)Human

[SwissProt: Q62388](#)Mouse

[SwissProt: P17764](#)Rat

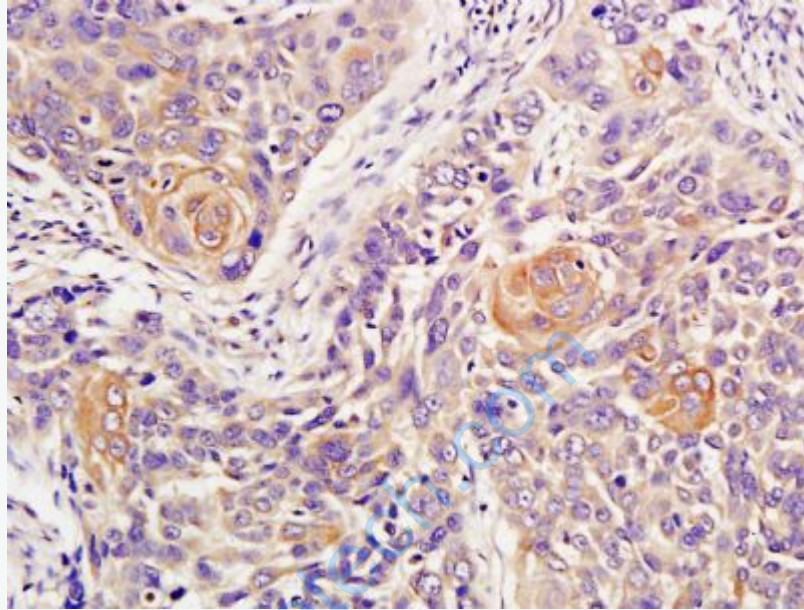
[Unigene: 367437](#)Human

[Unigene: 5088](#)Mouse

[Unigene: 214048](#)Rat

Important Note:

This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

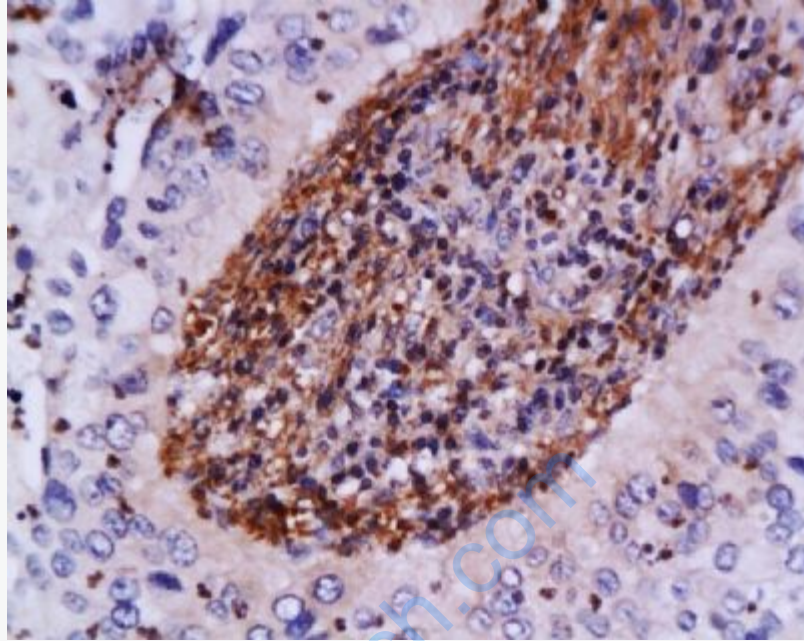


Picture:

Tissue/cell: human lung carcinoma; 4% Paraformaldehyde-fixed and paraffin-embedded;

Antigen retrieval: citrate buffer (0.01M, pH 6.0), Boiling bathing for 15min; Block endogenous peroxidase by 3% Hydrogen peroxide for 30min; Blocking buffer (normal goat serum,C-0005) at 37°C for 20 min;

Incubation: Anti-ATM Polyclonal Antibody, Unconjugated(SL1370R) 1:300, overnight at 4°C, followed by conjugation to the secondary antibody(SP-0023) and DAB(C-0010) staining



Tissue/cell: human cervical carcinoma; 4% Paraformaldehyde-fixed and paraffin-embedded;

Antigen retrieval: citrate buffer (0.01M, pH 6.0), Boiling bathing for 15min; Block endogenous peroxidase by 3% Hydrogen peroxide for 30min; Blocking buffer (normal goat serum,C-0005) at 37°C for 20 min;

Incubation: Anti-ATM Polyclonal Antibody, Unconjugated(SL1370R) 1:200, overnight at 4°C, followed by conjugation to the secondary antibody(SP-0023) and DAB(C-0010) staining

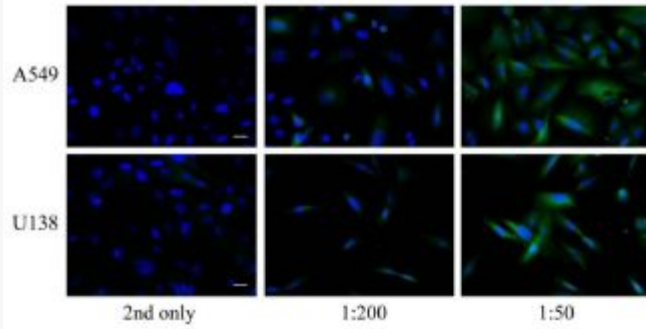
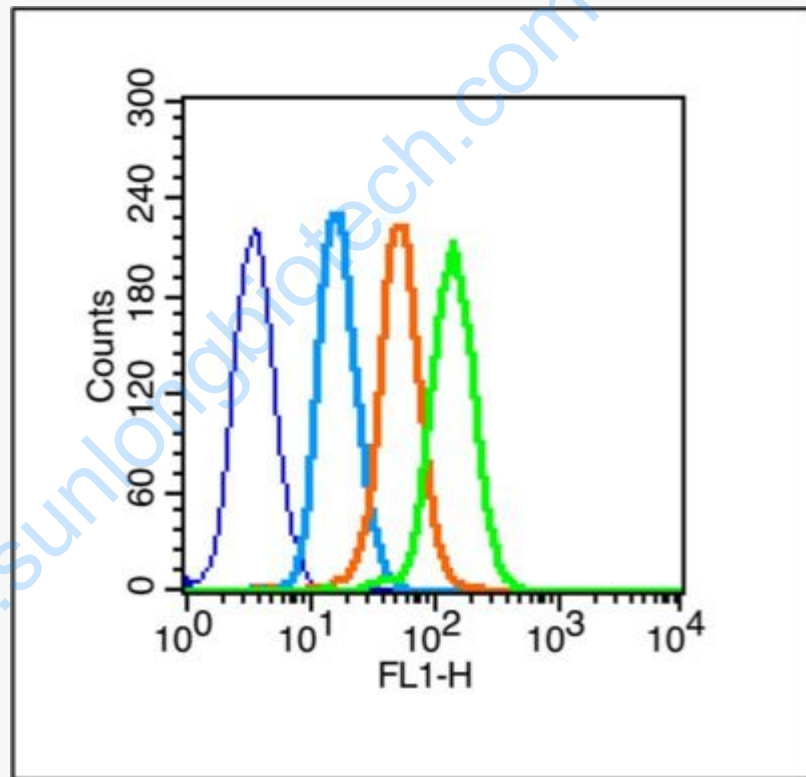


Figure 1. IF validation. A549 and U138 cells were stained with rabbit polyclonal antibody against ATM with dilution at 1:200 and 1:50. 2nd antibody without primary antibody was used as control included here. Fluorescent signals were detected with 1:50 primary antibody dilution in both A549 and U138 cells it shows more prominent cytoplasmic staining than nucleus staining. Scale bar= 20 μ m.



Blank control (blue line): HeLa (blue).

Primary Antibody (green line): Rabbit Anti- ATM antibody (SL1370R)

Dilution: $1\mu\text{g} / 10^6$ cells;

Isotype Control Antibody (orange line): Rabbit IgG .

Secondary Antibody (white blue line): Goat anti-rabbit IgG-FITC

Dilution: 1 μ g /test.

Protocol

The cells were fixed with 2% paraformaldehyde (10 min) , then permeabilized with 90% ice-cold methanol for 20 min on ice. Cells stained with Primary Antibody for 30 min at room temperature. The cells were then incubated in 1 X PBS/2%BSA/10% goat serum to block non-specific protein-protein interactions followed by the antibody for 15 min at room temperature. The secondary antibody used for 40 min at room temperature. Acquisition of 20,000 events was performed.