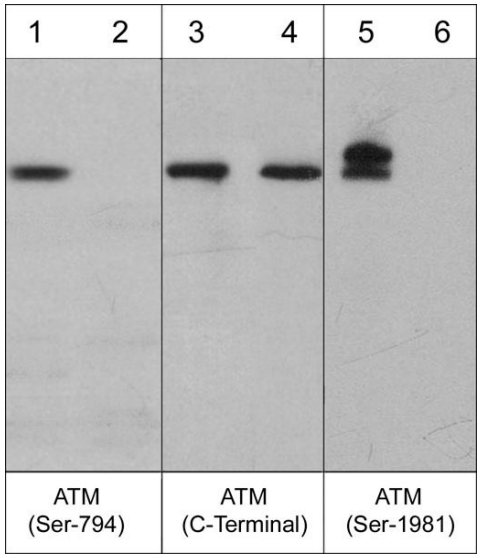
ATM (Ser-794), phospho-specific

Rabbit Polyclonal

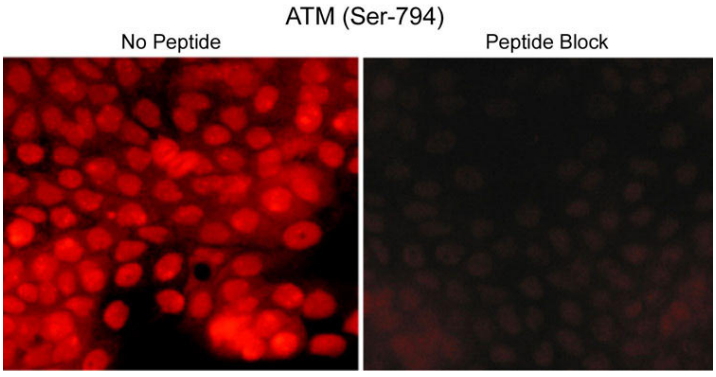
Cat. # AP3631
Size 100 µl

Background

Ataxia telangiectasia mutated kinase (ATM) is a serine/threonine kinase that regulates cell cycle checkpoints and DNA repair. Mutations of ATM cause a spectrum of defects ranging from neurodegeneration to cancer predisposition. Activation of ATM after DNA damage involves Cdk5 mediated phosphorylation of Ser -794 followed by autophosphorylation at Ser-1891. Active ATM kinase regulates a number of proteins involved in cell cycle checkpoint control, apoptosis and DNA repair. The Cdk5–ATM pathway regulates phosphorylation and function of the ATM targets p53 and H2AX in postmitotic neurons. Other known substrates of ATM include Chk2, Chk1, CtIP, 4E-BP1, BRCA1, RPA3, SMC1, FANCD2, Rad17, Artemis, Nbs1, and the I-2 regulatory subunit of PP1. Thus, activation of Cdk5 by DNA damage may be an important initiator of ATM-dependent regulation of cell cycle checkpoints.



Western blot of human A431 cells treated with Calyculin A (100 nM) for 30 min. Blot lanes were untreated (lanes 1, 3, & 5) or treated with lambda phosphatase (lanes 2, 4, & 6) then probed with anti-ATM (Ser -794) (lanes 1 & 2), anti-ATM (C-Terminal) (lanes 3 & 4), or anti-ATM (Ser-1981) (lanes 5 & 6).



Immunocytochemical labeling of ATM phosphorylation in calyculin A-treated A431 cells. The cells were labeled with rabbit polyclonal anti-ATM (Ser-794) (AP3631) antibody in the absence (Left) or presence (Right) of blocking peptide (AX3635). The antibody was detected using appropriate secondary antibody conjugated to DyLight® 594.

Background References

Shiloh, Y. (1997) Annu Rev Genet. 31:635.
Lee, J.H. & Paull, T.T. (2007) Oncogene 26:7741.
Tian, B. et al. (2009) Nat Cell Biol. 11:211.

Product Citations

Bourton, EC et al. (2015) J Cancer Sci Ther. 7(2):95.
FC: human breast cancer cells

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Immunogen

Uniprot ID: Q13315

Phospho-ATM (Ser-794) synthetic peptide (coupled to carrier protein) corresponding to amino acids surrounding Ser-794 in human ATM. This sequence is well conserved in rat and mouse ATM.

Buffer and Storage

Rabbit polyclonal, affinity-purified antibody is supplied in 100µl phosphate-buffered saline, 50% glycerol, 1 mg/ml BSA, and 0.05% sodium azide. Store at –20°C. Stable for 1 year.

Applications

WB	1:1000
ELISA	1:2000
ICC	1:200
FC	1:100

Species Reactivity

Hu, Rt, Ms

End user should determine optimal dilution for their particular applications and experiments.
Western blot membranes were incubated with diluted antibody in 5% non-fat milk, Tris buffer, 0.04% Tween20 for 1 hour at room temperature.
Abbreviations: E = ELISA, ICC = immunocytochemistry, IHC = immunohistochemistry, IP = immunoprecipitation, MS = mass spectrometry, WB = western blot
Hu = Human, Ms = Mouse, Rt = Rat, Ck = Chicken, F = Frog, B = Bovine

Specificity

This antibody was affinity purified using phospho-ATM (Ser-794) peptide (without carrier). The antibody detects a 370 kDa* band corresponding to ATM on SDS-PAGE immunoblots of calyculin A treated Jurkat, A431, HeLa, and rat PC12 cells. This reactivity is removed after lambda phosphatase treatment.

*All molecular weights (MW) are confirmed by comparison to MW standards and to western blot mobilities of known proteins with similar MW.
"Native" western blot utilizes non-reducing sample buffer (no mercaptoethanol or SDS), normal SDS-PAGE gel electrophoresis, and no methanol in transfer buffers.

Related Products

AM3611 ATM (C-terminal region) Mouse Monoclonal

AM3661 ATM (Ser-1981), phospho-specific Mouse Monoclonal

CM2361 Cdk5 Mouse Monoclonal

CM2311 Cdk1 (Tyr-15)[conserved site], phospho-specific Mouse Monoclonal

MS3001 Anti-Mouse Ig:HRP Donkey Polyclonal

RS3251 Anti-Rabbit Ig Light-Chain Specific:HRP Mouse Monoclonal

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