Revision 1

Store at -20C

#58014

Phospho-ATR (Thr1989) Antibody

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H	Endogenous	300	Rabbit	#Q13535	545

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Phospho-ATR (Thr1989) Antibody recognizes endogenous levels of ATR protein only when phosphorylated at Thr1989.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Thr1989 of human ATR protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Ataxia telangiectasia mutated kinase (ATM) and ataxia telangiectasia and Rad3-related kinase (ATR) are PI3 kinase-related kinase (PIKK) family members that phosphorylate multiple substrates on serine or threonine residues that are followed by a glutamine in response to DNA damage or replication blocks (1-3). Despite the essential role of ATR in cell cycle signaling and DNA repair processes, little is known about its activation. ATR was long thought to exist in a constitutively active state in cells, with DNA damage-induced signaling occurring via recruitment of ATR to single stranded DNA and sites of replication stress. Phosphorylation of ATR at serine 428 in response to UV-induced DNA damage has been suggested as a means of activating ATR (4,5). Recent work has shown autophosphorylation of ATR at threonine 1989. Like ATM Ser1981, phosphorylation of ATR Thr1989 occurs in response to DNA damage, indicating that phosphorylation at this site is important in ATR-mediated signaling (6,7).

Background References

1. Kastan, M.B. and Lim, D.S. (2000) *Nat Rev Mol Cell Biol* 1, 179-86.
2. Abraham, R.T. (2004) *DNA Repair (Amst)* 3, 883-7.
3. Shechter, D. et al. (2004) *DNA Repair (Amst)* 3, 901-8.
4. Vauzour, D. et al. (2007) *Arch Biochem Biophys* 468, 159-66.
5. Smith, J. et al. (2010) *Adv Cancer Res* 108, 73-112.
6. Nam, E.A. et al. (2011) *J Biol Chem* 286, 28707-14.
7. Liu, S. et al. (2011) *Mol Cell* 43, 192-202.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human

Trademarks and Patents

Limited Uses

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