

**ATR (E1S3S) Rabbit mAb**

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

<b>Applications:</b> W, IP	<b>Reactivity:</b> H M R	<b>Sensitivity:</b> Endogenous	<b>MW (kDa):</b> 300	<b>Source/Isotype:</b> Rabbit IgG	<b>UniProt ID:</b> #Q13535	<b>Entrez-Gene Id:</b> 545
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**Product Usage Information****Application**

Western Blotting  
Immunoprecipitation

**Dilution**

1:1000  
1:200

**Storage**

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. *Do not aliquot the antibody.*

**Specificity/Sensitivity**

ATR (E1S3S) Rabbit mAb recognizes endogenous levels of total ATR protein.

**Source / Purification**

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro1456 of human ATR protein.

**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 **IP:** Immunoprecipitation

**Cross-Reactivity Key**

**H:** Human **M:** Mouse **R:** Rat

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