Store at -20°C

#53217

PhosphoPlus® ATR (Thr1989) Antibody Duet

Cell Signaling TECHNOLOGY®

Support: +1-978-867-2388 (U.S.)
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Entrez-Gene ID #545
UniProt ID #Q13535

New 05/20

For Research Use Only. Not For Use In Diagnostic Procedures.

Products Included	Product #	Quantity	Mol. Wt.	Isotype
ATR (E1S3S) Rabbit mAb	13934	100 µl	300 kDa	Rabbit IgG
Phospho-ATR (Thr1989) (D5K8W) Rabbit mAb	30632	100 µl	300 kDa	Rabbit IgG

See www.cellsignal.com for individual component applications, species cross-reactivity, dilutions and additional application protocols.

Description: PhosphoPlus® Duets from Cell Signaling Technology (CST) provide a means to assess protein activation status. Each Duet contains an activation-state and total protein antibody to your target of interest. These antibodies have been selected from CST's product offering based upon superior performance in specified applications.

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).

Specificity/Sensitivity: ATR (E1S3S) Rabbit mAb recognizes endogenous levels of total ATR protein. Phospho-ATR (Thr1989) (D5K8W) Rabbit mAb recognizes endogenous levels of ATR protein only when phosphorylated at Thr1989.

Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro1456 of human ATR protein. Phosphorylation-specific monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Thr1989 of human ATR protein.

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.*

For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com.

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.

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Applications: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide **Species Cross-Reactivity:** **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.