

# p-ATR (Ser 428): sc-109912

## BACKGROUND

Members of the PIK (phosphatidylinositol kinase)-related kinase family are high molecular weight kinases involved in cell cycle progression, DNA recombination and detection of DNA damage. One member of the PI 3-/PI 4-kinase family is ATR (ataxia-telangiectasia- and Rad3-related), also known as FRP1 (for FRAP-related protein 1). ATR is most closely related to ATM, a protein kinase encoded by the gene mutated in ataxia telangiectasia. ATR is also closely related to three of the family members involved in checkpoint function: Mei-41 (*Drosophila*), Mec1p (*S. cerevisiae*) and Rad3 (*S. pombe*), and as such may be the functional human counterpart of these proteins. This kinase has been shown to phosphorylate checkpoint kinase Chk1, checkpoint proteins Rad17 and Rad9, as well as tumor suppressor protein BRCA1. In addition, ATR is essential for early embryonic development. The protein encoded by the human ATR gene localizes to intranuclear foci after DNA damage or inhibition of replication. ATR is phosphorylated at serine residues 428, 435 and 919, and threonine residue 1989.

## CHROMOSOMAL LOCATION

Genetic locus: ATR (human) mapping to 3q23; Atr (mouse) mapping to 9 E3.3.

## SOURCE

p-ATR (Ser 428) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 428 phosphorylated ATR of human origin.

## PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-109912 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## APPLICATIONS

p-ATR (Ser 428) is recommended for detection of Ser 428 phosphorylated ATR of human origin and correspondingly Ser 431 phosphorylated ATR of mouse origin by Western Blotting (starting dilution 1:100, dilution range 1:50-1:500), immunofluorescence (starting dilution 1:25, dilution range 1:25-1:250) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

p-ATR (Ser 428) is also recommended for detection of correspondingly phosphorylated ATR in additional species, including equine and bovine.

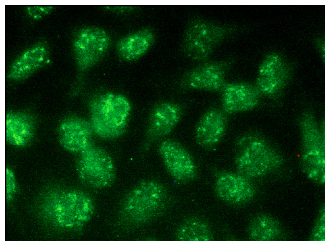
Suitable for use as control antibody for ATR siRNA (h): sc-29763, ATR siRNA (m): sc-29764, ATR shRNA Plasmid (h): sc-29763-SH, ATR shRNA Plasmid (m): sc-29764-SH, ATR shRNA (h) Lentiviral Particles: sc-29763-V and ATR shRNA (m) Lentiviral Particles: sc-29764-V.

Molecular Weight of p-ATR: 250 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



p-ATR (Ser 428): sc-109912. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

## SELECT PRODUCT CITATIONS

1. Wu, Q., et al. 2008. Human MLH1 protein participates in genomic damage checkpoint signaling in response to DNA interstrand crosslinks, while MSH2 functions in DNA repair. *PLoS Genet.* 4: e1000189.
2. Zajkowicz, A. and Rusin, M. 2011. The activation of the p53 pathway by the AMP mimetic AICAR is reduced by inhibitors of the ATM or mTOR kinases. *Mech. Ageing Dev.* 132: 543-551.
3. Mohni, K.N., et al. 2013. Efficient herpes simplex virus 1 replication requires cellular ATR pathway proteins. *J. Virol.* 87: 531-542.
4. Chiu, C.C., et al. 2013. Golden berry-derived 4β-hydroxywithanolide E for selectively killing oral cancer cells by generating ROS, DNA damage, and apoptotic pathways. *PLoS ONE* 8: e64739.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.