

ATR (H-300): sc-28901

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 (*Schizosaccharomyces 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.

REFERENCES

1. Cimprich, K., et al. 1996. cDNA cloning and gene mapping of a candidate human cell cycle checkpoint protein. Proc. Nat. Acad. Sci. USA 93: 2850-2855.
2. Keegan, K., et al. 1996. The ATR and ATM protein kinases associate with different sites along meiotically pairing chromosomes. Genes Dev. 10: 2423-2437.

CHROMOSOMAL LOCATION

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

SOURCE

ATR (H-300) is a rabbit polyclonal antibody raised against amino acids 1-300 mapping at the N-terminus of ATR of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

ATR (H-300) is recommended for detection of ATR of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000). ATR (H-300) is also recommended for detection of ATR in additional species, including canine and porcine.

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.

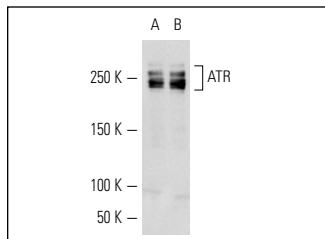
Molecular Weight of ATR: 250 kDa.

Positive Controls: HeLa nuclear extract: sc-2120 or HeLa whole cell lysate: sc-2200.

STORAGE

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

DATA



ATR (H-300): sc-28901. Western blot analysis of ATR expression in HeLa whole cell lysate (A) and HeLa nuclear extract (B).

SELECT PRODUCT CITATIONS

1. Bivol, L.M., et al. 2005. The renal vascular response to ANG II injection is reduced in the nonclipped kidney of two-kidney, one-clip hypertension. Am. J. Physiol. 298: 393-400.
2. Garate, M., et al. 2007. Phosphorylation of the tumor suppressor p33^{ING1b} at Ser 126 influences its protein stability and proliferation of melanoma cells. FASEB J. 21: 3705-3716.
3. Fan, S., et al. 2009. Low concentrations of diindolylmethane, a metabolite of indole-3-carbinol, protect against oxidative stress in a BRCA1-dependent manner. Cancer Res. 69: 6083-6091.
4. Yin, H. and Glass, J. 2011. The phenotypic radiation resistance of CD44⁺/CD24⁺ (or low) breast cancer cells is mediated through the enhanced activation of ATM signaling. PLoS ONE 6: e24080.
5. Cherubini, G., et al. 2011. The FANCD pathway is activated by adenovirus infection and promotes viral replication-dependent recombination. Nucleic Acids Res. 39: 5459-5473.
6. Kedar, P.S., et al. 2012. Increased PARP-1 association with DNA in alkylation damaged, PARP-inhibited mouse fibroblasts. Mol. Cancer Res. 10: 360-368.
7. Vogel, R., et al. 2012. Adeno-associated virus type 2 modulates the host DNA damage response induced by herpes simplex virus 1 during coinfection. J. Virol. 86: 143-155.

RESEARCH USE

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



Try **ATR (C-1): sc-515173**, our highly recommended monoclonal alternative to ATR (H-300). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **ATR (C-1): sc-515173**.