

ATR (E-14): sc-23736

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.
3. Brown, E. J. and Baltimore, D. 2000. ATR disruption leads to chromosomal fragmentation and early embryonic lethality. *Genes Dev.* 14: 397-402.
4. Bao, S., et al. 2001. ATR/ATM-mediated phosphorylation of human Rad17 is required for genotoxic stress responses. *Nature* 411: 969-974.
5. Cortez, D., et al. 2001. ATR and ATRIP: partners in checkpoint signaling. *Science* 294: 1713-1716.
6. Online Mendelian Inheritance in Man, OMIM[™]. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 601215. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

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

SOURCE

ATR (E-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-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.

Blocking peptide available for competition studies, sc-23736 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

ATR (E-14) 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), 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 (E-14) is also recommended for detection of ATR in additional species, including equine, canine, bovine 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 whole cell lysate: sc-2200, A-431 whole cell lysate: sc-2201 or K-562 whole cell lysate: sc-2203.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker[™] compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker[™] Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz[™] Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Soares, D.G., et al. 2011. Ataxia telangiectasia mutated- and Rad3-related kinase drives both the early and the late DNA-damage response to the monofunctional antitumour alkylator S23906. *Biochem. J.* 437: 63-73.

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 or our catalog for detailed protocols and support products.



Try **ATR (C-1): sc-515173**, our highly recommended monoclonal alternative to ATR (E-14). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **ATR (C-1): sc-515173**.