SANTA CRUZ BIOTECHNOLOGY, INC.

ATR (C-20): sc-21848

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.

CHROMOSOMAL LOCATION

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

SOURCE

ATR (C-20) 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-21848 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

RESEARCH USE

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

APPLICATIONS

ATR (C-20) 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).

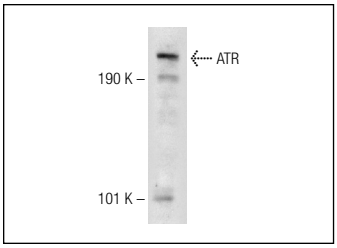
ATR (C-20) is also recommended for detection of ATR in additional species, including canine, bovine and porcine.

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.

DATA



ATR (C-20): sc-21848. Western blot analysis of ATR expression in HeLa whole cell lysate.

SELECT PRODUCT CITATIONS

1. Zhao, F., et al. 2008. Cellular DNA repair cofactors affecting hepatitis B virus infection and replication. World J. Gastroenterol. 14: 5059-5065.
2. Zhao, F., et al. 2008. Ataxia telangiectasia-mutated-Rad3-related DNA damage checkpoint signaling pathway triggered by hepatitis B virus infection. World J. Gastroenterol. 14: 6163-6170.
3. Pedram, A., et al. 2009. Estrogen inhibits ATR signaling to cell cycle checkpoints and DNA repair. Mol. Biol. Cell 20: 3374-3389.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.