SANTA CRUZ BIOTECHNOLOGY, INC.

ATR (C-1): sc-515173

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

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

SOURCE

ATR (C-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2596-2621 near the C-terminus of ATR of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ATR (C-1) is available conjugated to agarose (sc-515173 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515173 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515173 PE), fluorescein (sc-515173 FITC), Alexa Fluor® 488 (sc-515173 AF488), Alexa Fluor® 546 (sc-515173 AF546), Alexa Fluor® 594 (sc-515173 AF594) or Alexa Fluor® 647 (sc-515173 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515173 AF680) or Alexa Fluor® 790 (sc-515173 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-515173 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

ATR (C-1) is recommended for detection of ATR of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

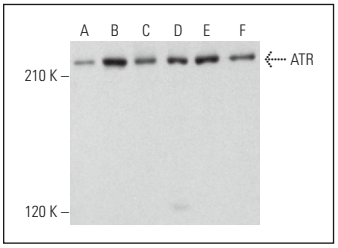
Suitable for use as control antibody for ATR siRNA (h): sc-29763, ATR siRNA (m): sc-29764, ATR shRNA Plasmid (h): sc-29763-SH, ATR shRNA Plasmid (m): sc-29764-SH, ATR shRNA (h) Lentiviral Particles: sc-29763-V and ATR shRNA (m) Lentiviral Particles: sc-29764-V.

Molecular Weight of ATR: 250 kDa.

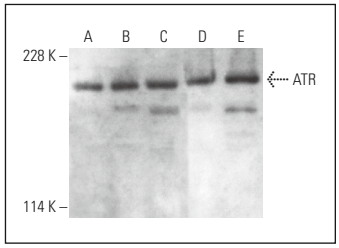
STORAGE

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

DATA



ATR (C-1): sc-515173. Western blot analysis of ATR expression in HeLa (**A**), A-431 (**B**) and K-562 (**C**) whole cell lysates and HeLa (**D**), A-431 (**E**) and K-562 (**F**) nuclear extracts.



ATR (C-1) HRP: sc-515173 HRP. Direct western blot analysis of ATR expression in HeLa (**A**), A-431 (**B**) and K-562 (**C**) whole cell lysates and A-431 (**D**) and K-562 (**E**) nuclear extracts.

SELECT PRODUCT CITATIONS

1. Zhou, Z., et al. 2018. Pold3 is required for genomic stability and telomere integrity in embryonic stem cells and meiosis. Nucleic Acids Res. 46: 3468-3486.
2. Chen, H., et al. 2019. CtIP promotes G_2/M arrest in etoposide-treated HCT116 cells in a p53-independent manner. J. Cell. Physiol. 234: 11871-11881.
3. Xie, Y., et al. 2019. Nuclear MET requires ARF and is inhibited by carbon nanodots through binding to phospho-tyrosine in prostate cancer. Oncogene 38: 2967-2983.
4. Xu, S., et al. 2019. Inhibition of protein disulfide isomerase in glioblastoma causes marked downregulation of DNA repair and DNA damage response genes. Theranostics 9: 2282-2298.
5. Matsuno, Y., et al. 2019. Replication stress triggers microsatellite destabilization and hypermutation leading to clonal expansion *in vitro*. Nat. Commun. 10: 3925.
6. Berardinelli, F., et al. 2019. G-quadruplex ligand RHPS4 radiosensitizes glioblastoma xenograft *in vivo* through a differential targeting of bulky differentiated- and stem-cancer cells. J. Exp. Clin. Cancer Res. 38: 311.
7. Hu, Q., et al. 2019. Break-induced replication plays a prominent role in long-range repeat-mediated deletion. EMBO J. 38: e101751.
8. Ma, Q., et al. 2020. Targeting Ku86 enhances X-ray-induced radiotherapy sensitivity in serous ovarian cancer cells. Int. J. Biochem. Cell Biol. 121: 105705.
9. Che, L., et al. 2020. BRUCE preserves genomic stability in the male germline of mice. Cell Death Differ. 27: 2402-2416.

RESEARCH USE

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