SANTA CRUZ BIOTECHNOLOGY, INC.

ATRIP (F-7): sc-365383

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

DNA damage or incomplete replication of DNA results in the inhibition of cell cycle progression at the G_1 to S or the G_2 to M phase transition by conserved regulatory mechanisms known as cell cycle checkpoints. Checkpoint proteins include Rad17, which is involved in regulating cell cycle progression at the G_1 checkpoint as well as Chk1, Chk2, Rad1, Rad9 and Hus1, which are involved in regulating cell cycle arrest at the G_2 checkpoint. In response to DNA damage, ATM and ATR kinases are important for cell cycle checkpoint response signalling. ATR-interacting protein (ATRIP), also designated ATM and Rad3-related-interacting protein, is required for checkpoint signaling after DNA damage. It is also important for ATR expression, which regulates DNA replication and damage checkpoint responses. ATRIP is a ubiquitously expressed protein that can form heterodimers with ATR. After dimerization they bind the RPA complex and are recruited to single stranded DNA. ATRIP is a nuclear protein that may also play a role in protein stabilization.

REFERENCES

1. Cortez, D., et al. 2001. ATR and ATRIP: partners in checkpoint signaling. Science 294: 1713-1716.
2. Zou, L. and Elledge, S.J. 2003. Sensing DNA damage through ATRIP recognition of RPA-ssDNA complexes. Science 300: 1542-1548.
3. Ball, H.L. and Cortez, D. 2005. ATRIP oligomerization is required for ATR-dependent checkpoint signaling. J. Biol. Chem. 280: 31390-31396.
4. Kim, S.M., et al. 2005. Phosphorylation of Chk1 by ATM- and Rad3-related (ATR) in *Xenopus* egg extracts requires binding of ATRIP to ATR but not the stable DNA-binding. J. Biol. Chem. 280: 38355-38364.

CHROMOSOMAL LOCATION

Genetic locus: ATRIP (human) mapping to 3p21.31; Atrip (mouse) mapping to 9 F2.

SOURCE

ATRIP (F-7) is a mouse monoclonal antibody raised against amino acids 492-791 mapping at the C-terminus of ATR-Interacting Protein of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ATRIP (F-7) is available conjugated to agarose (sc-365383 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365383 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365383 PE), fluorescein (sc-365383 FITC), Alexa Fluor® 488 (sc-365383 AF488), Alexa Fluor® 546 (sc-365383 AF546), Alexa Fluor® 594 (sc-365383 AF594) or Alexa Fluor® 647 (sc-365383 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365383 AF680) or Alexa Fluor® 790 (sc-365383 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

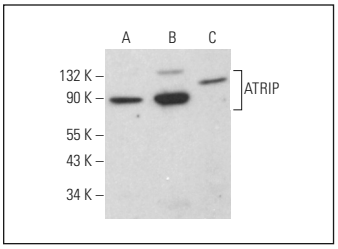
ATRIP (F-7) is recommended for detection of all ATRIP isoforms of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution 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 ATRIP siRNA (h): sc-44800, ATRIP siRNA (m): sc-44801, ATRIP shRNA Plasmid (h): sc-44800-SH, ATRIP shRNA Plasmid (m): sc-44801-SH, ATRIP shRNA (h) Lentiviral Particles: sc-44800-V and ATRIP shRNA (m) Lentiviral Particles: sc-44801-V.

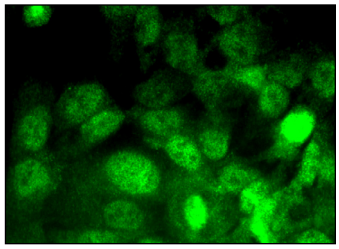
Molecular Weight of ATRIP: 86 kDa.

Positive Controls: RAW 264.7 whole cell lysate: sc-2211, WEHI-231 whole cell lysate: sc-2213 or C2C12 whole cell lysate: sc-364188.

DATA



ATRIP (F-7): sc-365383. Western blot analysis of ATRIP expression in RAW 264.7 (**A**), WEHI-231 (**B**) and C2C12 (**C**) whole cell lysates.



ATRIP (F-7): sc-365383. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Yu, Z.C., et al. 2016. Requirement for human Mps1/TTK in oxidative DNA damage repair and cell survival through MDM2 phosphorylation. Nucleic Acids Res. 44: 1133-1150.
2. Wang, F., et al. 2022. Chemical screen identifies shikonin as a broad DNA damage response inhibitor that enhances chemotherapy through inhibiting ATM and ATR. Acta Pharm. Sin. B 12: 1339-1350.
3. Guerra, B., et al. 2022. Essential role of CK2α for the interaction and stability of replication fork factors during DNA synthesis and activation of the S-phase checkpoint. Cell. Mol. Life Sci. 79: 339.
4. Li, J., et al. 2022. APE1 assembles biomolecular condensates to promote the ATR-Chk1 DNA damage response in nucleolus. Nucleic Acids Res. 50: 10503-10525.
5. Xiong, M., et al. 2022. UHRF1 is indispensable for meiotic sex chromosome inactivation and interacts with the DNA damage response pathway in mice. Biol. Reprod. 107: 168-182.

STORAGE

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