SANTA CRUZ BIOTECHNOLOGY, INC.

ADAR3 (3.591): sc-73410

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Editing of RNA alters the nucleotide sequence of a transcript to produce codon changes, which can result in alternative translation patterns from a single pre-mRNA. One type of RNA editing involves tRNA-specific adenosine deaminase, ADAT1, which is responsible for the first step in the processing of eukaryotic tRNAAla transcripts that undergo specific adenosine to inosine modifications. Additionally, members of the double-stranded RNA (dsRNA) adenosine deaminase family of enzymes, ADAR1 and ADAR2, act on double-stranded regions of RNA. dsRNA structures are formed by base pairing of an exonic sequence around the editing site with a complementary sequence in the downstream intron. ADAR family member-mediated editing occurs in the nucleus before splicing removes the respective intron. These enzymes all faciliate the deamination of adenosine to generate inosine, which is then translated as guanosine. ADAR1, ADAR2 and a related brain-specific ADAR family member, ADAR3, contain a central series of double-stranded RNA-binding motifs and a C-terminal catalytic domain. ADAR1 also contains a novel Zα-DNA binding domain at the N-terminal region, and when bound to Z-DNA-ADAR1 is substantially less susceptible to proteolytic degradation.

CHROMOSOMAL LOCATION

Genetic locus: ADARB2 (human) mapping to 10p15.3; Adarb2 (mouse) mapping to 13 A1.

SOURCE

ADAR3 (3.591) is a mouse monoclonal antibody raised against a synthetic peptide corresponding to N-terminal amino acids 2-101 of ADAR3 of human origin.

PRODUCT

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

ADAR3 (3.591) is available conjugated to agarose (sc-73410 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-73410 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-73410 PE), fluorescein (sc-73410 FITC), Alexa Fluor® 488 (sc-73410 AF488), Alexa Fluor® 546 (sc-73410 AF546), Alexa Fluor® 594 (sc-73410 AF594) or Alexa Fluor® 647 (sc-73410 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-73410 AF680) or Alexa Fluor® 790 (sc-73410 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

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 for detailed protocols and support products.

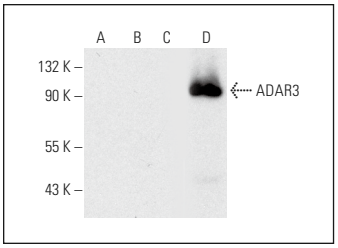
APPLICATIONS

ADAR3 (3.591) is recommended for detection of native and recombinant ADAR3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)]; non cross-reactive with other members of the ADAR family.

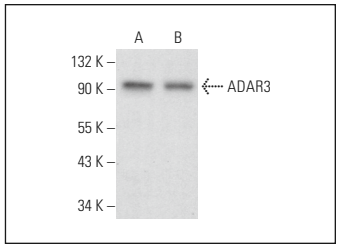
Suitable for use as control antibody for ADAR3 siRNA (h): sc-37663, ADAR3 siRNA (m): sc-37664, ADAR3 shRNA Plasmid (h): sc-37663-SH, ADAR3 shRNA Plasmid (m): sc-37664-SH, ADAR3 shRNA (h) Lentiviral Particles: sc-37663-V and ADAR3 shRNA (m) Lentiviral Particles: sc-37664-V.

Positive Controls: HeLa whole cell lysate: sc-2200, TF-1 cell lysate: sc-2412 or human ADAR3 transfected 293T whole cell lysate.

DATA



ADAR3 (3.591): sc-73410. Western blot analysis of ADAR3 expression in non-transfected 293T: sc-117752 (**A**), human ADAR1 transfected 293T: sc-172188 (**B**), human ADAR2 transfected 293T: sc-117039 (**C**) and human ADAR3 transfected 293T (**D**) whole cell lysates. Note lack of reactivity with ADAR1 and ADAR2 in lanes **B** and **C**.



ADAR3 (3.591): sc-73410. Western blot analysis of ADAR3 expression in HeLa (**A**) and TF-1 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Hood, J.L., et al. 2014. Reovirus-mediated induction of ADAR1 (p150) minimally alters RNA editing patterns in discrete brain regions. Mol. Cell. Neurosci. 61: 97-109.
2. Tran, S.S., et al. 2019. Widespread RNA editing dysregulation in brains from autistic individuals. Nat. Neurosci. 22: 25-36.
3. Silvestris, D.A., et al. 2019. Dynamic inosinome profiles reveal novel patient stratification and gender-specific differences in glioblastoma. Genome Biol. 20: 33.
4. Qu, L., et al. 2019. Programmable RNA editing by recruiting endogenous ADAR using engineered RNAs. Nat. Biotechnol. 37: 1059-1069.
5. Singh, B., et al. 2019. Evaluation of 6-mercaptopurine in a cell culture model of adaptable triple-negative breast cancer with metastatic potential. Oncotarget 10: 3681-3693.
6. Chen, J., et al. 2021. Circular RNA circRHOBTB3 represses metastasis by regulating the HuR-mediated mRNA stability of PTBP1 in colorectal cancer. Theranostics 11: 7507-7526.

RESEARCH USE

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