SANTA CRUZ BIOTECHNOLOGY, INC.

ADAR2 (1.3.1): sc-73409

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

ADAR2, also designated adenosine deaminase, RNA-specific (RED1), RNA-editing enzyme 1, DRABA2, DRADA2, ADAR2α-L1, ADAR2α-L2 and ADAR2α-L3, mediates RNA editing by destabilizing RNA through deamination of adenosine to inosine. ADAR2 is responsible for pre-mRNA editing of the glutamate receptor subunit B by site-specific deamination of adenosines. It can modify its own pre-mRNA and generate new splice sites. Translocation of endogenous ADAR2 from the nucleolus to the nucleoplasm results in increased editing of endogenous ADAR2 substrates. Alternative splicing of this gene results in several transcript variants that may influence RNA editing. RNA editing involves the deamination of adenosines at specific sites, the result of which can be a change in the amino acid sequence of the protein so that it differs from that predicted by the sequence of the DNA.

CHROMOSOMAL LOCATION

Genetic locus: ADARB1 (human) mapping to 21q22.3; Adarb1 (mouse) mapping to 10 C1.

SOURCE

ADAR2 (1.3.1) is a mouse monoclonal antibody raised against an N-terminal region corresponding to amino acids 2-179 of ADAR2 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.

ADAR2 (1.3.1) is available conjugated to agarose (sc-73409 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-73409 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-73409 PE), fluorescein (sc-73409 FITC), Alexa Fluor® 488 (sc-73409 AF488), Alexa Fluor® 546 (sc-73409 AF546), Alexa Fluor® 594 (sc-73409 AF594) or Alexa Fluor® 647 (sc-73409 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-73409 AF680) or Alexa Fluor® 790 (sc-73409 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

ADAR2 (1.3.1) is recommended for detection of native and recombinant ADAR2 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with other members of the ADAR family.

Suitable for use as control antibody for ADAR2 siRNA (h): sc-37659, ADAR2 siRNA (m): sc-37660, ADAR2 shRNA Plasmid (h): sc-37659-SH, ADAR2 shRNA Plasmid (m): sc-37660-SH, ADAR2 shRNA (h) Lentiviral Particles: sc-37659-V and ADAR2 shRNA (m) Lentiviral Particles: sc-37660-V.

Molecular Weight of ADAR2 monomer: 90 kDa.

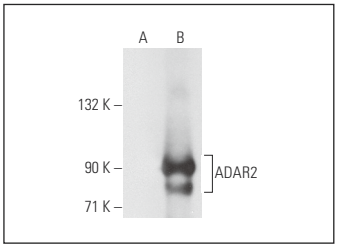
Molecular Weight of ADAR2 homodimer: 180 kDa.

Positive Controls: ADAR2 (h): 293T Lysate: sc-117039.

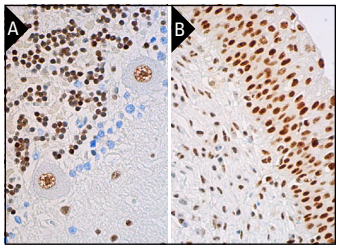
STORAGE

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

DATA



ADAR2 (1.3.1): sc-73409. Western blot analysis of ADAR2 expression in non-transfected: sc-117752 (**A**) and human ADAR2 transfected: sc-117039 (**B**) 293T whole cell lysates.



ADAR2 (1.3.1): sc-73409. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing nuclear staining of Purkinje cells, cells in granular layer and cells in molecular layer (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing nuclear staining of urothelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Watanabe, Y., et al. 2014. Enhancement of alcohol drinking in mice depends on alterations in RNA editing of serotonin 2C receptors. Int. J. Neuropsychopharmacol. 17: 739-751.
2. Nakano, M., et al. 2016. RNA editing modulates human hepatic aryl hydrocarbon receptor expression by creating microRNA recognition sequence. J. Biol. Chem. 291: 894-903.
3. Wettengel, J., et al. 2017. Harnessing human ADAR2 for RNA repair—recoding a PINK1 mutation rescues mitophagy. Nucleic Acids Res. 45: 2797-2808.
4. Chen, Y.T., et al. 2018. Tumor-associated intronic editing of HNRPLL generates a novel splicing variant linked to cell proliferation. J. Biol. Chem. 293: 10158-10171.
5. Tran, S.S., et al. 2019. Widespread RNA editing dysregulation in brains from autistic individuals. Nat. Neurosci. 22: 25-36.
6. Wang, X., et al. 2020. Role of downregulated ADARB1 in lung squamous cell carcinoma. Mol. Med. Rep. 21: 1517-1526.
7. Costa Cruz, P.H., et al. 2020. A comparative analysis of ADAR mutant mice reveals site-specific regulation of RNA editing. RNA 26: 454-469.
8. Meadows, S., et al. 2020. Altered regulation of adipomiR editing with aging. Int. J. Mol. Sci. 21: E6899.
9. Chan, T.W., et al. 2020. RNA editing in cancer impacts mRNA abundance in immune response pathways. Genome Biol. 21: 268.

RESEARCH USE

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