SANTA CRUZ BIOTECHNOLOGY, INC.

ADAR2 (F-9): sc-390995

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The Power to Question

BACKGROUND

ADAR2, also designated adenosine deaminase, RNA-specific (RED1), RNA-editing enzyme 1, DRABA2, DRADA2, ADAR2a-L1, ADAR2a-L2 and ADAR2a-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.

REFERENCES

1. Higuchi, M., et al. 2000. Point mutation in an AMPA receptor gene rescues lethality in mice deficient in the RNA-editing enzyme ADAR2. Nature 406: 78-81.
2. Wong, S.K., et al. 2001. Substrate recognition by ADAR1 and ADAR2. RNA 7: 846-858.
3. Kallman, A.M., et al. 2003. ADAR2 A→I editing: site selectivity and editing efficiency are separate events. Nucleic Acids Res. 31: 4874-4881.
4. Sansam, C.L., et al. 2003. Modulation of RNA editing by functional nucleolar sequestration of ADAR2. Proc. Natl. Acad. Sci. USA 100: 14018-14023.
5. Dawson, T.R., et al. 2004. Structure and sequence determinants required for the RNA editing of ADAR2 substrates. J. Biol. Chem. 279: 4941-4951.
6. Vitali, P., et al. 2005. ADAR2-mediated editing of RNA substrates in the nucleolus is inhibited by C/D small nucleolar RNAs. J. Cell Biol. 169: 745-753.

CHROMOSOMAL LOCATION

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

SOURCE

ADAR2 (F-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 687-708 near the C-terminus 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.

Blocking peptide available for competition studies, sc-390995 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

ADAR2 (F-9) is recommended for detection of ADAR2 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).

ADAR2 (F-9) is also recommended for detection of ADAR2 in additional species, including porcine.

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.

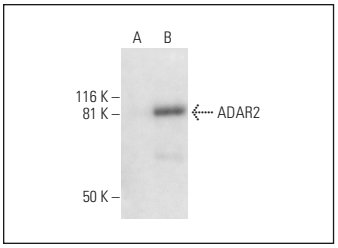
Molecular Weight of ADAR2 homodimer: 180 kDa.

Positive Controls: ADAR2 (h): 293T Lysate: sc-117039 or NIH/3T3 whole cell lysate: sc-2210.

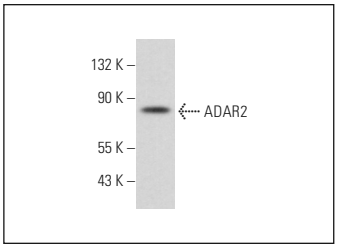
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



ADAR2 (F-9): sc-390995. Western blot analysis of ADAR2 expression in non-transfected: sc-117752 (**A**) and human ADAR2 transfected: sc-117039 (**B**) 293T whole cell lysates.



ADAR2 (F-9): sc-390995. Western blot analysis of ADAR2 expression in NIH/3T3 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Qu, L., et al. 2019. Programmable RNA editing by recruiting endogenous ADAR using engineered RNAs. Nat. Biotechnol. 37: 1059-1069.

RESEARCH USE

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