

# ADAR1 (h3): 293T Lysate: sc-172188

## BACKGROUND

RNA-specific adenosine deaminase (ADAR1, DSH, IFI4, p136, DRADA, DSRAD, K88dsRBP) mediates RNA editing by destabilizing double stranded RNA through deamination of adenosine to inosine in structured or double-stranded RNAs. ADAR1 is expressed from an interferon-response promoter and has a Z-DNA/Z-RNA binding domain at its N-terminus. ADAR1 co-localizes with SUMO-1 in a subnucleolar region that is distinct from the fibrillar center, the dense fibrillar component and the granular component. Localization of nuclear ADAR1 is under the influence of a nucleolar localization signal (NoLS) in the middle of ADAR1 and the exporting activity of the nuclear exporter signal (NES) near the N terminus. ADAR1 upregulates nuclear factor 90 (NF90)-mediated gene expression by interacting with NF110, NF90 and NF45. ADAR1 binds short interfering RNA (siRNA), and gene silencing by siRNA is significantly more effective in mouse fibroblasts homozygous for an ADAR1 null mutation than in wild-type cells. ADAR1 may limit the efficacy of siRNA in mammalian cells.

## REFERENCES

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2. Herbert, A., et al. 2002. Induction of protein translation by ADAR1 within living cell nuclei is not dependent on RNA editing. *Mol. Cell* 10: 1235-1246.
3. Nie, Y., et al. 2004. Subcellular distribution of ADAR1 isoforms is synergistically determined by three nuclear discrimination signals and a regulatory motif. *J. Biol. Chem.* 279: 13249-13255.
4. Yang, W., et al. 2005. ADAR1 RNA deaminase limits short interfering RNA efficacy in mammalian cells. *J. Biol. Chem.* 280: 3946-3953.
5. George, C.X., et al. 2005. Expression of interferon-inducible RNA adenosine deaminase ADAR1 during pathogen infection and mouse embryo development involves tissue-selective promoter utilization and alternative splicing. *J. Biol. Chem.* 280: 15020-15028.
6. Sallacz, N.B., et al. 2005. Chromosomal storage of the RNA-editing enzyme ADAR1 in *Xenopus* oocytes. *Mol. Biol. Cell* 16: 3377-3386.
7. Desterro, J.M., et al. 2005. SUMO-1 modification alters ADAR1 editing activity. *Mol. Biol. Cell* 16: 5115-5126.
8. Nie, Y., et al. 2005. ADAR1 interacts with NF90 through double-stranded RNA and regulates NF90-mediated gene expression independently of RNA editing. *Mol. Cell. Biol.* 25: 6956-6963.
9. Athanasiadis, A., et al. 2005. The crystal structure of the Z $\beta$  domain of the RNA-editing enzyme ADAR1 reveals distinct conserved surfaces among Z-domains. *J. Mol. Biol.* 351: 496-507.

## STORAGE

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

## CHROMOSOMAL LOCATION

Genetic locus: ADAR (human) mapping to 1q21.3.

## PRODUCT

ADAR1 (h3): 293T Lysate represents a lysate of human ADAR1 transfected 293T cells and is provided as 100  $\mu$ g protein in 200  $\mu$ l SDS-PAGE buffer.

## APPLICATIONS

ADAR1 (h3): 293T Lysate is suitable as a Western Blotting positive control for human reactive ADAR1 antibodies. Recommended use: 10-20  $\mu$ l per lane.

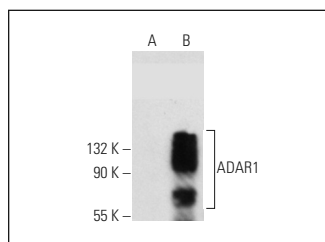
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

ADAR1 (D-8): sc-271854 is recommended as a positive control antibody for Western Blot analysis of enhanced human ADAR1 expression in ADAR1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:  
 1) Western Blotting: use m-IgG $\lambda$  BP-HRP: sc-516132 or m-IgG $\lambda$  BP-HRP (Cruz Marker): sc-516132-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.

## DATA



ADAR1 (D-8): sc-271854. Western blot analysis of ADAR1 expression in non-transfected: sc-117752 (A) and human ADAR1 transfected: sc-172188 (B) 293T whole cell lysates.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.