SYSY Antibodies

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ADAR1 p150

Cat.No. 293 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were added for stabilization. For **reconstitution** add 50 µl H_2O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°C until use. Antibodies should be stored at +4°C when still lyophilized. Do not freeze! For detailed information, see back of the data sheet.
Applications	**WB**: 1 : 1000 (AP staining) **IP**: not tested yet **ICC**: not tested yet **IHC**: not recommended **IHC-P (FFPE)**: not tested yet
Immunogen	Recombinant protein corresponding to AA 1 to 248 from mouse ADAR1p150 (UniProt Id: Q99MU3)
Reactivity	Reacts with: rat (P55266), mouse (Q99MU3). Other species not tested yet.
Specificity	Specific for ADAR1 p150. K.O. validated PubMed: 31956894

TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Background

ADARs bind to double stranded RNA regions and deaminate adenosine residues to inosine. An inosine is interpreted as a guanosine by the translation machinery leading to alterations of codons.
In addition microRNAs involved in posttranscriptional regulation are modulated through ADAR mediated RNA editing.
Three members of the ADAR gene family (ADAR 1-3) have been identified in vertebrates. In addition, two isoforms of **ADAR1** are synthesized by translation initiation at alternative start codons, an interferon-inducible, cytoplasmic 150-kDa protein (**p150**) and a constitutive, nuclear 110-kDa protein (p110).

Selected References for 293 003

Regulation of the double-stranded RNA response through ADAR1 licenses metaplastic reprogramming in gastric epithelium.
Sáenz JB, Vargas N, Cho CJ, Mills JC
JCI insight (2022) 73: . . **WB, IHC, IHC-P; tested species: mouse**

ADAR1 prevents autoinflammation by suppressing spontaneous ZBP1 activation.
de Reuver R, Verdonck S, Dierick E, Nemegeer J, Hessmann E, Ahmad S, Jans M, Blancke G, Van Nieuwerburgh F, Botzki A, Vereecke L, et al.
Nature (2022) 6077920: 784-789. . **WB; KO,KD verified; tested species: mouse**

ADAR1 interaction with Z-RNA promotes editing of endogenous double-stranded RNA and prevents MDA5-dependent immune activation.
de Reuver R, Dierick E, Wiernicki B, Staes K, Seys L, De Meester E, Muyldermans T, Botzki A, Lambrecht BN, Van Nieuwerburgh F, Vandenabeele P, et al.
Cell reports (2021) 366: 109500. . **WB; tested species: mouse**

An internal deletion of ADAR rescued by MAVS deficiency leads to a minute phenotype.
Bajad P, Ebner F, Amman F, Szabó B, Kapoor U, Manjali G, Hildebrandt A, Janisiw MP, Jantsch MF
Nucleic acids research (2020) : . . **WB; KO verified; tested species: mouse**

Selected General References

Functions and regulation of RNA editing by ADAR deaminases.
Nishikura K et al. Annu. Rev. Biochem. (2010) PubMed:20192758

A-to-I RNA editing: a contribution to diversity of the transcriptome and an organism's development.
Zamyatnin AA et al. Biochemistry Mosc. (2010) PubMed:21314598

Modulation of microRNA processing and expression through RNA editing by ADAR deaminases.
Yang W et al. Nat. Struct. Mol. Biol. (2006) PubMed:16369484

RNA hairpins in noncoding regions of human brain and Caenorhabditis elegans mRNA are edited by adenosine deaminases that act on RNA.
Morse DP et al. Proc. Natl. Acad. Sci. U.S.A. (2002) PubMed:12048240

Editing of glutamate receptor subunit B pre-mRNA by splice-site variants of interferon-inducible double-stranded RNA-specific adenosine deaminase ADAR1.
Liu Y et al. J. Biol. Chem. (1999) PubMed:9988754

Access the online factsheet including applicable protocols at https://sysy.com/product/293003 or scan the QR-code.

FAQ - How should I store my antibody?

Shipping Conditions

- All SYSY antibodies and control proteins/peptides are shipped lyophilized (vacuum freeze-dried). In this form, they remain stable without loss of quality at ambient temperatures for several weeks.

Storage of Sealed Vials after Delivery

- **Unlabeled** and **biotin-labeled antibodies** and **control proteins** should be stored at **4°C** before reconstitution. **Do not freeze lyophilized antibodies**. Temperatures below 0°C may impair performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long-term storage of lyophilized fluorophore-conjugates may cause aggregation.
- **Control peptides** should be stored at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- **Do not use frost-free ("no-frost") freezers.** These units periodically warm to remove ice buildup, causing freeze–thaw cycles that can damage antibodies.
- Store vials in areas with minimal temperature fluctuation - preferably toward the back of the freezer, not on the door.
- Aliquot reconstituted antibodies and store at –20°C to –80°C.
- Avoid very small aliquots (<20 µL), as evaporation and adsorption to tube surfaces can reduce antibody concentration and activity.
- Use the smallest practical storage vial to minimize surface area.
- Adding glycerol to a final concentration of 50% prevents freezing at -20°C, allowing storage in liquid form and effectively avoiding freeze–thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C

Monoclonal Antibodies

- **Ascites and hybridoma supernatant:** Store at -20°C to -80°C
  Prolonged storage at 4°C is not recommended, as proteases present in ascites may degrade antibodies.
- **Purified IgG:** Store at -20°C to -80°C
  Adding a carrier protein (e.g., BSA) enhances long-term stability.
  Many SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Polyclonal Antibodies

- **Crude antisera:** Can be stored at 4°C with antimicrobials added, but -20°C to -80°C is preferred
- **Affinity-purified antibodies:** Less stable than antisera; store at -20°C to -80°C
  Adding a carrier protein such as BSA improves long-term stability.
  Most SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Fluorescence-labeled Antibodies

- Store as a liquid with 1:1 (v/v) glycerol at -20°C, and protect from light exposure

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All purified SYSY antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the volume of deionized water specified in the corresponding datasheet. If a larger final volume is desired, first add the recommended amount of water, then adjust with PBS and, if needed, add a stabilizing carrier protein (e.g., BSA) to a final concentration of 2%. Some SYSY antibodies already contain albumin; please take this into account before adding additional carrier protein.

For complete reconstitution, carefully remove the vial cap. After adding water, briefly vortex the solution. To collect the liquid at the bottom of the vial, place the vial inside a 50 ml centrifuge tube padded with paper and centrifuge briefly.

- If desired, small amounts of azide or thimerosal may be added to prevent microbial growth. This is particularly recommended when storing an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add glycerol 1:1 (v/v) to achieve a final concentration of 50%. This prevents freezing at –20°C and keeps the antibody in liquid form, effectively avoiding freeze–thaw cycles.
- Glycerol may also be added to unlabeled primary antibodies as a general measure to prevent freeze–thaw damage.
- For further guidance, please refer to our **storage tips** and recommendations for reconstituted antibodies, control peptides, and control proteins.