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**: 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 ADAR 1 p150. K.O. 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 **ADAR 1** 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
Annual review of biochemistry (2010) 79: 321-49. .

A-to-I RNA editing: a contribution to diversity of the transcriptome and an organism's development.
Zamyatnin AA, Lyamzaev KG, Zinovkin RA
Biochemistry. Biokhimiia (2010) 7511: 1316-23. .

Modulation of microRNA processing and expression through RNA editing by ADAR deaminases.
Yang W, Chendrimada TP, Wang Q, Higuchi M, Seeburg PH, Shiekhattar R, Nishikura K
Nature structural & molecular biology (2006) 131: 13-21. .

RNA hairpins in noncoding regions of human brain and Caenorhabditis elegans mRNA are edited by adenosine deaminases that act on RNA.
Morse DP, Aruscavage PJ, Bass BL
Proceedings of the National Academy of Sciences of the United States of America (2002) 9912: 7906-11. .

Editing of glutamate receptor subunit B pre-mRNA by splice-site variants of interferon-inducible double-stranded RNA-specific adenosine deaminase ADAR1.
Liu Y, Samuel CE
The Journal of biological chemistry (1999) 2748: 5070-7. .

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 our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form 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. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C.

Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Polyclonal Antibodies

- **Crude antisera**: With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies**: Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein.
  For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.