SYSY | HistoSure

Rudolf-Wissell-Str. 28a
37079 Göttingen, Germany
Phone: +49 551-50556-0
Fax: +49 551-50556-384
E-mail: sales@sysy.com
Web: sysy-histosure.com

CD39 (ENTPD1) mouse specific

Cat.No. HS-493 017; Monoclonal rat antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. Albumin and azide were added for stabilization. For **reconstitution** add 100 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**: 1 : 500 **IHC-P**: 1 : 100
Clone	SY-6C5D3
Subtype	IgG2a (λ light chain)
Immunogen	Synthetic peptide corresponding to residues surrounding AA 305 of mouse CD39 (UniProt Id: P55772)
Reactivity	Reacts with: mouse (P55772). No signal: human (P49961). Other species not tested yet.
Remarks	**IHC**: Antigen retrieval with citrate buffer pH 6 is required.

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

Background

CD39, also known as ENTPD1 (ecto-nucleoside triphosphate diphosphohydrolase), is a cell surface ectoenzyme that catalyzes ATP and ADP into AMP, which is subsequently converted into adenosine by CD73 (NT5E, ecto-5□-nucleotidase). The balance between extracellular ATP and adenosine is crucial for immune homeostasis and is tightly controlled by enzymatic activity, with CD39 serving as the rate-limiting enzyme (1). CD39 is highly expressed on vascular and immune cell populations such as B cells, NK cells, dendritic cells, Langerhans cells, monocytes, macrophages, mesangial cells, neutrophils and regulatory T cells (2). High CD39 expression has been found in numerous cancers, either on the tumor surface or in infiltrating immune cells. Targeting the CD39/CD73 pathway is currently explored as a therapeutic strategy for cancer treatment (3). In the brain, CD39 is constitutively expressed by microglia, endothelial and smooth muscle cells of the vasculature and involved in microglial processes ramification (4) and blood-brain barrier function. Significant induction of CD39 protein in microglia has been demonstrated in several neuroinflammation models. CD39 up-regulation by reactive microglia is suggested to be associated with an anti-inflammatory phenotype (5).

Selected General References

What Else Can CD39 Tell Us?
Zhao H et al. Front Immunol (2017) PubMed:28690614

CD39/CD73/A2AR pathway and cancer immunotherapy.
Xia C et al. Mol Cancer (2023) PubMed:36859386

Induction of NTPDase1/CD39 by Reactive Microglia and Macrophages Is Associated With the Functional State During EAE.
Jakovljevic M et al. Front Neurosci (2019) PubMed:31105520

The adenosine generating enzymes CD39/CD73 control microglial processes ramification in the mouse brain.
Matyash M et al. PLoS One (2017) PubMed:28376099

CD39 and CD73 in immunity and inflammation.
Antonioli L et al. Trends Mol Med (2013) PubMed:23601906

Access the online factsheet including applicable protocols at https://sysy-histosure.com/product/HS-493017 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.