SYSY | HistoSure

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CD38

Cat.No. HS-537 003; 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) **ICC**: not tested yet **IHC**: 1 : 500 (see remarks) **IHC-P**: 1 : 200 up to 1 : 500 **ELISA**: not tested yet
Immunogen	Synthetic peptide corresponding to residues near the amino terminus of mouse CD38 (UniProt Id: P56528)
Reactivity	Reacts with: mouse (P56528). No signal: rat (Q64244), human (P28907). Other species not tested yet.
Remarks	**IHC**: One of the following antigen retrievals is required: Tris-EDTA buffer pH 9, citrate buffer pH 6.

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

Background

CD38 is a 45-kD transmembrane glycoprotein that functions as both an ectoenzyme and a receptor. Its catalytic domain cleaves NAD and NADP to produce cyclic ADP-ribose (cADPR), ADP-ribose (ADPR), and NAADP. These reaction products mobilize intracellular Ca^{2} stores and influence Ca^{2} signaling (1). As a receptor, CD38 binds to CD31, mediating immune cell adhesion and transmigration across endothelial barriers (2). CD38 also associates with various membrane proteins or complexes, such as CD16, T cell receptors, and B cell receptors (3). CD38 is expressed almost universally among multiple immune cell populations, including T cells, B cells, NK cells, plasma cells, and macrophages, and its expression is induced by pro-inflammatory cytokines, such as tumor necrosis factor alpha (TNFα), interferon gamma (IFNγ), and the bacterial component lipopolysaccharide (LPS) (3). Non-hematopoietic tissue expression includes prostatic epithelial cells, pancreatic islets, airway and vascular smooth muscle cells, the kidney, the intestinal epithelium, and the brain (4). Elevated CD38 activity has been linked to several diseases, including allergic inflammation and asthma, chronic lymphocytic leukemia (CLL), multiple myeloma (5), autoimmune diseases (4), heart disease and neurological disorders (6). CD38 levels also increase with aging and play a role in age-related diseases (7).

Selected General References

Evolution and function of the ADP ribosyl cyclase/CD38 gene family in physiology and pathology.
Malavasi F et al. Physiol Rev (2008) PubMed:18626062

CD38 connects the heart and brain.
Tao Y et al. Transl Psychiatry (2025) PubMed:40935818

Unveiling the role of NAD glycohydrolase CD38 in aging and age-related diseases: insights from bibliometric analysis and comprehensive review.
Zhao X et al. Front Immunol (2025) PubMed:40529366

Roles of CD38 in the Immune Response to Infection.
Glaría E et al. Cells (2020) PubMed:31963337

CD38: An Immunomodulatory Molecule in Inflammation and Autoimmunity.
Piedra-Quintero ZL et al. Front Immunol (2020) PubMed:33329591

CD38, a Receptor with Multifunctional Activities: From Modulatory Functions on Regulatory Cell Subsets and Extracellular Vesicles, to a Target for Therapeutic Strategies.
Morandi F et al. Cells (2019) PubMed:31783629

The Good, the Bad and the Unknown of CD38 in the Metabolic Microenvironment and Immune Cell Functionality of Solid Tumors.
Konen JM et al. Cells (2019) PubMed:31878283

Access the online factsheet including applicable protocols at https://sysy-histosure.com/product/HS-537003 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.