SYSY Antibodies

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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 (FFPE)**: 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.com/product/HS-537003 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.