

ICAM1 (CD54)

Cat.No. HS-532 003; 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 ₂ O 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 : 400 up to 1 : 1000
Immunogen	Synthetic peptide corresponding to residues near the carboxy terminus of mouse ICAM1 (UniProt Id: P13597)
Reactivity	Reacts with: mouse (P13597). Weaker signal: rat (Q00238). No signal: human (P05362). 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

Intercellular Adhesion Molecule 1 (**ICAM1**), also known as CD54 and referred to as MALA-2 in mice (1), is a transmembrane glycoprotein belonging to the immunoglobulin superfamily. It is expressed at low levels under physiological conditions on endothelial, epithelial, and immune cells. However, its expression is markedly upregulated in response to pro-inflammatory cytokines such as TNFα, IL-1β, and IFNγ (2). ICAM1 is best known for its critical role in leukocyte transmigration across the vascular endothelium into sites of inflammation. This process primarily depends on its interaction with leukocyte counterreceptors, namely lymphocyte function-associated antigen-1 (LFA-1) and macrophage antigen-1 (Mac-1) (3).

Beyond facilitating leukocyte trafficking, ICAM1 also serves as an efferocytosis receptor in inflammatory macrophages (4) and contributes to the formation of immune synapses (5). Upon endothelial activation, ICAM1 expression is strongly induced, and a soluble form (sICAM1) is released because of proteolytic cleavage (6). Elevated levels of sICAM1 have been detected in the sera of patients with various types of cancer and are associated with poor prognostic outcomes (7).

Selected General References

- MALA-2, mouse homologue of human adhesion molecule ICAM-1 (CD54).
Prieto J et al. Eur J Immunol (1989) PubMed:2571505
- Dendritic cell ICAM-1 strengthens synapses with CD8 T cells but is not required for their early differentiation.
Sapozhnikov A et al. Cell Rep (2023) PubMed:37494182
- ICAM-1: A master regulator of cellular responses in inflammation, injury resolution, and tumorigenesis.
Bui TM et al. J Leukoc Biol (2020) PubMed:32182390
- Intercellular Adhesion Molecule 1 Functions as an Efferocytosis Receptor in Inflammatory Macrophages.
Wiesolek HL et al. Am J Pathol (2020) PubMed:32035057
- Soluble intercellular adhesion molecule-1 is a prognostic marker in colorectal carcinoma.
Schellerer VS et al. Int J Colorectal Dis (2019) PubMed:30470940
- Soluble ICAM-1 and VCAM-1 as markers of endothelial activation.
Videm V et al. Scand J Immunol (2008) PubMed:18363595
- Relative contribution of LFA-1 and Mac-1 to neutrophil adhesion and migration.
Ding ZM et al. J Immunol (1999) PubMed:10528208

Access the online factsheet including applicable protocols at <https://sysy-histosure.com/product/HS-532003> 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 at 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.