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

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_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 (see remarks) **IHC-P (FFPE)**: 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

Inter**c**ellular **A**dhesion **M**olecule **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.
Sapoznikov 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 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.