

CX3CR1

Cat.No. HS-516 017; 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 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: not recommended IP: not tested yet ICC: not tested yet IHC: 1 : 500 (see remarks) IHC-P: 1 : 100 up to 1 : 1000 (see remarks)
Clone	SY-57E5E7
Subtype	IgG2b (κ light chain)
Immunogen	Synthetic peptide corresponding to residues near the carboxy terminus of mouse CX3CR1 (UniProt Id: Q9Z0D9)
Reactivity	Reacts with: mouse (Q9Z0D9), rat (P49238). Other species not tested yet.
Remarks	IHC: Antigen retrieval with citrate buffer pH 6 is tolerated. IHC-P: Antigen retrieval with Tris-EDTA buffer pH 9 is recommended for chromogenic detection.

Background

CX3CR1 is a member of the seven-transmembrane G-protein coupled receptor (GPCR) family. Its ligand CX3CL1, also known as fractalkine or neurotactin, is expressed by neurons, dendritic cells and inflamed endothelial cells, among others.

CX3CR1 is expressed by several cell types, including monocytes, macrophages and microglia in the brain, dendritic cells, natural killer (NK) cells and some T lymphocytes. This receptor is crucial for regulating cell adhesion and migration, and plays an important role in immune response and inflammation. Recent literature highlights the importance of the receptor in several diseases, including cardiovascular disorders (1), neurodegenerative diseases e.g. influencing the progression of Alzheimer's disease (2), liver fibrosis (3) and cancer (4). It is a promising therapeutic target not only in cancer but also in chronic kidney disease (5).

Selected General References

CX3CR1 is required for monocyte homeostasis and atherogenesis by promoting cell survival.
Landsman L et al. Blood (2009) PubMed:18971423

Regulation and biological functions of the CX3CL1-CX3CR1 axis and its relevance in solid cancer: A mini-review.
Rivas-Fuentes S et al. J Cancer (2021) PubMed:33391453

Fractalkine (CX3CL1) and Its Receptor CX3CR1: A Promising Therapeutic Target in Chronic Kidney Disease?
Cormican S et al. Front Immunol (2021) PubMed:34163473

The Impact of the CX3CL1/CX3CR1 Axis in Neurological Disorders.
Pawelec P et al. Cells (2020) PubMed:33065974

The fractalkine receptor CX₃CR1 protects against liver fibrosis by controlling differentiation and survival of infiltrating hepatic monocytes.
Karlmark KR et al. Hepatology (2010) PubMed:21038415

Access the online factsheet including applicable protocols at <https://sysy-histosure.com/product/HS-516017> or scan the QR-code.



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

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.