SYSY Antibodies

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Ly6C

Cat.No. 538 017; 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_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**: 1 : 500 (see remarks) **IHC**: not tested yet **IHC-P (FFPE)**: 1 : 100 up to 1 : 250
Clone	SY-244C1
Subtype	IgG2b (κ light chain)
Immunogen	Full-length recombinant mouse Lymphocyte antigen 6C1 protein (UniProt Id: P0CW02)
Specificity	Specific for mouse Ly6C; no cross-reactivity with mouse Ly6G
Remarks	**ICC**: 4% formaldehyde/PFA fixation is recommended.

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

Background

Ly6C1 and Ly6C2 (Lymphocyte antigen 6 complex, locus C 1 and 2) are two highly homologous proteins, that are collectively known as Ly6C. Ly6C is a 14-kD glycosylphosphatidylinositol (GPI)-anchored protein that plays a crucial role in immune regulation and cell adhesion. It contains a single Cys-rich motif that generates the LU domain structure characteristic of the Ly6 family (1). Ly6C is commonly used as a monocyte/macrophage cell differentiation antigen. Ly6C high pro-inflammatory macrophages develop from recruited classical Ly6C high monocytes during inflammation and are then converted into Ly6C low macrophages, that are more involved in tissue repair and resolution of inflammation (2).
In the steady state, tissue-resident macrophages, such as microglia, Langerhans cells, and Kupffer cells, exhibit a F4/80highLy6Clow phenotype (2). Ly6C is primarily observed on monocytes, dendritic cells, and a subset of T cells (3,4). Ly6C is also expressed on brain vessel endothelial cells (5) and in the retinal vascular plexuses (6).
In disease contexts, particularly in chronic inflammatory conditions, cancer, and autoimmune disorders, increased levels of Ly6C high monocytes have been linked to exacerbated inflammation and tissue damage (7).

Selected General References

Ly6 family proteins in neutrophil biology.
Lee PY et al. J Leukoc Biol (2013) PubMed:23543767

Dendritic cell type 3 arises from Ly6C+ monocyte-dendritic cell progenitors.
Liu Z et al. Immunity (2023) PubMed:37506694

F4/80+Ly6Chigh Macrophages Lead to Cell Plasticity and Cancer Initiation in Colitis.
Shin AE et al. Gastroenterology (2023) PubMed:36634827

Occurrences and Functions of Ly6Chi and Ly6Clo Macrophages in Health and Disease.
Li YH et al. Front Immunol (2022) PubMed:35707538

Ly6c as a New Marker of Mouse Blood Vessels: Qualitative and Quantitative Analyses on Intact and Ischemic Retinas.
Martínez-Carmona M et al. Int J Mol Sci (2021) PubMed:35008441

Cytokine- and TCR-Mediated Regulation of T Cell Expression of Ly6C and Sca-1.
DeLong JH et al. J Immunol (2018) PubMed:29358280

Ly-6C is expressed in brain vessels endothelial cells but not in microglia of the mouse.
Alliot F et al. Neurosci Lett (1998) PubMed:9714459

Access the online factsheet including applicable protocols at https://sysy.com/product/538017 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.