SYSY | HistoSure

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Chil3 (YM1) mouse specific

Cat.No. HS-442 017; 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 : 100 up to 1 : 250 (AP staining) **IP**: not tested yet **ICC**: 1 : 500 **IHC**: 1 : 500 (see remarks) **IHC-P (FFPE)**: 1 : 1000
Clone	189C10E2
Subtype	IgG2b (λ light chain)
Immunogen	Synthetic peptide corresponding to residues surrounding AA 280 of mouse Chil3 (UniProt Id: O35744)
Reactivity	Reacts with: mouse (O35744). No signal: human, rat. Other species not tested yet.
Specificity	Specific for mouse Chil3/YM1; no cross-reactivity with Chil4/YM2
Remarks	**IHC**: Antigen retrieval with citrate buffer pH 6 can be applied to improve the signal-to-noise ratio.

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

Background

Chitinase-like protein 3 (Chil3), commonly referred to as **YM1**, is a rodent-specific secreted glycoprotein that belongs to the chitinase-like protein (CLP) family, sharing structural similarity with true chitinases but lacking enzymatic activity. It is predominantly expressed by alternatively activated (M2) macrophages, eosinophils, and neutrophils in mice, particularly under type 2 immune conditions such as allergic inflammation, parasitic infection, and tissue repair (1). Chil3 / YM1 expression is strongly induced by IL-4 and IL-13, hallmark cytokines of Th2-driven responses. Alongside Arginase-1 (Arg1) and Fizz1 (Retnla), Chil3 / YM1 is commonly used as a biomarker of M2 macrophage polarization in murine models (2). In healthy adult mice, Chil3 / YM1 is constitutively expressed in alveolar macrophages and neutrophils in the lung and in immature neutrophils in the spleen and bone marrow (1). Its isotype Chil4 / YM2 shows a different expression pattern and is mainly expressed in the stomach (3). In the central nervous system microglia can also induce Chil3 / YM1 expression under specific inflammatory conditions, e.g. after stroke (4).

Selected General References

An update on Ym1 and its immunoregulatory role in diseases.
Kang Q et al. Front Immunol (2022) PubMed:35967383

Individual in vivo Profiles of Microglia Polarization After Stroke, Represented by the Genes iNOS and Ym1.
Collmann FM et al. Front Immunol (2019) PubMed:31214190

Alternative activation of macrophages: mechanism and functions.
Gordon S et al. Immunity (2010) PubMed:20510870

Cellular expression of murine Ym1 and Ym2, chitinase family proteins, as revealed by in situ hybridization and immunohistochemistry.
Nio J et al. Histochem. Cell Biol. (2004) PubMed:15148607

Access the online factsheet including applicable protocols at https://sysy-histosure.com/product/HS-442017 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.