

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 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 : 100 up to 1 : 250 (AP staining) IP: not tested yet ICC: 1 : 500 IHC: 1 : 500 IHC-P: 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 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.