

FcRn

Cat.No. 552 003; 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 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 tested yet IP: not tested yet ICC: not tested yet IHC: 1 : 500 (see remarks) IHC-P (FFPE): 1 : 500 up to 1 : 1000 (see remarks)
Immunogen	Recombinant protein corresponding to the extracellular domain of mouse FcRn (UniProt Id: Q61559)
Reactivity	Reacts with: mouse (Q61559), rat (P13599), human (P55899). Other species not tested yet.
Specificity	K.O. validated
Remarks	IHC: Antigen retrieval with citrate buffer pH 6 is required. IHC-P (FFPE): For chromogenic detection, an optimized AGR time of 30 minutes is recommended for best results.

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

Background

The neonatal Fc receptor (FcRn) is an MHC class I-related receptor that plays a central role in the regulation of immunoglobulin G (IgG) and albumin homeostasis. Initially identified for its function in mediating the transfer of maternal IgG to the fetus and newborn, FcRn is now recognized as being broadly expressed in vascular endothelial cells and in most epithelial cell types. In addition, FcRn is widely present in hematopoietic cells, including monocytes, macrophages, dendritic cells (DCs), neutrophils, and B cells (1). Notably, however, the expression pattern of FcRn differs between mice and humans (2,3).

FcRn binds IgG and albumin within acidic endosomal compartments, thereby protecting both molecules from lysosomal degradation and recycling them back to the circulation (4). As a result, the serum half-life of antibodies is directly dependent on FcRn function (5). Beyond its role in maintaining antibody levels, FcRn also contributes to immune surveillance, antigen presentation, and mucosal immunity (1).

Because of its pivotal role in IgG recycling, FcRn has emerged as an important therapeutic target in autoimmune diseases, where FcRn inhibitors are used to lower pathogenic IgG antibody levels (6). Conversely, FcRn-mediated recycling is also harnessed to prolong the serum half-life of therapeutic antibodies and Fc-fusion proteins (7).

Selected General References

FcRn: The Architect Behind the Immune and Nonimmune Functions of IgG and Albumin.
Pyzik M et al. J Immunol (2015) PubMed:25934922

The therapeutic age of the neonatal Fc receptor.
Pyzik M et al. Nat Rev Immunol (2023) PubMed:36726033

The Contribution of Liver Sinusoidal Endothelial Cells to Clearance of Therapeutic Antibody.
James BH et al. Front Physiol (2021) PubMed:35095549

The neonatal Fc receptor: Key to homeostatic control of IgG and IgG-related biopharmaceuticals.
Baldwin WM et al. Am J Transplant (2019) PubMed:30903736

FcRn Expression in Wildtype Mice, Transgenic Mice, and in Human Tissues.
Li T et al. Biomolecules (2018) PubMed:30326650

Distribution of FcRn Across Species and Tissues.
Latvala S et al. J Histochem Cytochem (2017) PubMed:28402755

Fc-fusion proteins and FcRn: structural insights for longer-lasting and more effective therapeutics.
Rath T et al. Crit Rev Biotechnol (2015) PubMed:24156398

Access the online factsheet including applicable protocols
at <https://sysy.com/product/552003> 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.