SYSY Antibodies

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FoxP3

Cat.No. HS-491 017; 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**: not tested yet **IP**: not tested yet **ICC**: not tested yet **IHC**: 1 : 500 (see remarks) **IHC-P (FFPE)**: 1 : 200 up to 1 : 1000 **IHC-Fr**: 1 : 500 (see remarks)
Clone	SY-60F6
Subtype	IgG2a (κ light chain)
Immunogen	Recombinant protein corresponding to residues near the central region of mouse FoxP3 (UniProt Id: Q99JB6)
Reactivity	Reacts with: mouse (Q99JB6). Weaker signal: rat. No signal: human (Q9BZS1). Other species not tested yet.
Remarks	**IHC**: Antigen retrieval with citrate buffer pH 6 is required. **IHC-Fr**: The following fixatives are possible: methanol, 4% formaldehyde/PFA.

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

Background

The transcription factor FoxP3 belongs to the family of forkhead transcription factors and controls the differentiation and function of regulatory T-cells (Tregs) (1). Tregs develop either in the thymus (tTreg), where they represent only ~2-3% of developing CD4+ thymocytes, or in the periphery by conversion of conventional CD4+ T cells into peripherally induced Treg (pTreg) cells (2). Expression of FoxP3 is induced by strong and persistent T cell receptor (TCR) signaling. FoxP3 binds DNA as homodimer or heterodimer with Foxp1 and interacts with other downstream transcription factors of TCR signaling, e.g., AP-1 transcription factors, NF-κB or Runx1 (1). Increasing evidence suggests that FoxP3 is expressed not only in Tregs, but also in a variety of tumor cells. However, tumor-FoxP3 has an inconsistent functional role and acts either as a tumor-suppressor or as a tumor-promoting factor (3). Mutations in FoxP3 lead to the severe autoimmune phenomena observed in patients with immune dysregulation, polyendocrinopathy, enteropathy, X-linked syndrome (IPEX) and in scurfy mice (4).

Selected General References

Control of regulatory T-cell differentiation and function by T-cell receptor signalling and Foxp3 transcription factor complexes.
Ono M et al. Immunology (2020) PubMed:32022254

Human FOXP3 and tumour microenvironment.
Wang J et al. Immunology (2023) PubMed:35689826

Regulatory T Cell Heterogeneity in the Thymus: Impact on Their Functional Activities.
Santamaria JC et al. Front Immunol (2021) PubMed:33643324

IPEX as a result of mutations in FOXP3.
van der Vliet HJ et al. Clin Dev Immunol (2007) PubMed:18317533

Access the online factsheet including applicable protocols at https://sysy.com/product/HS-491017 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.