SYSY Antibodies

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FOXG1

Cat.No. 544 005; Polyclonal Guinea pig 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_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**: 1 : 500 up to 1 : 1000 **IHC**: 1 : 1000 **IHC-P (FFPE)**: not tested yet
Immunogen	Synthetic peptide corresponding to C-terminal residues of mouse FOXG1 (UniProt Id: Q60987)
Reactivity	Reacts with: mouse (Q60987), rat (Q00939). Other species not tested yet.

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

Background

FOXG1 (Forkhead box G1) is a winged helix (forkhead) transcription factor belonging to the highly conserved FOX family of DNA binding proteins (1). In mammals, FOXG1 is expressed in the developing telencephalon (2). Expression remains detectable throughout postnatal life in specific neuronal cell populations of the hippocampus and cortex (2-4).
Functionally, FOXG1 drives the expansion of neural progenitor cells, controls the balance between proliferation, differentiation and cell cycle exit, and directs early cortical cell fate decisions, thus influencing brain size and complexity (1). In postmitotic neurons it promotes dendrite elongation, spine maintenance and synaptic plasticity, thereby influencing learning, memory, and social behavior (5).
Dosage is critical: Haploinsufficiency causes FOXG1 syndrome, characterized by microcephaly, complete agenesis of the corpus callosum, cognitive disability, dyskinesia, and epilepsy (1,2). Duplications are linked to epilepsy, movement disorders and impaired language development (2). Moreover, FOXG1 is frequently overexpressed in gliomas where it suppresses apoptosis, and its expression level correlates with tumor grade (6).

Selected General References

Transcription and Beyond: Delineating FOXG1 Function in Cortical Development and Disorders.
Hou PS et al. Front Cell Neurosci (2020) PubMed:32158381

FOXG1 Contributes Adult Hippocampal Neurogenesis in Mice.
Wang J et al. Int J Mol Sci (2022) PubMed:36499306

FOXG1-Related Syndrome: From Clinical to Molecular Genetics and Pathogenic Mechanisms.
Wong LC et al. Int J Mol Sci (2019) PubMed:31454984

Disruption of Foxg1 impairs neural plasticity leading to social and cognitive behavioral defects.
Yu B et al. Mol Brain (2019) PubMed:31253171

FOXG1 Expression Is Elevated in Glioma and Inhibits Glioma Cell Apoptosis.
Chen J et al. J Cancer (2018) PubMed:29581755

Foxg1 has an essential role in postnatal development of the dentate gyrus.
Tian C et al. J Neurosci (2012) PubMed:22378868

Access the online factsheet including applicable protocols at https://sysy.com/product/544005 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.