

## MafA

Cat.No. HS-521 003; 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 <b>reconstitution</b> add 50 µl H <sub>2</sub> 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	<b>WB:</b> not tested yet <b>IP:</b> not tested yet <b>IHC:</b> 1 : 1000 <b>IHC-P (FFPE):</b> 1 : 2000 up to 1 : 4000 <b>ELISA:</b> not tested yet
Immunogen	Synthetic peptide corresponding to residues near the carboxy terminus of mouse MafA (UniProt Id: Q8CF90)
Reactivity	Reacts with: mouse (Q8CF90), rat (D3ZNT6). Other species not tested yet.

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

## Background

Maf (musculoaponeurotic fibrosarcoma) family proteins belong to the basic-leucine zipper family of transcription factors and are divided into large Maf and small Maf proteins depending on their molecular size. Four types of large Maf transcription factors have been identified in mice and humans: MafA, MafB, c-Maf and NRL (1). MafA is a  $\beta$ -cell-specific transcription factor in adult pancreatic islets and regulates glucose-stimulated insulin secretion (2). MafB, on the other hand, is specifically expressed in glucagon-expressing  $\alpha$ -cells in the pancreas of adult mice. In the embryonic or neonatal pancreas, immature  $\beta$ -cells first express MafB, whereas MafA is expressed in mature  $\beta$ -cells and is essential for the maintenance of the mature phenotype (3). Several studies have shown, that the expression of MafA is impaired in  $\beta$ -cells of rodents and humans with diabetes (3). In addition to its role in the pancreas, MafA is also involved in the development of neuronal cells. For example, MafA is involved in the development of glutamatergic neurons in the olfactory bulb (4) and of dorsal root ganglia in the spinal cord (5).

## Selected General References

- Functional analysis of large MAF transcription factors and elucidation of their relationships with human diseases.  
Takahashi S et al. *Exp Anim* (2021) PubMed:33762508
- Role of the Transcription Factor MAFA in the Maintenance of Pancreatic  $\beta$ -Cells.  
Nishimura W et al. *Int J Mol Sci* (2022) PubMed:35562869
- Expression of Maf family proteins in glutamatergic neurons of the mouse olfactory bulb.  
Ito A et al. *Dev Neurobiol* (2022) PubMed:34679244
- c-Maf is required for the development of dorsal horn laminae III/IV neurons and mechanoreceptive DRG axon projections.  
Hu J et al. *J Neurosci* (2012) PubMed:22514301
- MafA is a glucose-regulated and pancreatic beta-cell-specific transcriptional activator for the insulin gene.  
Kataoka K et al. *J Biol Chem* (2002) PubMed:12368292

Access the online factsheet including applicable protocols at <https://susy-histosure.com/product/HS-521003> 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.