SYSY Antibodies

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MT3

Cat.No. 333 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin was 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**: 1 : 1000 (AP staining) **IP**: not tested yet **ICC**: not tested yet **IHC**: not tested yet **IHC-P (FFPE)**: not tested yet
Immunogen	Recombinant protein corresponding to AA 1 to 68 from human MT3 (UniProt Id: P25713)
Reactivity	Reacts with: human (P25713), rat (P37361), mouse (P28184). Other species not tested yet.
Specificity	Shows band of expected size in westernblots. The band is blocked by pre-adsorption with the immunogen.

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

Background

Metallo**t**hioneins are cysteine rich proteins of low molecular weight that show ubiquitous expression patterns. Four members MT 1, 2, **3** and 4 have been described, so far. **MT 3**, also known as **Zn7MT3** and **GIF**, is mainly expressed in the brain and exhibits only very low expression levels in other tissues where the other MTs predominate.The precise biological function of MT 3 is unknown but it is regarded as one of the major regulators of cellular zinc in the brain.

Selected General References

Metallothionein-3 (MT-3) in the human adrenal cortex and its disorders.
Felizola SJ et al. Endocr. Pathol. (2014) PubMed:24242700

Effects of metallothionein-3 and metallothionein-1E gene transfection on proliferation, cell cycle, and apoptosis of esophageal cancer cells.
Tian ZQ et al. Genet. Mol. Res. (2013) PubMed:24222235

The molecular mechanism for human metallothionein-3 to protect against the neuronal cytotoxicity of Aβ(1-42) with Cu ions.
Luo Y et al. J. Biol. Inorg. Chem. (2013) PubMed:23086305

Characterization of the role of metallothionein-3 in an animal model of Alzheimer's disease.
Manso Y et al. Cell. Mol. Life Sci. (2012) PubMed:22722772

Role of zinc metallothionein-3 (ZnMt3) in epidermal growth factor (EGF)-induced c-Abl protein activation and actin polymerization in cultured astrocytes.
Lee SJ et al. J. Biol. Chem. (2011) PubMed:21900236

Metallothionein 3 attenuated the apoptosis of neurons in the CA1 region of the hippocampus in the senescence-accelerated mouse/PRONE8 (SAMP8).
Ma F et al. Arq Neuropsiquiatr (2011) PubMed:21359432

Roles of zinc and metallothionein-3 in oxidative stress-induced lysosomal dysfunction, cell death, and autophagy in neurons and astrocytes.
Lee SJ et al. Mol Brain (2010) PubMed:20974010

Redox silencing of copper in metal-linked neurodegenerative disorders: reaction of Zn7metallothionein-3 with Cu2+ ions.
Meloni G et al. J. Biol. Chem. (2007) PubMed:17389590

Differential protein expression induced by transient transfection of metallothionein-3 gene in SH-SY5Y neuroblastoma cell line.
Zhou B et al. Sheng Wu Hua Xue Yu Sheng Wu Wu Li Xue Bao (2003) PubMed:12796812

MT-III, a brain-specific member of the metallothionein gene family.
Palmiter RD et al. Proc. Natl. Acad. Sci. U.S.A. (1992) PubMed:1631128

Access the online factsheet including applicable protocols at https://sysy.com/product/333003 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.