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**: 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 our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form 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. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C.

Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Polyclonal Antibodies

- **Crude antisera**: With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies**: Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein.
  For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.