SYSY Antibodies

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TIMP1

Cat.No. 542 005; 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 (see remarks) **IHC**: 1 : 500 **IHC-P (FFPE)**: 1 : 500
Immunogen	Synthetic peptide corresponding to residues surrounding AA 160 of mouse TIMP1 (UniProt Id: P12032)
Reactivity	Reacts with: human (P01033), rat (P30120), mouse (P12032). Other species not tested yet.
Remarks	**ICC**: Some residual secreted TIMP1 can be observed in PFA-fixed mixed neuronal cell cultures as extracellular protein aggregates.

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

Background

Tissue inhibitor of metalloproteinase-1 (TIMP1) is an extracellular protein and endogenous regulator of matrix metalloproteinases (MMPs), essential for extracellular matrix homeostasis. In addition to its inhibitory function, TIMP1 binds membrane receptors such as CD63, activating intracellular signaling pathways that support cell survival, migration, and differentiation (1).
In the central nervous system, elevated TIMP1 expression during early postnatal development suggests key roles in neuronal differentiation, survival, and gliogenesis, including the migration of astrocytes and oligodendrocyte precursors. In the healthy adult brain, TIMP1 expression is relatively low and primarily localized to neuronal cell bodies, indicating tightly controlled physiological activity (2).
TIMP1 is strongly induced in response to CNS injury and neurodegenerative conditions, including epilepsy, myelin damage, and Alzheimer's disease, where it is mainly expressed by reactive astrocytes and contributes to inflammatory pathways and blood–brain barrier regulation (3,4,5).
Clinically, elevated TIMP1 levels in plasma and tumor tissues are associated with poor outcomes in multiple cancers, including prostate, colon, and lung cancer, supporting its utility as a promising biomarker for disease progression and early detection (6).

Selected General References

An alternate perspective on the roles of TIMPs and MMPs in pathology.
Moore CS et al. Am J Pathol (2012) PubMed:22033229

TIMPs: versatile extracellular regulators in cancer.
Jackson HW et al. Nat Rev Cancer (2017) PubMed:27932800

Dorsal horn neurons release extracellular ATP in a VNUT-dependent manner that underlies neuropathic pain.
Masuda T et al. Nat Commun (2016) PubMed:27515581

Astrocytic tissue inhibitor of metalloproteinase-1 (TIMP-1) promotes oligodendrocyte differentiation and enhances CNS myelination.
Moore CS et al. J Neurosci (2011) PubMed:21508247

Ontogeny of MMPs and TIMPs in the murine neocortex.
Bednarek N et al. Pediatr Res (2009) PubMed:19092727

Tissue inhibitor of metalloproteinase (TIMP)-1: the TIMPed balance of matrix metalloproteinases in the central nervous system.
Gardner J et al. J Neurosci Res (2003) PubMed:14648584

Access the online factsheet including applicable protocols at https://sysy.com/product/542005 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.