SYSY Antibodies

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PI16

Cat.No. 558 004; Polyclonal Guinea pig antibody, 100 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µl antiserum, lyophilized. For **reconstitution** add 100 µl H_2O, then aliquot and store at -20°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 : 500 (fluorescent detection) **IP**: not tested yet **ICC**: not tested yet **IHC**: not tested yet **IHC-P (FFPE)**: 1 : 1000
Immunogen	Recombinant protein corresponding to residues near the central region of mouse PI16 (UniProt Id: Q9ET66)
Reactivity	Reacts with: mouse (Q9ET66). Weaker signal: rat (D3ZGM7). Other species not tested yet.

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

Background

PI16 (peptidase inhibitor 16) is a secreted glycoprotein of the CAP superfamily (cysteine rich secretory proteins, antigen 5, pathogenesis related 1). The predicted molecular mass of PI16 is approximately 53 kDa, however, due to extensive post-translational modification, particularly glycosylation, PI16 migrates on SDS-PAGE as several higher molecular weight bands (1). It is mainly produced by fibroblasts, stromal and other mesenchymal cells, with high levels in heart, adipose tissue, vasculature, and skin (2 4). In the extracellular space PI16 likely regulates protease activity, cell matrix contacts, and tissue remodeling (3,4). Although its exact biochemical role remains unclear, PI16 has become a useful marker for distinct fibroblast subsets and stromal compartments (2,3). In fibroblast rich organs it is linked to extracellular matrix organization, remodeling, and intercellular signaling (2,3) and is especially enriched in adventitial fibroblasts, where it participates in vascular homeostasis, fibrosis, and inflammation (4). Cardiac PI16 marks fibroblast populations that support structural integrity and respond to injury (2). In cancer, PI16 identifies specific cancer associated fibroblast (CAF) subsets; PI16 positive CAFs contribute to stromal remodeling, matrix deposition, and signaling that affect tumor growth, immune infiltration, and metastasis (3,5). Thus, PI16 serves as a marker and potential regulator of fibroblast heterogeneity, tissue remodeling, and stromal influence on disease.

Selected General References

Peptidase inhibitor 16 is a membrane-tethered regulator of chemerin processing in the myocardium.
Regn M et al. J Mol Cell Cardiol (2016) PubMed:27539859

Cross-tissue organization of the fibroblast lineage.
Buechler MB et al. Nature (2021) PubMed:33981032

Pathogenic Potential of Hic1-Expressing Cardiac Stromal Progenitors.
Soliman H et al. Cell Stem Cell (2020) PubMed:31978365

Cross-Species Single-Cell Analysis of Pancreatic Ductal Adenocarcinoma Reveals Antigen-Presenting Cancer-Associated Fibroblasts.
Elyada E et al. Cancer Discov (2019) PubMed:31197017

PI16 is a shear stress and inflammation-regulated inhibitor of MMP2.
Hazell GG et al. Sci Rep (2016) PubMed:27996045

Access the online factsheet including applicable protocols at https://sysy.com/product/558004 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.