SYSY Antibodies

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S100A16

Cat.No. 547 005; 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 up to 1 : 1000 **IHC**: 1 : 500 **IHC-P (FFPE)**: 1 : 500 up to 1 : 1000 (see remarks)
Immunogen	Full-length recombinant human protein (UniProt Id: Q96FQ6)
Reactivity	Reacts with: rat (A6J6N9), human (Q96FQ6). Weaker signal: mouse (Q9D708). Other species not tested yet.
Remarks	**IHC-P (FFPE)**: Antigen retrieval with Tris-EDTA buffer pH 9 is recommended for chromogenic detection. For chromogenic detection, an optimized AGR time of 20 min minutes is recommended for best results.

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

Background

S100A16 is a member of the S100 family of calcium-binding proteins, which are small, dimeric proteins characterized by two conserved EF-hand Ca^{2+}-binding motifs. Unlike most S100 proteins, only the C-terminal EF-hand of S100A16 is functional, while the N-terminal domain lacks Ca^{2+}-binding capacity (1,2).
Its expression is regulated by intracellular Ca^{2+} levels. Subcellularly, S100A16 localizes to the cytoplasm, nucleus, and membrane, and can shuttle between these compartments in a Ca^{2+}-dependent manner (2,3). In the adult brain, for example, S100A16 is found in the nuclei, somata, and neurites of astrocytes, exhibiting region- and astrocyte-type-specific subcellular distributions (2). S100A16 is widely expressed in normal tissues, including skin, esophagus, and adipose tissue. Elevated expression has been linked to poor prognosis in several cancers (3–8). Functionally, S100A16 overexpression promotes proliferation, migration, and invasiveness. Mechanistically, it is involved in protein processing, gene regulation, and cell cycle control, contributing to cytoskeletal remodeling and cellular differentiation.

Selected General References

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An Update on S100A16 in Human Cancer.
Basnet S et al. Biomolecules (2023) PubMed:37509106

Calcium Binding Protein S100A16 Expedites Proliferation, Invasion and Epithelial-Mesenchymal Transition Process in Gastric Cancer.
You X et al. Front Cell Dev Biol (2021) PubMed:34650982

S100A16 promotes metastasis and progression of pancreatic cancer through FGF19-mediated AKT and ERK1/2 pathways.
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Prognostic significance of S100A16 subcellular localization in lung adenocarcinoma.
Kobayashi M et al. Hum Pathol (2018) PubMed:29320753

S100A16, a promising candidate as a prognostic marker for platinum-based adjuvant chemotherapy in resected lung adenocarcinoma.
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S100A16, a novel calcium-binding protein of the EF-hand superfamily.
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Access the online factsheet including applicable protocols at https://sysy.com/product/547005 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.