SYSY Antibodies

Rudolf-Wissell-Str. 28a
37079 Göttingen, Germany
Phone: +49 551-50556-0
Fax: +49 551-50556-384
E-mail: sales@sysy.com
Web: www.sysy.com

Annexin A2

Cat.No. 540 004; 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**: not tested yet **IP**: not tested yet **ICC**: 1 : 500 up to 1 : 1000 (see remarks) **IHC**: not tested yet **IHC-P**: 1 : 500 up to 1 : 1000 (see remarks) **IHC-Fr**: 1 : 500 up to 1 : 1000 (see remarks)
Immunogen	Synthetic peptides corresponding to residues surrounding AA 20 and AA 180 of mouse Annexin A2 (UniProt Id: P07356)
Remarks	**ICC**: Methanol fixation is recommended. **IHC-P**: Antigen retrieval with Tris-EDTA buffer pH 9 is recommended for chromogenic detection. **IHC-Fr**: Methanol fixation is recommended.

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

Background

Annexin A2 (ANXA2) is a calcium-dependent phospholipid-binding protein of the annexin family that is widely expressed in eukaryotic cells. It is localized at the plasma membrane as well as in the cytoplasm and participates in several cellular processes, including endocytosis, exocytosis, signal transduction, actin cytoskeleton remodeling, and membrane organization (1,2). ANXA2 commonly forms a heterotetrameric complex with S100A10, which regulates its calcium sensitivity and functional activity (3). The protein is highly expressed in endothelial cells and contributes to membrane stability, endothelial junction maintenance, and vascular integrity. ANXA2 also acts as a co-receptor for plasminogen and tissue plasminogen activator (tPA), promoting plasmin generation and extracellular matrix degradation, thereby facilitating angiogenesis and cell migration (4). Increased ANXA2 expression has been reported in multiple cancers and inflammatory diseases and is associated with tumor progression, neovascularization, and immune activation (5). Due to its endothelial membrane localization and immunological relevance, ANXA2 has been identified as a potential endothelial autoantigen in diseases such as Behçet's disease (6).

Selected General References

Annexin A2 at the interface between F-actin and membranes enriched in phosphatidylinositol 4,5,-bisphosphate.
Hayes MJ et al. Biochim Biophys Acta (2009) PubMed:19022301

The annexin A2 system and angiogenesis.
Liu W et al. Biol Chem (2016) PubMed:27366903

Annexin A2 regulates angiogenesis and invasion phenotypes of malignant glioma.
Onishi M et al. Brain Tumor Pathol (2015) PubMed:25697644

Annexin A2 as a target endothelial cell membrane autoantigen in Behçet's disease.
Chen P et al. Sci Rep (2015) PubMed:25641213

Contribution of annexin 2 to the architecture of mature endothelial adherens junctions.
Heyraud S et al. Mol Cell Biol (2008) PubMed:18160703

Phosphoinositide specificity of and mechanism of lipid domain formation by annexin A2-p11 heterotetramer.
Gokhale NA et al. J Biol Chem (2005) PubMed:16230353

Access the online factsheet including applicable protocols at https://sysy.com/product/540004 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.