SYSY Antibodies

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α-Internexin

Cat.No. 167 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. 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**: 1 : 500 up to 1 : 1000 (see remarks) **IHC**: 1 : 500 (see remarks) **IHC-P (FFPE)**: 1 : 200 (see remarks) **IHC-Fr**: 1 : 500 (see remarks)
Immunogen	Full-length recombinant human α-Internexin (UniProt Id: Q16352)
Reactivity	Reacts with: mouse (P46660), rat (P23565), human (Q16352). Other species not tested yet.
Remarks	**ICC**: Methanol fixation is recommended. The following fixatives are not advised: 4% formaldehyde/PFA. **IHC**: Antigen retrieval with citrate buffer pH 6 is required. **IHC-P (FFPE)**: Antigen retrieval with Tris-EDTA buffer pH 9 is recommended for chromogenic detection. **IHC-Fr**: Acetone fixation is recommended.

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

Background

The cytoskeleton of most eukaryotic cells is composed of three distinct components: Actin-based microfilaments, tubulin based microtubules and intermediate filaments (IFs).
α-Internexin is a neuronal intermediate filament of type four. It is assumed to be expressed by all neurons and preceeds the onset of the expression of the heavy, medium and light variants of neurofilaments which are major components of the neuronal IFs.
Alterations in the phosphorylation state of IFs have been associated with neurodegenerative diseases like Alzheimer, Parkinson, dementia with Lewy bodies (DLB), and motor neuron disease (MND).

Selected General References

Alpha-internexin is structurally and functionally associated with the neurofilament triplet proteins in the mature CNS.
Yuan A et al. J. Neurosci. (2006) PubMed:17005864

Topography of alpha-internexin-positive neuronal aggregates in 10 patients with neuronal intermediate filament inclusion disease.
Armstrong RA et al. Eur. J. Neurol. (2006) PubMed:16722980

The expression of alpha-internexin and peripherin in the developing mouse pineal gland.
Ko TL et al. J. Biomed. Sci. (2005) PubMed:16132113

Overexpression of neuronal intermediate filament protein alpha-internexin in PC12 cells.
Chien CL et al. J. Neurosci. Res. (2005) PubMed:15880430

No requirement of alpha-internexin for nervous system development and for radial growth of axons.
Levavasseur F et al. Brain Res. Mol. Brain Res. (1999) PubMed:10350642

Overexpression of alpha-internexin causes abnormal neurofilamentous accumulations and motor coordination deficits in transgenic mice.
Ching GY et al. J. Neurosci. (1999) PubMed:10191315

The pathway of assembly of intermediate filaments from recombinant alpha-internexin.
Abumuhor IA et al. J. Struct. Biol. (1998) PubMed:9878574

Excitable membranes and synaptic transmission: postsynaptic mechanisms. Localization of alpha-internexin in the postsynaptic density of the rat brain.
Suzuki T et al. Brain Res. (1997) PubMed:9310396

Compartmentation of alpha-internexin and neurofilament triplet proteins in cultured hippocampal neurons.
Benson DL et al. J. Neurocytol. (1996) PubMed:8737171

Phosphorylation of a 62 kd porcine alpha-internexin, a newly identified intermediate filament protein.
Tanaka J et al. Biochem. Biophys. Res. Commun. (1993) PubMed:8216281

Alpha-internexin, a novel neuronal intermediate filament protein, precedes the low molecular weight neurofilament protein (NF-L) in the developing rat brain.
Kaplan MP et al. J. Neurosci. (1990) PubMed:2201753

alpha-Internexin, a 66-kD intermediate filament-binding protein from mammalian central nervous tissues.
Pachter JS et al. J. Cell Biol. (1985) PubMed:2413040

Access the online factsheet including applicable protocols at https://sysy.com/product/167003 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.