

## $\alpha$ -Internexin

Cat.No. 167 002; Polyclonal rabbit antibody, 200  $\mu$ l antiserum (lyophilized)

### Data Sheet

|                            |   |
|----------------------------|---|
| Reconstitution/<br>Storage | 200 $\mu$ l antiserum, lyophilized. For <b>reconstitution</b> add 200 $\mu$ l H <sub>2</sub> O, then aliquot and store at -20°C until use.<br>Antibodies should be stored at +4°C when still lyophilized. Do not freeze!<br>For detailed information, see back of the data sheet. |
| Applications               | <b>WB:</b> 1 : 1000 up to 1 : 5000 (AP staining)<br><b>IP:</b> not tested yet<br><b>ICC:</b> 1 : 500 (see remarks)<br><b>IHC:</b> not tested yet<br><b>IHC-P:</b> not tested yet  |
| Immunogen                  | Recombinant protein corresponding to AA 1 to 499 from human $\alpha$ -Internexin (UniProt Id: Q16352)   |
| Reactivity                 | Reacts with: rat (P23565), mouse (P46660).<br>Other species not tested yet.   |
| Specificity                | Specific for $\alpha$ -internexin.  |
| Matching<br>control        | 167-0P  |
| Remarks                    | <b>ICC:</b> Ice cold methanol 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).  **$\alpha$ -Internexin** is a neuronal intermediate filament of type four. It is assumed to be expressed by all neurons and precedes 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.  
Levasseur 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/167002> or scan the QR-code.



# FAQ - How should I store my antibody?

## Shipping Conditions

- All our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form 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. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

## Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

## Product Specific Hints for Storage

### Control proteins / peptides

- Store at -20°C to -80°C.

### Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

### Polyclonal Antibodies

- **Crude antisera:** With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies:** Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

### Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

# Avoid repeated freeze-thaw cycles for all antibodies!

## FAQ - How should I reconstitute my antibody?

### Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein. For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.