SYSY Antibodies

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Numb

Cat.No. 373-0P; control peptide, 100 µg peptide (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg peptide, lyophilized. For **reconstitution** add 100 µl H_2O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°C until use. Control peptides should be stored at -20°C when still lyophilized! For detailed information, see back of the data sheet.
Immunogen	Synthetic peptide corresponding to AA 625 to 644 from mouse Numb (UniProt Id: Q9QZS3)
Recommended dilution	Optimal concentrations should be determined by the end-user.
Matching antibodies	373 003
Remarks	This control peptide consists of the synthetic peptide (aa 625-644 of mouse Numb) that has been used for immunization. It has been tested in preadsorption experiments and blocks efficiently and specifically the corresponding signal in Western blots. The amount of peptide needed for efficient blocking depends on the titer and on the affinity of the antibody to the antigen.

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

Background

Numb proteins (**Numb** and Numblike) display a complex pattern of functions such as the control of asymmetric cell division, cell fate choice, endocytosis, cell adhesion, and cell migration. Numb has been shown to inhibit Notch signaling by recruiting α-Adaptin and stimulating endocytosis of Notch. It was also demonstrated that Numb helps activate the tumor suppressor p53, suggesting that loss of Numb in cancerous cells would result in both the activation of the potential oncogene Notch and the diminution of tumor suppression by p53. Numb is itself regulated via ubiquitinylation.
Numb and Numblike are redundant but essential in maintaining neural progenitor cells during early neurogenesis by allowing cells to choose progenitor over neuronal fates. Numb and Numblike were also recently discovered to be involved in cardiac morphogenesis.
Four isoforms of mammalian Numb are described with predicted molecular masses of 65, 66, 71, and 72 kDa.

Selected General References

Numb family proteins: novel players in cardiac morphogenesis and cardiac progenitor cell differentiation.
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Precardiac deletion of Numb and Numblike reveals renewal of cardiac progenitors.
Shenje LT et al. Elife (2014) PubMed:24843018

NUMB inhibition of NOTCH signalling as a therapeutic target in prostate cancer.
Flores AN et al. Nat Rev Urol (2014) PubMed:25134838

The multiple functions of Numb.
Gulino A et al. Exp. Cell Res. (2010) PubMed:19944684

A role for Numb in p53 stabilization.
Carter S et al. Genome Biol. (2008) PubMed:18492217

The mammalian Golgi regulates numb signaling in asymmetric cell division by releasing ACBD3 during mitosis.
Zhou Y et al. Cell (2007) PubMed:17418793

Postnatal deletion of Numb/Numblike reveals repair and remodeling capacity in the subventricular neurogenic niche.
Kuo CT et al. Cell (2006) PubMed:17174898

Continuing role for mouse Numb and Numbl in maintaining progenitor cells during cortical neurogenesis.
Petersen PH et al. Nat. Neurosci. (2004) PubMed:15273690

Numb and Numblike control cell number during vertebrate neurogenesis.
Johnson JE et al. Trends Neurosci. (2003) PubMed:12900165

Numb: "Adapting" notch for endocytosis.
Jafar-Nejad H et al. Dev. Cell (2002) PubMed:12194846

Mouse numb is an essential gene involved in cortical neurogenesis.
Zhong W et al. Proc. Natl. Acad. Sci. U.S.A. (2000) PubMed:10841580

Characterization of four mammalian numb protein isoforms. Identification of cytoplasmic and membrane-associated variants of the phosphotyrosine binding domain.
Dho SE et al. J. Biol. Chem. (1999) PubMed:10551880

Asymmetric localization of a mammalian numb homolog during mouse cortical neurogenesis.
Zhong W et al. Neuron (1996) PubMed:8755477

Access the online factsheet including applicable protocols at https://sysy.com/product/373-0P 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.