

## Numb

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

### Data Sheet

Reconstitution/ Storage	100 µg peptide, lyophilized. For <b>reconstitution</b> add 100 µl H <sub>2</sub> O to get a 1 mg/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 Numbl) 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 Numbl are redundant but essential in maintaining neural progenitor cells during early neurogenesis by allowing cells to choose progenitor over neuronal fates. Numb and Numbl 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. Wu M et al. *Biomol Concepts* (2015) PubMed:25883210
- Precardiac deletion of Numb and Numbl 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/Numbl 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 Numbl 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 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.