

## Numblike

Cat.No. 374 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

### Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin was added for stabilization. For <b>reconstitution</b> add 50 µl H <sub>2</sub> O 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	<b>WB:</b> 1 : 1000 (AP staining) <b>IP:</b> not tested yet <b>ICC:</b> 1 : 100 <b>IHC:</b> not tested yet <b>IHC_P:</b> not tested yet <b>IHC_FR:</b> 1 : 500 (see remarks)
Immunogen	Synthetic peptide corresponding to AA 579 to 595 from mouse Numbl (UniProt ID: O08919)
Reactivity	Reacts with: rat (A1L1I3), mouse (O08919). Other species not tested yet.
Specificity	K.O.
Matching control	374-0P
Remarks	<b>IHC_FR:</b> PFA fixation is recommended.

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

## Background

Numb proteins (**Numbl**ike and Numb) display a complex pattern of functions such as the control of asymmetric cell division, cell fate choice, endocytosis, cell adhesion, and cell migration. They have been shown to inhibit Notch signaling by stimulating endocytosis of Notch. Numb and Numbl like have at least partially distinct functions. Numbl like is a negative regulator of the NF-κB signaling pathway by abrogating TRAF5-induced activation of NF-κB. Recently, Numbl like was implicated as a physiologically relevant target of microRNA miR-34a in neural progenitor cells allowing for enhanced Notch signaling and inhibition of neuronal differentiation. Numb and Numbl like are essential in maintaining neural progenitor cells during early neurogenesis by allowing cells to choose progenitor over neuronal fates. They were recently also discovered to be involved in cardiac morphogenesis.

## Selected General References

- Numb family proteins: novel players in cardiac morphogenesis and cardiac progenitor cell differentiation. Wu M, Li J. *Biomolecular concepts* (2015) 62: 137-48. .
- Pre-cardiac deletion of Numb and Numbl like reveals renewal of cardiac progenitors. Shenje LT, Andersen P, Uosaki H, Fernandez L, Rainer PP, Cho GS, Lee DJ, Zhong W, Harvey RP, Kass DA, Kwon C, et al. *eLife* (2014) 3: e02164. .
- Numbl like regulates proliferation, apoptosis, and invasion of lung cancer cell. Yingjie L, Jian T, Changhai Y, Jingbo L. *Tumour biology : the journal of the International Society for Oncodevelopmental Biology and Medicine* (2013) 345: 2773-80. .
- Inhibition of Notch2 by Numb/Numbl like controls myocardial compaction in the heart. Yang J, Bücken S, Jungblut B, Böttger T, Cinnamon Y, Tchorz J, Müller M, Bettler B, Harvey R, Sun QY, Schneider A, et al. *Cardiovascular research* (2012) 962: 276-85. .
- MiR-34a represses Numbl in murine neural progenitor cells and antagonizes neuronal differentiation. Fineberg SK, Datta P, Stein CS, Davidson BL. *PLoS one* (2012) 76: e38562. .
- Numbl inhibits glioma cell migration and invasion by suppressing TRAF5-mediated NF-κB activation. Tao T, Cheng C, Ji Y, Xu G, Zhang J, Zhang L, Shen A. *Molecular biology of the cell* (2012) 2314: 2635-44. .
- Numbl like and Numb differentially affect p53 and Sonic Hedgehog signaling. Liu L, Lanner F, Lendahl U, Das D. *Biochemical and biophysical research communications* (2011) 4133: 426-31. .
- The multiple functions of Numb. Gulino A, Di Marcotullio L, Screpanti I. *Experimental cell research* (2010) 3166: 900-6. .
- Numb and Numbl are required for maintenance of cadherin-based adhesion and polarity of neural progenitors. Rasin MR, Gazula VR, Breunig JJ, Kwan KY, Johnson MB, Liu-Chen S, Li HS, Jan LY, Jan YN, Rakic P, Sestan N, et al. *Nature neuroscience* (2007) 107: 819-27. .
- Postnatal deletion of Numb/Numbl like reveals repair and remodeling capacity in the subventricular neurogenic niche. Kuo CT, Mirzadeh Z, Soriano-Navarro M, Rasin M, Wang D, Shen J, Sestan N, Garcia-Verdugo J, Alvarez-Buylla A, Jan LY, Jan YN, et al. *Cell* (2006) 1276: 1253-64. .
- Continuing role for mouse Numb and Numbl in maintaining progenitor cells during cortical neurogenesis. Petersen PH, Zou K, Krauss S, Zhong W. *Nature neuroscience* (2004) 78: 803-11. .

Access the online factsheet including applicable protocols at <https://sysy.com/product/374003> 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.