

## Numb

Cat.No. 373 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

### Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Rabbit serum albumin was added for stabilization. For reconstitution add 50 µl H <sub>2</sub> O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use.
Applications	<b>WB:</b> 1 : 1000 (AP staining) <b>IP:</b> not tested yet <b>ICC:</b> 1 : 100 <b>IHC:</b> 1 : 500 <b>IHC-P/FFPE:</b> not tested yet
Immunogen	Synthetic peptide corresponding to AA 625 to 644 from mouse Numb (UniProt Id: Q9QZS3)
Reactivity	Reacts with: rat (Q2LC84), mouse (Q9QZS3). Other species not tested yet.
Specificity	Specific for Numb. Recognizes all four isoforms. (K.O. verified)
matching control	373-0P

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

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  $\alpha$ -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.  
 Wu M, Li J  
*Biomolecular concepts* (2015) 6(2): 137-48.

Precardiac deletion of Numb and Numblike reveals renewal of cardiac progenitors.  
 Shenje LT, Andersen P, Uosaki H, Fernandez L, Rainer PP, Cho GS, Lee DI, Zhong W, Harvey RP, Kass DA, Kwon C, et al.  
*eLife* (2014) 3: e02164.

NUMB inhibition of NOTCH signalling as a therapeutic target in prostate cancer.  
 Flores AN, McDermott N, Meunier A, Marignol L  
*Nature reviews. Urology* (2014) 11(9): 499-507.

The multiple functions of Numb.  
 Gulino A, Di Marcotullio L, Sclepanti I  
*Experimental cell research* (2010) 316(6): 900-6.

A role for Numb in p53 stabilization.  
 Carter S, Vousden KH  
*Genome biology* (2008) 9(5): 221.

The mammalian Golgi regulates numb signaling in asymmetric cell division by releasing ACBD3 during mitosis.  
 Zhou Y, Atkins JB, Rompani SB, Bancescu DL, Petersen PH, Tang H, Zou K, Stewart SB, Zhong W  
*Cell* (2007) 129(1): 163-78.

Postnatal deletion of Numb/Numblike 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) 127(6): 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) 7(8): 803-11.

Numb and Numblike control cell number during vertebrate neurogenesis.  
 Johnson JE  
*Trends in neurosciences* (2003) 26(8): 395-6.

Numb: "Adapting" notch for endocytosis.  
 Jafar-Nejad H, Norga K, Bellen H  
*Developmental cell* (2002) 3(2): 155-6.

Mouse numb is an essential gene involved in cortical neurogenesis.  
 Zhong W, Jiang MM, Schonemann MD, Meneses JJ, Pedersen RA, Jan LY, Jan YN  
*Proceedings of the National Academy of Sciences of the United States of America* (2000) 97(12): 6844-9.

Characterization of four mammalian numb protein isoforms. Identification of cytoplasmic and membrane-associated variants of the phosphotyrosine binding domain.  
 Dho SE, French MB, Woods SA, McGlade CJ  
*The Journal of biological chemistry* (1999) 274(46): 33097-104.

Asymmetric localization of a mammalian numb homolog during mouse cortical neurogenesis.  
 Zhong W, Feder JN, Jiang MM, Jan LY, Jan YN  
*Neuron* (1996) 17(1): 43-53.