NumbL (H-5): sc-390799

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BIOTECHNOLOGY

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BACKGROUND

In *Drosophila,* neuronal cell fate decisions are directed by NUMB, a signaling adapter protein with two protein-protein interaction domains, namely a phosphotyrosine-binding domain and a proline-rich SH3-binding region (PRR). The mammalian NUMB homolog plays a role in the determination of cell fate during development and binds with a variety of proteins, including Eps15, LNX1 and Notch 1. NumbL (NUMB-like protein), also known as Numb-R, NBL, CAG3A, CTG3a, NUMBLIKE or TNRC23, is a 609 amino acid cytoplasmic protein that, like NUMB, is thought to play a role in cell fate. Expressed at high levels in developing brain tissue, NumbL contains one PID (phosphotyrosine interaction domain) and plays an important role in neuronal differentiation, possibly associating with Eps15 and Notch 1. In mice, deletion of the NumbL gene is associated with early embryonic death, suggesting an essential role for NumbL in early development.

REFERENCES

1. Zhong, W., et al. 1997. Differential expression of mammalian Numb, NumbLike and Notch1 suggests distinct roles during mouse cortical neurogenesis. Development 124: 1887-1897.

2. Petersen, P.H., et al. 2002. Progenitor cell maintenance requires Numb and NumbLike during mouse neurogenesis. Nature 419: 929-934.

3. Li, H.S., et al. 2003. Inactivation of Numb and NumbLike in embryonic dorsal forebrain impairs neurogenesis and disrupts cortical morphogenesis. Neuron 40: 1105-1118.

4. Petersen, P.H., et al. 2004. Continuing role for mouse Numb and NumbL in maintaining progenitor cells during cortical neurogenesis. Nat. Neurosci. 7: 803-811.

5. Huang, E.J., et al. 2005. Targeted deletion of Numb and NumbLike in sensory neurons reveals their essential functions in axon arborization. Genes Dev. 19: 138-151.

6. Anderson, A.C., et al. 2005. The Notch regulator Numb links the Notch and TCR signaling pathways. J. Immunol. 174: 890-897.

7. Petersen, P.H., et al. 2006. The enigma of the Numb-Notch relationship during mammalian embryogenesis. Dev. Neurosci. 28: 156-168.

8. Rasin, M.R., et al. 2007. NUMB and NumbL are required for maintenance of cadherin-based adhesion and polarity of neural progenitors. Nat. Neurosci. 10: 819-827.

9. Ma, Q., et al. 2008. NumbL interacts with TAB2 and inhibits TNFα and IL-1β-induced NF$^\circ$B activation. Cell. Signal. 20: 1044-1051.

CHROMOSOMAL LOCATION

Genetic locus: NUMBL (human) mapping to 19q13.2; Numbl (mouse) mapping to 7 A3.

SOURCE

NumbL (H-5) is a mouse monoclonal antibody raised against amino acids 331-410 mapping within an internal region of NumbL of human origin.

PRODUCT

Each vial contains 200 µg IgG$_{2a}$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

NumbL (H-5) is recommended for detection of NumbL of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for NumbL siRNA (h): sc-62707, NumbL siRNA (m): sc-62708, NumbL shRNA Plasmid (h): sc-62707-SH, NumbL shRNA Plasmid (m): sc-62708-SH, NumbL shRNA (h) Lentiviral Particles: sc-62707-V and NumbL shRNA (m) Lentiviral Particles: sc-62708-V.

Molecular Weight (predicted) of NumbL isoforms: 65/66/71/72 kDa.

Molecular Weight (observed) of NumbL isoforms: 78 kDa.

Positive Controls: Neuro-2A whole cell lysate: sc-364185, 3T3-L1 cell lysate: sc-2243 or IMR-32 cell lysate: sc-2409.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA
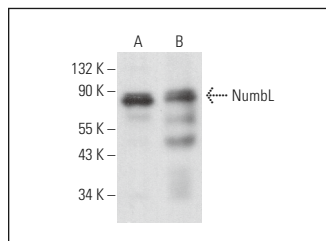
NumbL (H-5): sc-390799. Western blot analysis of NumbL expression in IMR-32 whole cell lysate (**A**) and rat hippocampus tissue extract (**B**).
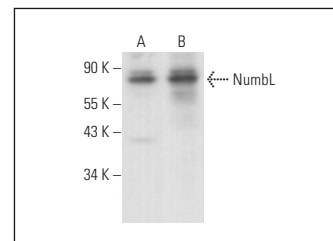
NumbL (H-5): sc-390799. Western blot analysis of NumbL expression in 3T3-L1 (**A**) and Neuro-2A (**B**) whole cell lysates.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.