SANTA CRUZ BIOTECHNOLOGY, INC.

NumbL siRNA (h): sc-62707

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.

CHROMOSOMAL LOCATION

Genetic locus: NUMBL (human) mapping to 19q13.2.

PRODUCT

NumbL siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NumbL shRNA Plasmid (h): sc-62707-SH and NumbL shRNA (h) Lentiviral Particles: sc-62707-V as alternate gene silencing products.

For independent verification of NumbL (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-62707A, sc-62707B and sc-62707C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

NumbL siRNA (h) is recommended for the inhibition of NumbL expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

NumbL (C-4): sc-390590 is recommended as a control antibody for monitoring of NumbL gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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) 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NumbL gene expression knockdown using RT-PCR Primer: NumbL (h)-PR: sc-62707-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.