



NUMB (dT-20): sc-23579

BACKGROUND

Neuronal cell fate decisions in *Drosophila* are directed by NUMB, a signaling adapter protein with two protein-protein interaction domains: a phosphotyrosine-binding domain and a proline-rich SH3-binding region (PRR). Mammalian NUMB homologs play a role in the determination of cell fates during development and bind with Eps15, LNX1 and Notch 1. Conditional mouse mutants with deletion of NUMB in developing sensory ganglia show a reduction in axonal arborization in afferent fibers. Changes in cellular calcium homeostasis influences NUMB-dependent cell fate decisions during development of the nervous system. Chicken NUMB (c-NUMB) protein is localized to the basal cortex of mitotic neuroepithelial cells.

REFERENCES

- Spana, E.P., et al. 1995. Asymmetric localization of NUMB autonomously determines sibling neuron identity in the *Drosophila* CNS. *Development* 121: 3489-3494.
- Spana, E.P., et al. 1996. NUMB antagonizes notch signaling to specify sibling neuron cell fates. *Neuron* 17: 21-26.
- Skeath, J.B., et al. 1998. Sanpodo and notch act in opposition to NUMB to distinguish sibling neuron fates in the *Drosophila* CNS. *Development* 125: 1857-1865.
- Wakamatsu, Y., et al. 1999. NUMB localizes in the basal cortex of mitotic avian neuroepithelial cells and modulates neuronal differentiation by binding to Notch 1. *Neuron* 23: 71-81.
- Verdi, J.M., et al. 1999. Distinct human NUMB isoforms regulate differentiation vs. proliferation in the neuronal lineage. *Proc. Natl. Acad. Sci. USA* 96: 10472-10476.
- Chan, S.L., et al. 2002. NUMB modifies neuronal vulnerability to amyloid β -peptide in an isoform-specific manner by a mechanism involving altered calcium homeostasis: implications for neuronal death in Alzheimer's disease. *Neuromolecular Med.* 1: 55-67.
- Castaneda-Castellanos, D.R., et al. 2004. Controlling neuron number: does NUMB do the math? *Nat. Neurosci.* 7: 793-794.
- 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.

SOURCE

NUMB (dT-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of NUMB of *Drosophila melanogaster* origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-23579 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NUMB (dT-20) is recommended for detection of NUMB of *Drosophila melanogaster* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.

PROTOCOLS

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