

Lingo-1 (N-12): sc-48584

BACKGROUND

Lingo-1 is a 614-amino acid protein that plays an important role in the negative regulation of myelination by oligodendrocytes in the central nervous system (CNS). Lingo-1 is a nervous system-specific transmembrane protein that interacts with NgR1 and p75 to make up a receptor complex that binds to Nogo, a protein that inhibits axonal regeneration. Reduction of Lingo-1 activity down-regulates RhoA (a protein related to cytoskeleton regulation) activity, promotes oligodendrocyte differentiation, and increases axonal myelination in neuronal tissues. Conversely, overexpression of Lingo-1 activates RhoA and inhibits oligodendrocyte differentiation and myelination. Lingo-1 up-regulation may be a characteristic of activity-induced neural plasticity responses. Lingo-1 may be a critical deterrent of myelin and nerve fiber repair in multiple sclerosis, an inflammatory disease that causes gradual destruction of myelin in the CNS.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609791. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
2. Bronfman, F.C., et al. 2004. Multi-tasking by the p75 neuro-trophin receptor: sortilin things out? *EMBO Rep.* 5: 867-871.
3. Mi, S., et al. 2004. Lingo-1 is a component of the Nogo-66 receptor/p75 signaling complex. *Nat. Neurosci.* 7: 221-228.
4. Okafuji, T., et al. 2005. Expression pattern of Lingo-1 in the developing nervous system of the chick embryo. *Gene Expr. Patterns* 6: 57-62.
5. Mi, S., et al. 2005. Lingo-1 negatively regulates myelination by oligodendrocytes. *Nat. Neurosci.* 8: 745-751.
6. Trifunovski, A., et al. 2005. Neuronal activity-induced regulation of Lingo-1. *Neuroreport* 15: 2397-2400.
7. Trifunovski, A., et al. 2006. Selective decline of Nogo mRNA in the aging brain. *Neuroreport* 17: 913-916.
8. Satoh, J., et al. 2007. TROY and LINGO-1 expression in astrocytes and macrophages/microglia in multiple sclerosis lesions. *Neuropathol. Appl. Neurobiol.* 33: 99-107.
9. Lee, X., et al. 2007. NGF regulates the expression of axonal LINGO-1 to inhibit oligodendrocyte differentiation and myelination. *J. Neurosci.* 27: 220-225.

CHROMOSOMAL LOCATION

Genetic locus: LINGO1 (human) mapping to 15q24.3; Lingo1 (mouse) mapping to 9 B.

SOURCE

Lingo-1 (N-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Lingo-1 of human origin.

STORAGE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-48584 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Lingo-1 (N-12) is recommended for detection of Lingo-1 of mouse, rat and human 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).

Lingo-1 (N-12) is also recommended for detection of Lingo-1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Lingo-1 siRNA (h): sc-60938, Lingo-1 siRNA (m): sc-60939, Lingo-1 siRNA (r): sc-156095, Lingo-1 shRNA Plasmid (h): sc-60938-SH, Lingo-1 shRNA Plasmid (m): sc-60939-SH, Lingo-1 shRNA Plasmid (r): sc-156095-SH, Lingo-1 shRNA (h) Lentiviral Particles: sc-60938-V, Lingo-1 shRNA (m) Lentiviral Particles: sc-60939-V and Lingo-1 shRNA (r) Lentiviral Particles: sc-156095-V.

Molecular Weight of Lingo-1: 70 kDa.

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.

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.