SANTA CRUZ BIOTECHNOLOGY, INC.

# Lingo-1 siRNA (m): sc-60939

## 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 downregulates 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


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2. Bronfman, F.C. and Fainzilber, M. 2004. Multi-tasking by the p75 neurotrophin 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. and Tanaka, H. 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 (mouse) mapping to 9 B.

## 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.

## PRODUCT

Lingo-1 siRNA (m) 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 Lingo-1 shRNA Plasmid (m): sc-60939-SH and Lingo-1 shRNA (m) Lentiviral Particles: sc-60939-V as alternate gene silencing products.

For independent verification of Lingo-1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-60939A, sc-60939B and sc-60939C.

## 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

Lingo-1 siRNA (m) is recommended for the inhibition of Lingo-1 expression in mouse 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Lingo-1 gene expression knockdown using RT-PCR Primer: Lingo-1 (m)-PR: sc-60939-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.