

Contactin 3 siRNA (m): sc-43090

BACKGROUND

Changes in synaptic efficacy can mediate crucial processes during learning and memory formation. Accumulating evidence implicates cell adhesion molecules in activity-dependent synaptic modifications associated with paired-pulse facilitation (PPF), long-term potentiation (LTP) and long-term depression (LTD). Among the cell adhesion molecules involved in these processes are the contactins. Contactins are immunoglobulin superfamily members that play a selective role in synaptic plasticity, PPF and LTD, and may regulate cell-cell interactions contributing to synaptic plasticity in conjunction with other synapse targeting molecules, including paranodin and phosphacan. In addition, contactins are essential components that control expression and distribution of Na⁺ channels in neurons, junctional attachment at the paranode, and ultimately the physiology of the myelinated nerve. The human Contactin 1 gene encodes a 1,018 amino acid protein. The human Contactin 3 gene encodes a 646 amino acid plasmacytoma-associated neuronal glycoprotein. The human Contactin 5 gene encodes a 1,100 amino acid neural adhesion molecule. The human Contactin 6 gene encodes a 1,028 amino acid neural adhesion molecule.

REFERENCES

1. Ranscht, B. 1988. Sequence of contactin, a 130-kD glycoprotein concentrated in areas of interneuronal contact, defines a new member of the immunoglobulin supergene family in the nervous system. *J. Cell Biol.* 107: 1561-1573.
2. Fields, R.D. and Itoh, K. 1996. Neural cell adhesion molecules in activity-dependent development and synaptic plasticity. *Trends Neurosci.* 19: 473-480.
3. Kazarinova-Noyes, K., Malhotra, J.D., McEwen, D.P., Mattei, L.N., Berglund, E.O., Ranscht, B., Levinson, S.R., Schachner, M., Shrager, P., Isom, L.L. and Xiao, Z.C. 2001. Contactin associates with Na⁺ channels and increases their functional expression. *J. Neurosci.* 21: 7517-7525.
4. Boyle, M.E., Berglund, E.O., Murai, K.K., Weber, L., Peles, E. and Ranscht, B. 2001. Contactin orchestrates assembly of the septate-like junctions at the paranode in myelinated peripheral nerve. *Neuron* 30: 385-397.
5. Murai, K.K., Misner, D. and Ranscht, B. 2002. Contactin supports synaptic plasticity associated with hippocampal long-term depression but not potentiation. *Curr. Biol.* 12: 181-190.
6. LocusLink Report (LocusID: 1272). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

Genetic locus: Cntn3 (mouse) mapping to 6 D3.

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

Contactin 3 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Contactin 3 shRNA Plasmid (m): sc-43090-SH and Contactin 3 shRNA (m) Lentiviral Particles: sc-43090-V as alternate gene silencing products.

For independent verification of Contactin 3 (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-43090A, sc-43090B and sc-43090C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Contactin 3 siRNA (m) is recommended for the inhibition of Contactin 3 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 μ M in 66 μ l. 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 Contactin 3 gene expression knockdown using RT-PCR Primer: Contactin 3 (m)-PR: sc-43090-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.