

LRRTM4 siRNA (m): sc-149123

BACKGROUND

The leucine-rich repeat (LRR) is a 20-30 amino acid motif that forms a hydrophobic α/β horseshoe fold, allowing it to accommodate several leucine residues within a tightly packed core. All LRRs contain a variable segment and a highly conserved segment, the latter of which accounts for 11 or 12 residues of the entire LRR motif. The LRRTM protein family plays a role in the regulation of various cellular events during nervous system development. Localizing predominantly to the nervous system, LRRTM family members are known to exhibit synaptogenic activity. LRRTM4 (leucine-rich repeat transmembrane neuronal protein 4) is a 590 amino acid member of the LRRTM protein family. Expressed in neuronal tissues, LRRTM4 may play a role in the development and maintenance of the vertebrate nervous system. A single-pass type I membrane protein, LRRTM4 contains 10 LRRs. LRRTM4 is expressed as two isoforms produced by alternative splicing.

REFERENCES

1. Clark, H.F., Gurney, A.L., Abaya, E., Baker, K., Baldwin, D., Brush, J., Chen, J., Chow, B., Chui, C., Crowley, C., Currell, B., Deuel, B., Dowd, P., Eaton, D., Foster, J., Grimaldi, C., Gu, Q., Hass, P.E., Heldens, S., Huang, A., et al. 2003. The secreted protein discovery initiative (SPDI), a large-scale effort to identify novel human secreted and transmembrane proteins: a bioinformatics assessment. *Genome Res.* 13: 2265-2270.
2. Lauren, J., Airaksinen, M.S., Saarma, M. and Timmusk, T. 2003. A novel gene family encoding leucine-rich repeat transmembrane proteins differentially expressed in the nervous system. *Genomics* 81: 411-421.
3. Haines, B.P. and Rigby, P.W. 2007. Developmentally regulated expression of the LRRTM gene family during mid-gestation mouse embryogenesis. *Gene Expr. Patterns* 7: 23-29.
4. Online Mendelian Inheritance in Man, OMIM[™]. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 610870. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Brose, N. 2009. Synaptogenic proteins and synaptic organizers: "many hands make light work". *Neuron* 61: 650-652.
6. Linhoff, M.W., Lauren, J., Cassidy, R.M., Dobie, F.A., Takahashi, H., Nygaard, H.B., Airaksinen, M.S., Strittmatter, S.M. and Craig, A.M. 2009. An unbiased expression screen for synaptogenic proteins identifies the LRRTM protein family as synaptic organizers. *Neuron* 61: 734-749.

CHROMOSOMAL LOCATION

Genetic locus: *Lrrtm4* (mouse) mapping to 6 C3.

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

LRRTM4 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 LRRTM4 shRNA Plasmid (m): sc-149123-SH and LRRTM4 shRNA (m) Lentiviral Particles: sc-149123-V as alternate gene silencing products.

For independent verification of LRRTM4 (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-149123A, sc-149123B and sc-149123C.

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

LRRTM4 siRNA (m) is recommended for the inhibition of LRRTM4 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 LRRTM4 gene expression knockdown using RT-PCR Primer: LRRTM4 (m)-PR: sc-149123-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.