

opticin siRNA (m): sc-75997

BACKGROUND

The leucine-rich (LRR) repeat 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 LRR repeats contain a variable segment and a highly conserved segment, the latter of which accounts for 11 or 12 residues of the entire LRR motif. Opticin, also known as OPTC or OPT, is a 332 amino acid protein that is secreted into the extracellular matrix and contains seven LRR repeats. Expressed in skin and fetal liver and also present in ocular tissues, such as the retina, cornea and iris, opticin functions to bind collagen fibrils and, via this interaction, is thought to regulate fibril spacing, morphology and organization. Opticin is subject to post-translational O-glycosylation and may be associated with the pathogenesis of primary open angle glaucoma.

REFERENCES

1. Reardon, A.J., et al. 2000. Identification in vitreous and molecular cloning of opticin, a novel member of the family of leucine-rich repeat proteins of the extracellular matrix. *J. Biol. Chem.* 275: 2123-2129.
2. Hobby, P., et al. 2000. Cloning, modeling, and chromosomal localization for a small leucine-rich repeat proteoglycan (SLRP) family member expressed in human eye. *Mol. Vis.* 6: 72-78.
3. Friedman, J.S., et al. 2002. Protein localization in the human eye and genetic screen of opticin. *Hum. Mol. Genet.* 11: 1333-1342.
4. Le Goff, M.M., et al. 2003. Characterization of opticin and evidence of stable dimerization in solution. *J. Biol. Chem.* 278: 45280-45287.
5. Online Mendelian Inheritance in Man, OMIM[™]. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 605127. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Ramesh, S., et al. 2004. Immunolocalisation of opticin in the human eye. *Br. J. Ophthalmol.* 88: 697-702.
7. Acharya, M., et al. 2007. Evaluation of the OPTC gene in primary open angle glaucoma: functional significance of a silent change. *BMC Mol. Biol.* 8: 21.
8. Kumar, A., et al. 2007. Role of CYP1B1, MYOC, OPTN, and OPTC genes in adult-onset primary open-angle glaucoma: predominance of CYP1B1 mutations in Indian patients. *Mol. Vis.* 13: 667-676.

CHROMOSOMAL LOCATION

Genetic locus: Optc (mouse) mapping to 1 E4.

PRODUCT

opticin 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 opticin shRNA Plasmid (m): sc-75997-SH and opticin shRNA (m) Lentiviral Particles: sc-75997-V as alternate gene silencing products.

For independent verification of opticin (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-75997A, sc-75997B and sc-75997C.

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

opticin siRNA (m) is recommended for the inhibition of opticin 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.

GENE EXPRESSION MONITORING

opticin (F-2): sc-271306 is recommended as a control antibody for monitoring of opticin gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor opticin gene expression knockdown using RT-PCR Primer: opticin (m)-PR: sc-75997-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.