SANTA CRUZ BIOTECHNOLOGY, INC.

Nir1 siRNA (m): sc-75925

BACKGROUND

The Nirs (Nir1, Nir2, and Nir3), human homologues of *Drosophila* retinal degeneration B (rdgB), have been considered candidate genes for human inherited retinal degeneration diseases. The three Nir proteins are highly expressed in the developing retina, each exhibiting a distinct distribution profile. Nir1, also known as CORD5, RDGBA3 or PITPNM3, is a 974 amino acid peripheral membrane protein that belongs to the PtdIns transfer protein family. Nir1 is expressed in the brain and spleen, and at low levels in ovary. Nir1 interacts with PYK2 via its C-terminus and catalyzes the transfer of phosphatidylinositol and phosphatidylcholine between membranes. Defects in Nir1 are the cause of cone-rod dystrophy type 5 (CORD5). CORDs are inherited retinal dystrophies belonging to the group of pigmentary retinopathies. CORDs are characterized by retinal pigment deposits visible on fundus examination, predominantly in the macular region, and initial loss of cone photoreceptors followed by rod degeneration, which leads to decreased visual acuity and sensitivity in the central visual field, followed by loss of peripheral vision.

REFERENCES

1. Fullwood, Y., et al. 1999. Cloning and characterization of a novel human phosphatidylinositol transfer protein, rdgBβ. J. Biol. Chem. 274: 31553-31558.
2. Lev, S., et al. 1999. Identification of a novel family of targets of PYK2 related to *Drosophila* retinal degeneration B (rdgB) protein. Mol. Cell. Biol. 19: 2278-2288.
3. Litvak, V., et al. 2002. Targeting of Nir2 to lipid droplets is regulated by a specific threonine residue within its PI-transfer domain. Curr. Biol. 12: 1513-1518.
4. Tian, D., et al. 2002. Cellular and developmental distribution of human homologues of the *Drosophilia* rdgB protein in the rat retina. Invest. Ophthalmol. Vis. Sci. 43: 1946-1953.
5. Litvak, V., et al. 2002. Nir2, a human homolog of *Drosophila melanogaster* retinal degeneration B protein, is essential for cytokinesis. Mol. Cell. Biol. 22: 5064-5075.
6. Tian, D., et al. 2002. Nir2, a novel regulator of cell morphogenesis. Mol. Cell. Biol. 22: 2650-2662.

CHROMOSOMAL LOCATION

Genetic locus: Pitpnm3 (mouse) mapping to 11 B4.

PRODUCT

Nir1 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 Nir1 shRNA Plasmid (m): sc-75925-SH and Nir1 shRNA (m) Lentiviral Particles: sc-75925-V as alternate gene silencing products.

For independent verification of Nir1 (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-75925A, sc-75925B and sc-75925C.

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

Nir1 siRNA (m) is recommended for the inhibition of Nir1 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 Nir1 gene expression knockdown using RT-PCR Primer: Nir1 (m)-PR: sc-75925-PR (20 µl). 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.