SANTA CRUZ BIOTECHNOLOGY, INC.

Nir2 siRNA (h): sc-40853

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. Immunolocalization studies revealed that Nir2 is mainly localized in the Golgi apparatus in interphase cells, but it is recruited to the cleavage furrow and the midbody during cytokinesis. Additionally, Nir2, like rdgB, contains an amino-terminal phosphatidylinositol-transfer protein (PITP)-like domain and is essential for cytokinesis. In contrast to related PITP proteins, the rdgB proteins, which include Nir2 and Nir3, contain an amino-terminal PITP-like domain, an acidic, calcium-binding domain, six putative transmembrane domains and a conserved carboxyl-terminal domain. It has been suggested that Nir and rdgB proteins represent a new family of evolutionarily conserved PYK2-binding proteins that play a role in the control of calcium and phosphoinositide metabolism downstream of G protein-coupled receptors.

REFERENCES

1. Fullwood, Y., et al. 1999. Cloning and characterization of a novel human phosphatidylinositol transfer protein, rdgB β. J. Biol. Chem. 274: 31553-31558.
2. Tian, D. and Lev, S. 2002. Cellular and developmental distribution of human homologues of the *Drosophilia* rdgB protein in the rat retina. Invest. Ophthalmol. Vis. Sci. 43: 1946-1953.
3. Tian, D., et al. 2002. Nir2, a novel regulator of cell morphogenesis. Mol. Cell. Biol. 22: 2650-2662.
4. 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.
5. 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.

CHROMOSOMAL LOCATION

Genetic locus: PITPNM1 (human) mapping to 11q13.2.

PRODUCT

Nir2 siRNA (h) 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 Nir2 shRNA Plasmid (h): sc-40853-SH and Nir2 shRNA (h) Lentiviral Particles: sc-40853-V as alternate gene silencing products.

For independent verification of Nir2 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-40853A, sc-40853B and sc-40853C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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

Nir2 siRNA (h) is recommended for the inhibition of Nir2 expression in human 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 Nir2 gene expression knockdown using RT-PCR Primer: Nir2 (h)-PR: sc-40853-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.