

GNB1L siRNA (m): sc-145653

BACKGROUND

WD-repeats are motifs that are found in a variety of proteins and are characterized by a conserved core of 40-60 amino acids that commonly form a tertiary propeller structure. While proteins that contain WD-repeats participate in a wide range of cellular functions, they are generally involved in regulatory mechanisms concerning chromatin assembly, cell cycle control, signal transduction, RNA processing, apoptosis and vesicular trafficking. GNB1L (guanine nucleotide binding protein (G protein), β polypeptide 1-like), also known as FKSG1, GY2, KIAA1645 or WDR14, is a 327 amino acid protein that exists as two alternatively spliced isoforms and contains six WD repeats. Expressed ubiquitously with highest levels present in spleen, liver, heart, kidney, pancreas and skeletal muscle, GNB1L is thought to play a role in the etiology of the velocardiofacial/DiGeorge syndrome (VCFS/DGS), a developmental disorder that is the result of a deletion on chromosome 22 and is associated with a variety of facial anomalies and cardiac malformations.

REFERENCES

1. van der Voorn, L. and Ploegh, H.L. 1992. The WD-40 repeat. *FEBS Lett.* 307: 131-134.
2. Neer, E.J., Schmidt, C.J., Nambudripad, R. and Smith, T.F. 1994. The ancient regulatory-protein family of WD-repeat proteins. *Nature* 371: 297-300.
3. Smith, T.F., Gaitatzes, C., Saxena, K. and Neer, E.J. 1999. The WD repeat: a common architecture for diverse functions. *Trends Biochem. Sci.* 24: 181-185.
4. Gong, L., Liu, M., Jen, J. and Yeh, E.T. 2000. GNB1L, a gene deleted in the critical region for DiGeorge syndrome on 22q11, encodes a G-protein β -subunit-like polypeptide. *Biochim. Biophys. Acta* 1494: 185-188.
5. Funke, B., Pandita, R.K. and Morrow, B.E. 2001. Isolation and characterization of a novel gene containing WD40 repeats from the region deleted in velo-cardio-facial/DiGeorge syndrome on chromosome 22q11. *Genomics* 73: 264-271.
6. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 610778. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
7. Williams, N.M., Glaser, B., Norton, N., Williams, H., Pierce, T., Moskvina, V., Monks, S., Del Favero, J., Goossens, D., Rujescu, D., Giegling, I., Kirov, G., Craddock, N., Murphy, K.C., O'Donovan, M.C. and Owen, M.J. 2008. Strong evidence that GNB1L is associated with schizophrenia. *Hum. Mol. Genet.* 17: 555-566.
8. Ishiguro, H., Koga, M., Horiuchi, Y., Noguchi, E., Morikawa, M., Suzuki, Y., Arai, M., Niizato, K., Iritani, S., Itokawa, M., Inada, T., Iwata, N., Ozaki, N., Ujike, H., Kunugi, H., Sasaki, T., Takahashi, M., Watanabe, Y., et al. 2008. Supportive evidence for reduced expression of GNB1L in schizophrenia. *Schizophr. Bull.* 36: 756-765.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: Gnb1l (mouse) mapping to 16 A3.

PRODUCT

GNB1L siRNA (m) is a target-specific 19-25 nt siRNA 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 GNB1L shRNA Plasmid (m): sc-145653-SH and GNB1L shRNA (m) Lentiviral Particles: sc-145653-V as alternate gene silencing 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 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

GNB1L siRNA (m) is recommended for the inhibition of GNB1L 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 GNB1L gene expression knockdown using RT-PCR Primer: GNB1L (m)-PR: sc-145653-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.