SANTA CRUZ BIOTECHNOLOGY, INC.

GDE1 siRNA (h): sc-93175

BACKGROUND

GDE1 (glycerophosphodiester phosphodiesterase 1), also known as MIR16, is a 331 amino acid multi-pass membrane protein that localizes to both the membrane and the cytoplasm and contains one GDPD domain. Expressed in a wide variety of tissues, GDE1 uses magnesium as a cofactor to catalyze the conversion of 1-(sn-glycero-3-phospho)-1D-Myo-inositol to myo-inositol and sn-glycerol 3-phosphate, an event that is modulated by G protein signaling pathways and provides a link between phosphoinositide metabolism and G protein signal transduction. The gene encoding GDE1 maps to human chromosome 16, which encodes over 900 genes and comprises nearly 3% of the human genome. The GAN gene is located on chromosome 16 and, with mutation, may lead to giant axonal neuropathy, a nervous system disorder characterized by increasing malfunction with growth. The rare disorder Rubinstein-Taybi syndrome is also associated with chromosome 16, as is Crohn's disease, which is a gastrointestinal inflammatory condition.

REFERENCES

1. Zheng, B., et al. 2000. MIR16, a putative membrane glycerophosphodiester phosphodiesterase, interacts with RGS16. Proc. Natl. Acad. Sci. USA 97: 3999-4004.
2. Zheng, B., et al. 2003. GDE1/MIR16 is a glycerophosphoinositol phosphodiesterase regulated by stimulation of G protein-coupled receptors. Proc. Natl. Acad. Sci. USA 100: 1745-1750.
3. Fisher, E., et al. 2005. Glycerophosphocholine-dependent growth requires Gde1p (YPL110c) and Git1p in *Saccharomyces cerevisiae*. J. Biol. Chem. 280: 36110-36117.
4. Bachmann, A.S., et al. 2006. Genomic organization, characterization, and molecular 3D model of GDE1, a novel mammalian glycerophosphoinositol phosphodiesterase. Gene 371: 144-153.
5. Ma, J., et al. 2007. Identifying leukocyte gene expression patterns associated with plasma lipid levels in human subjects. Atherosclerosis 191: 63-72.
6. Yanaka, N. 2007. Mammalian glycerophosphodiester phosphodiesterases. Biosci. Biotechnol. Biochem. 71: 1811-1818.

CHROMOSOMAL LOCATION

Genetic locus: GDE1 (human) mapping to 16p12.3.

PRODUCT

GDE1 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 GDE1 shRNA Plasmid (h): sc-93175-SH and GDE1 shRNA (h) Lentiviral Particles: sc-93175-V as alternate gene silencing products.

For independent verification of GDE1 (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-93175A, sc-93175B and sc-93175C.

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

GDE1 siRNA (h) is recommended for the inhibition of GDE1 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.

GENE EXPRESSION MONITORING

GDE1 (202B2X): sc-517642 is recommended as a control antibody for monitoring of GDE1 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 GDE1 gene expression knockdown using RT-PCR Primer: GDE1 (h)-PR: sc-93175-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.