SANTA CRUZ BIOTECHNOLOGY, INC.

GDAP1 siRNA (h): sc-77458

BACKGROUND

Glutathione S-transferases (GSTs) function to conjugate reduced glutathione to many exogenous and endogenous hydrophobic electrophiles. Although it shares the carboxy and amino-terminal glutathione S-transferase domains, GDAP1 (ganglioside-induced differentiation-associated protein 1) is characterized as a GST-like protein because it contains an extended GST domain II and a predicted transmembrane domain, two characteristics which are unusual for GST family members. GDAP1 may function in a signal transduction pathway that is responsible for ganglioside-induced neurite differentiation and also may play a role in protecting myelin membranes from free-radical damage. Mutations in the gene encoding GDAP1 is the cause of many forms of Charcot-Marie-Tooth disease, a common inherited disorder of the peripheral nervous system that is characterized by reduced nerve conduction velocities, slow progressive distal muscle atrophy and absent deep tendon reflexes.

REFERENCES

1. Marco, A., et al. 2004. Evolutionary and structural analyses of GDAP1, involved in Charcot-Marie-Tooth disease, characterize a novel class of glutathione transferase-related genes. Mol. Biol. Evol. 21: 176-187.
2. Kabzi ska, D., et al. 2007. Charcot-Marie-Tooth disease type 4C4 caused by a novel Pro153Leu substitution in the GDAP1 gene. Acta Myol. 26: 108-111.
3. Sevilla, T., et al. 2008. Vocal cord paresis and diaphragmatic dysfunction are severe and frequent symptoms of GDAP1-associated neuropathy. Brain 131: 3051-3061.
4. Xin, B., et al. 2008. A novel mutation in the GDAP1 gene is associated with autosomal recessive Charcot-Marie-Tooth disease in an Amish family. Clin. Genet. 74: 274-278.
5. Cassereau, J., et al. 2008. Mitochondrial complex I deficiency in GDAP1-related autosomal dominant Charcot-Marie-Tooth disease (CMT2K). Neurogenetics 10: 145-150.
6. Auer-Grumbach, M., et al. 2008. Two novel mutations in the GDAP1 and PRX genes in early onset Charcot-Marie-Tooth syndrome. Neuropediatrics 39: 33-38.

CHROMOSOMAL LOCATION

Genetic locus: GDAP1 (human) mapping to 8q21.11.

PRODUCT

GDAP1 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 GDAP1 shRNA Plasmid (h): sc-77458-SH and GDAP1 shRNA (h) Lentiviral Particles: sc-77458-V as alternate gene silencing products.

For independent verification of GDAP1 (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-77458A, sc-77458B and sc-77458C.

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

GDAP1 siRNA (h) is recommended for the inhibition of GDAP1 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 GDAP1 gene expression knockdown using RT-PCR Primer: GDAP1 (h)-PR: sc-77458-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.