SANTA CRUZ BIOTECHNOLOGY, INC.

GNPTG siRNA (h): sc-93496

BACKGROUND

GNPTG (N-acetylglucosamine-1-phosphate transferase, γ subunit), also known as GlcNAc-1-phosphotransferase subunit γ, UDP-N-acetylglucosamine-1-phosphotransferase subunit γ or C16orf27, is a 305 amino acid secreted protein containing one PRKCSH domain. Localizing to Golgi apparatus, GNPTG is widely expressed and exists as a hexamer of two α, two β and two γ subunits linked by disulfide bonds. The α and β subunits are thought to function in catalytic activity, while the γ subunits may play a role in the recognition of lysosomal enzymes. The hexameric complex making up GNPTG is essential for catalyzing the initial step towards mannose 6-phosphate lysosomal recognition marker synthesis. Mutations to GNPTG have been linked to mucolipidosis type III complementation group C (MLIIIC), an autosomal recessive disease of lysosomal hydrolase trafficking.

REFERENCES

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7. Persichetti, E., et al. 2009. Identification and molecular characterization of six novel mutations in the UDP-N-acetylglucosamine-1-phosphotransferase γ subunit (GNPTG) gene in patients with mucolipidosis III γ. Hum. Mutat. 30: 978-984.
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CHROMOSOMAL LOCATION

Genetic locus: GNPTG (human) mapping to 16p13.3.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PRODUCT

GNPTG 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 GNPTG shRNA Plasmid (h): sc-93496-SH and GNPTG shRNA (h) Lentiviral Particles: sc-93496-V as alternate gene silencing products.

For independent verification of GNPTG (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-93496A, sc-93496B and sc-93496C.

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

GNPTG siRNA (h) is recommended for the inhibition of GNPTG 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 GNPTG gene expression knockdown using RT-PCR Primer: GNPTG (h)-PR: sc-93496-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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