SANTA CRUZ BIOTECHNOLOGY, INC.

β-glucosidase 2 siRNA (h): sc-92737

BACKGROUND

β-glucosidase 2, also known as non-lysosomal glucosylceramidase (NLGase), Glucosylceramidase 2, GBA2 or AD035, is a 927 amino acid non-lysosomal glucosylceramidase that catalyzes glucosylceramide into ceramide and free glucose, and is suggested to play a role in carbohydrate transport and metabolism. A single-pass membrane protein, β-glucosidase 2 exists as three alternatively spliced isoforms that are widely expressed but found at highest levels in placenta, kidney, brain, skeletal muscle, kidney and heart, with low levels found in liver. β-glucosidase 2 activity has been linked to sphingomyelin generation and prevention of glycolipid accumulation. The gene encoding β-glucosidase 2 maps to human chromosome 9p13.3, which houses over 900 genes and comprises nearly 4% of the human genome.

REFERENCES

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4. Matern, H., et al. 2001. Molecular cloning and expression of human bile acid β-glucosidase. J. Biol. Chem. 276: 37929-37933.
5. Yildiz, Y., et al. 2006. Mutation of β-glucosidase 2 causes glycolipid storage disease and impaired male fertility. J. Clin. Invest. 116: 2985-2994.
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7. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 609471. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
8. Farrer, M.J., et al. 2009. Glucosidase-β variations and Lewy body disorders. Parkinsonism Relat. Disord. 15: 414-416.

CHROMOSOMAL LOCATION

Genetic locus: GBA2 (human) mapping to 9p13.3.

PRODUCT

β-glucosidase 2 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 β-glucosidase 2 shRNA Plasmid (h): sc-92737-SH and β-glucosidase 2 shRNA (h) Lentiviral Particles: sc-92737-V as alternate gene silencing products.

For independent verification of β-glucosidase 2 (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-92737A, sc-92737B and sc-92737C.

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

β-glucosidase 2 siRNA (h) is recommended for the inhibition of β-glucosidase 2 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

β-glucosidase 2 (D-10): sc-393782 is recommended as a control antibody for monitoring of β-glucosidase 2 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 β-glucosidase 2 gene expression knockdown using RT-PCR Primer: β-glucosidase 2 (h)-PR: sc-92737-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.