SANTA CRUZ BIOTECHNOLOGY, INC.

MAN2B1 siRNA (h): sc-97712

BACKGROUND

MAN2B1 (mannosidase α class 2B member 1), also known as MANB (mannosidase α-B) or LAMAN (lysosomal α-mannosidase), is a 1,011 amino acid lysosomal protein that cleaves α-mannosidic linkages. Essential for N-linked carbohydrate catabolism during glycoprotein turnover, MAN2B1 binds one zinc ion per subunit and belongs to the glycosyl hydrolase 38 family. MAN2B1 is processed into five peptide chains and undergoes post-translational glycosylation. Defects in the gene encoding MAN2B1 are the cause of a lysosomal storage disease known as lysosomal α-mannosidosis (AM). Patients with AM have an accumulation of unbranched oligosaccharide chains primarily in the central nervous system, typically resulting in impaired hearing, mental retardation and frequent infections.

REFERENCES

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2. Bach, G., et al. 1978. A new variant of mannosidosis with increased residual enzymatic activity and mild clinical manifestation. Pediatr. Res. 12: 1010-1015.
3. Nebes, V.L., et al. 1994. Human lysosomal α-mannosidase: isolation and nucleotide sequence of the full-length cDNA. Biochem. Biophys. Res. Commun. 200: 239-245.
4. Beccari, T., et al. 1996. Assignment of lysosomal α-D-mannosidase to mouse chromosome 8. Mamm. Genome 7: 707-708.
5. Riise, H.M., et al. 1997. Genomic structure of the human lysosomal α-mannosidase gene (MANB). Genomics 42: 200-207.
6. Berg, T., et al. 1999. Spectrum of mutations in α-mannosidosis. Am. J. Hum. Genet. 64: 77-88.
7. Olmez, A., et al. 2003. α-mannosidosis and mutational analysis in a Turkish patient. Turk. J. Pediatr. 45: 46-50.
8. Sbaragli, M., et al. 2005. Identification and characterization of five novel MAN2B1 mutations in Italian patients with α-mannosidosis. Hum. Mutat. 25: 320.

CHROMOSOMAL LOCATION

Genetic locus: MAN2B1 (human) mapping to 19p13.2.

PRODUCT

MAN2B1 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 MAN2B1 shRNA Plasmid (h): sc-97712-SH and MAN2B1 shRNA (h) Lentiviral Particles: sc-97712-V as alternate gene silencing products.

For independent verification of MAN2B1 (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-97712A, sc-97712B and sc-97712C.

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

MAN2B1 siRNA (h) is recommended for the inhibition of MAN2B1 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 MAN2B1 gene expression knockdown using RT-PCR Primer: MAN2B1 (h)-PR: sc-97712-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.