SANTA CRUZ BIOTECHNOLOGY, INC.

IDS siRNA (m): sc-146143

BACKGROUND

IDS (Iduronate 2-sulfatase), also known as SIDS, is a 550 amino acid protein that localizes to the lysosome and belongs to the sulfatase family. Expressed in lung, liver, kidney and placenta, IDS uses calcium as a cofactor to catalyze the hydrolysis of select sulfate groups on dermatan sulfate, heparan sulfate and heparin and, via this catalytic activity, is essential for the lysosomal degradation of both dermatan and heparan sulfate. Defects in the gene encoding IDS are the cause of mucopolysaccharidosis type 2 (MPS2), more commonly known as Hunter syndrome, which is characterized by skeletal deformities, hepatosplenomegaly and progressive cardiopulmonary deterioration, as well as neurological damage and, in some cases, death. IDS exists as two alternatively spliced isoforms, designated long and short.

REFERENCES

1. Wilson, P.J., et al. 1993. Sequence of the human iduronate 2-sulfatase (IDS) gene. Genomics 17: 773-775.
2. Malmgren, H., et al. 1995. Identification of an alternative transcript from the human iduronate-2-sulfatase (IDS) gene. Genomics 29: 291-293.
3. Li, P., et al. 1999. Molecular basis of iduronate-2-sulphatase gene mutations in patients with mucopolysaccharidosis type II (Hunter syndrome). J. Med. Genet. 36: 21-27.
4. Bonuccelli, G., et al. 2001. The effect of four mutations on the expression of iduronate-2-sulfatase in mucopolysaccharidosis type II. Biochim. Biophys. Acta 1537: 233-238.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 30990. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Ricci, V., et al. 2003. Expression studies of two novel in CIS-mutations identified in an intermediate case of Hunter syndrome. Am. J. Med. Genet. A 120A: 84-87.
7. Tomatsu, S., et al. 2004. General implications for CpG hot spot mutations: methylation patterns of the human iduronate-2-sulfatase gene locus. Hum. Mutat. 23: 590-598.
8. Parkinson-Lawrence, E., et al. 2005. Analysis of normal and mutant iduronate-2-sulphatase conformation. Biochem. J. 386: 395-400.

CHROMOSOMAL LOCATION

Genetic locus: Ids (mouse) mapping to X A7.1.

PRODUCT

IDS siRNA (m) 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 IDS shRNA Plasmid (m): sc-146143-SH and IDS shRNA (m) Lentiviral Particles: sc-146143-V as alternate gene silencing products.

For independent verification of IDS (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-146143A, sc-146143B and sc-146143C.

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

IDS siRNA (m) is recommended for the inhibition of IDS expression in mouse 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

IDS (B-5): sc-365047 is recommended as a control antibody for monitoring of IDS 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 IDS gene expression knockdown using RT-PCR Primer: IDS (m)-PR: sc-146143-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.