SANTA CRUZ BIOTECHNOLOGY, INC.

DNASE1L1 siRNA (h): sc-77165

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

DNASE1L1 (deoxyribonuclease I-like 1), also known as XIB, DNL1L or DNASEX, is a 302 amino acid protein that localizes to the endoplasmic reticulum and belongs to the deoxyribonuclease family. Expressed at high levels in cardiac and skeletal muscle and at lower levels in a variety of tissues throughout the body, DNASE1L1 exists as multiple alternatively spliced isoforms and is thought to function in a similar manner to DNase I, possibly mediating internucleosomal DNA degradation via catalytic cleavage events. The gene encoding DNASE1L1 maps to human chromosome X, which contains nearly 153 million base pairs and houses over 1,000 genes. In conjunction with chromosome Y, chromosome X is responsible for sex determination. There are a number of conditions related to an abnormal number and combination of sex chromosomes, some of which include Turner's syndrome, color blindness, hemophilia and Duchenne muscular dystrophy.

REFERENCES

1. Parrish, J.E., et al. 1995. A muscle-specific DNase I-like gene in human Xq28. Hum. Mol. Genet. 4: 1557-1564.
2. Coy, J.F., et al. 1996. Isolation, differential splicing and protein expression of a DNase on the human X chromosome. Cell Death Differ. 3: 199-206.
3. Pergolizzi, R., et al. 1996. Cloning of a gene encoding a DNase I-like endonuclease in the human Xq28 region. Gene 168: 267-270.
4. Rodriguez, A.M., et al. 1997. Identification, localization and expression of two novel human genes similar to deoxyribonuclease I. Genomics 42: 507-513.
5. Online Mendelian Inheritance in Man, OMIM™. 1997 Johns Hopkins University, Baltimore, MD. MIM Number: 300081. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Malferrari, G., et al. 1999. Molecular characterization of a novel endonuclease (Xib) and possible involvement in lysosomal glycogen storage disorders. Exp. Mol. Pathol. 66: 123-130.

CHROMOSOMAL LOCATION

Genetic locus: DNASE1L1 (human) mapping to Xq28.

PRODUCT

DNASE1L1 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 DNASE1L1 shRNA Plasmid (h): sc-77165-SH and DNASE1L1 shRNA (h) Lentiviral Particles: sc-77165-V as alternate gene silencing products.

For independent verification of DNASE1L1 (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-77165A, sc-77165B and sc-77165C.

PROTOCOLS

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

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

DNASE1L1 siRNA (h) is recommended for the inhibition of DNASE1L1 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

DNASE1L1 (KK-M3): sc-134320 is recommended as a control antibody for monitoring of DNASE1L1 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 DNASE1L1 gene expression knockdown using RT-PCR Primer: DNASE1L1 (h)-PR: sc-77165-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Pal, K., et al. 2021. Ubiquitous membrane-bound DNase activity in podosomes and invadopodia. J. Cell Biol. 220: e202008079.

RESEARCH USE

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