SANTA CRUZ BIOTECHNOLOGY, INC.

HYAL3 siRNA (h): sc-60826

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Hyaluronidases (HAases or HYALs) are a family of lysosomal enzymes that are crucial for the spread of bacterial infections and of toxins present in a variety of venoms. HYALs may also be involved in the progression of cancer. In humans, six HYAL proteins have been identified. HYAL proteins use hydrolysis to degrade hyaluronic acid (HA), which is present in body fluids, tissues, and the extracellular matrix of vertebrate tissues. HA keeps tissues hydrated, maintains osmotic balance, and promotes cell proliferation, differentiation, and metastasis. HA is also an important structural component of cartilage and acts as a lubricant in joints. HYAL3 is a 417-amino acid protein that is highly expressed in testis and bone marrow, but has relatively low expression in all other tissues. Unlike HYAL 1 and HYAL2, HYAL3 is an unlikely tumor supressor candidate, given the lack of detected mutations in its gene.

REFERENCES

1. Sun, L., et al. 1999. Expression profile of hyaluronidase mRNA transcripts in the kidney and in renal cells. Kidney Blood Press. Res. 21: 413-418.
2. Triggs-Raine, B., et al. 1999. Mutations in HYAL1, a member of a tandemly distributed multigene family encoding disparate hyaluronidase activities, cause a newly described lysosomal disorder, mucopolysaccharidosis IX. Proc. Nat. Acad. Sci. USA 96: 6296-6300.
3. Csoka, A.B., et al. 2001. The six hyaluronidase-like genes in the human and mouse genomes. Matrix Biol. 20: 499-508.
4. Shuttleworth, T.L., et al. 2002. Characterization of the murine hyaluronidase gene region reveals complex organization and cotranscription of Hyal1 with downstream genes, Fus2 and Hyal3. J. Biol. Chem. 277: 23008-23018.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 604038. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Gatphayak, K., et al. 2003. Assignment of the porcine hyaluronidase-3 (HYAL3) gene to SSC13 q21 by FISH and confirmation by hybrid panel analyses. Cytogenet. Genome Res. 101: 178.
7. Gatphayak, K., et al. 2004. Molecular characterization of porcine hyaluronidase genes 1, 2, and 3 clustered on SSC13q21. Cytogenet. Genome Res. 106: 98-106.

CHROMOSOMAL LOCATION

Genetic locus: HYAL3 (human) mapping to 3p21.31.

PRODUCT

HYAL3 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 HYAL3 shRNA Plasmid (h): sc-60826-SH and HYAL3 shRNA (h) Lentiviral Particles: sc-60826-V as alternate gene silencing products.

For independent verification of HYAL3 (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-60826A, sc-60826B and sc-60826C.

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

HYAL3 siRNA (h) is recommended for the inhibition of HYAL3 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

HYAL3 (E-4): sc-374036 is recommended as a control antibody for monitoring of HYAL3 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 HYAL3 gene expression knockdown using RT-PCR Primer: HYAL3 (h)-PR: sc-60826-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.