SANTA CRUZ BIOTECHNOLOGY, INC.

elastin siRNA (h): sc-43360

BACKGROUND

Elastic fibers, which are comprised primarily of elastin, endow loose connective tissue with a resilience that compliments the tensile strength of collagenous fibers. Elastin is the main component of the extracellular matrix of arteries, and it performs a regulatory function during arterial development by controlling proliferation of smooth muscle and stabilizing arterial structure. Elastin is composed largely of glycine, proline, and other hydrophobic residues, and it contains multiple lysine-derived crosslinks, such as desmosines, which link individual polypeptide chains into a rubber-like network. During aging, the elasticity of connective tissue becomes reduced because of the cross-linking of collagenous fibers with elastin. Deficiencies of elastin are associated with multiple disorders, such as supravalvular aortic stenosis and Williams-Beuren syndrome. The human elastin gene maps to chromosome 7q11.23.

REFERENCES

1. Henin-Pizieux, O., et al. 1979. Isolation and characterization of desmosine(s) containing peptide fractions of normal and diseases human aortic elastin. Paroi Arterielle 5: 41-53.
2. Cambell, N. 1990. Biology. Redwood City, CA: the Benjamin/Cummings Publishing Company, Inc. 784-785.
3. Fazio, M.J., et al. 1991. Human elastin gene: new evidence for localization to the long arm of chromosome 7. Am. J. Hum. Genet. 48: 696-703.
4. Ewart, A.K., et al. 1993. Hemizygosity at the elastin locus in a developmental disorder, Williams syndrome. Nat. Genet. 5: 11-16.
5. Zhang, M.C., et al. 1999. Cutis laxa arising from frameshift mutations in exon 30 of the Elastin gene (ELN). J. Biol. Chem. 274: 981-996.

CHROMOSOMAL LOCATION

Genetic locus: ELN (human) mapping to 7q11.23.

PRODUCT

elastin 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 elastin shRNA Plasmid (h): sc-43360-SH and elastin shRNA (h) Lentiviral Particles: sc-43360-V as alternate gene silencing products.

For independent verification of elastin (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-43360A, sc-43360B and sc-43360C.

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

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

elastin (BA-4): sc-58756 is recommended as a control antibody for monitoring of elastin 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 elastin gene expression knockdown using RT-PCR Primer: elastin (h)-PR: sc-43360-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. Kuo, C.J., et al. 2013. elastin, a novel extracellular matrix protein adhering to mycobacterial antigen 85 complex. J. Biol. Chem. 288: 3886-3896.

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.