SANTA CRUZ BIOTECHNOLOGY, INC.

# Lamin A/C siRNA (h): sc-35776

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*The Power to Question*

## BACKGROUND

A unique family of cysteine proteases has been described that differs in sequence, structure and substrate specificity from any previously described protease family. This family, termed Ced-3/ICE, is comprised of ICE, CPP32, ICH-1/Nedd-2, Tx, Mch2, Mch3 (ICE-LAP3 or CMH-1), Mch4 and ICE-LAP6. CED-3/ICE family members function as key components of the apoptotic machinery and act to destroy specific target proteins which are critical to cellular longevity. Nuclear lamins are critical to maintaining the integrity of the nuclear envelope and cellular morphology. The nuclear Lamin A is cleaved by Mch2, but not CPP32. Nuclear Lamin B is fragmented as a consequence of apoptosis by an unidentified member of the ICE family. Lamin C is a splice variant of Lamin A, differing only at the carboxy-terminus. Lamins A and C are identical for the first 566 amino acids, with Lamin C differing only in six unique carboxy-terminal amino acids.

## CHROMOSOMAL LOCATION

Genetic locus: LMNA (human) mapping to 1q22.

## PRODUCT

Lamin A/C siRNA (h) is a target-specific 19-25 nt siRNA 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 Lamin A/C shRNA Plasmid (h): sc-35776-SH and Lamin A/C shRNA (h) Lentiviral Particles: sc-35776-V as alternate gene silencing 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

Lamin A/C siRNA (h) is recommended for the inhibition of Lamin A/C 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.

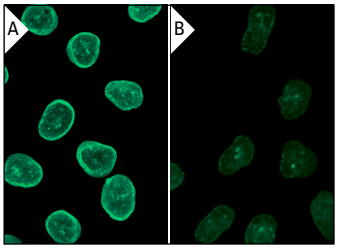
## GENE EXPRESSION MONITORING

Lamin A/C (E-1): sc-376248 is recommended as a control antibody for monitoring of Lamin A/C 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).

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Lamin A/C gene expression knockdown using RT-PCR Primer: Lamin A/C (h)-PR: sc-35776-PR (20 µl, 383 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## DATA




Lamin A/C siRNA (h): sc-35776. Immunofluorescence staining of methanol-fixed, control HeLa (**A**) and Lamin A/C siRNA silenced HeLa (**B**) cells showing diminished nuclear envelope staining in the siRNA silenced cells. Cells probed with Lamin A/C (636): sc-7292.

## SELECT PRODUCT CITATIONS


1. Desigaux, L., et al. 2007. Self-assembled lamellar complexes of siRNA with lipidic aminoglycoside derivatives promote efficient siRNA delivery and interference. Proc. Natl. Acad. Sci. USA 104: 16534-16539.
2. Lattanzi, G., et al 2014. Lamins are rapamycin targets that impact human longevity: a study in centenarians. J. Cell Sci. 127: 147-157.
3. Bermeo, S., et al. 2015. Lamin A/C acts as an essential factor in mesenchymal stem cell differentiation through the regulation of the dynamics of the Wnt/β-catenin pathway. J. Cell. Biochem. 116: 2344-2353.
4. Habrant, D., et al. 2016. Design of Ionizable lipids to overcome the limiting step of endosomal escape: application in the intracellular delivery of mRNA, DNA, and siRNA. J. Med. Chem. 59: 3046-3062.
5. Colombani, T., et al. 2017. Self-assembling complexes between binary mixtures of lipids with different linkers and nucleic acids promote universal mRNA, DNA and siRNA delivery. J. Control. Release 249: 131-142.
6. Thanomkitti, K., et al. 2018. Molecular functional analyses revealed essential roles of Hsp90 and Lamin A/C in growth, migration, and self-aggregation of dermal papilla cells. Cell Death Discov. 4: 53.


## RESEARCH USE

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