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# C1INH shRNA (h) Lentiviral Particles: sc-45608-V

## BACKGROUND

The serine proteinase inhibitors (serpins) comprise a superfamily of proteins with a diverse set of functions, including the control of complement activation, blood coagulation, programmed cell death and cell development. Serpins are secreted glycoproteins that contain a stretch of peptide that mimics a true substrate for a corresponding serine protease. The most abundant serpins in human plasma are  $\alpha$ -1-antitrypsin (AAT) and  $\alpha$ -1-antichymotrypsin (AACT). Other serpin family members include pigment epithelium-derived growth factor (PEDF), human protease nexin 1 (PN-1), protease inhibitor 6 (PI-6), thyroxine-binding globulin precursor (TBG), protease inhibitor 9 (PI-9), serine protease inhibitor 3 (Spi3), plasma protease C1 inhibitor (C1INH), Headpin, SerpinB12, monocyte/neutrophil elastase inhibitor members 1a,1b and 1c (M/NEI) and squamous cell carcinoma antigens 1 and 2 (SCCA1/2). Antithrombin-III (ATIII) is a crucial serine protease inhibitor that regulates the coagulation cascade in blood and inhibits Thrombin.

## REFERENCES

1. Curd, J.G., et al. 1981. Purification and characterization of two functionally distinct forms of C1 inhibitor from a patient with angioedema. *Clin. Exp. Immunol.* 145: 261-270.
2. Pixley, R.A., et al. 1985. The regulation of human factor XIIa by plasma proteinase inhibitors. *J. Biol. Chem.* 260: 1723-1729.
3. Gronski, P., et al. 1986. The functional inhibition of activated C1 inhibitor in normal human serum causes spontaneous consumption of the complement components C2, C3, C4, and factor B. *Immunobiology* 171: 252-262
4. Reboul, A., et al. 1987. Proteolysis and deglycosylation of human C1 inhibitor. Effect on functional properties. *Biochem. J.* 244: 117-121.

## CHROMOSOMAL LOCATION

Genetic locus: SERPING1 (human) mapping to 11q12.1.

## PRODUCT

C1INH shRNA (h) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200  $\mu$ l frozen stock containing  $1.0 \times 10^6$  infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see C1INH siRNA (h): sc-45608 and C1INH shRNA Plasmid (h): sc-45608-SH as alternate gene silencing products.

## RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.

## APPLICATIONS

C1INH shRNA (h) Lentiviral Particles is recommended for the inhibition of C1INH expression in human cells.

## SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200  $\mu$ l frozen viral stock containing  $1.0 \times 10^6$  infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

## GENE EXPRESSION MONITORING

C1INH (K-16): sc-46298 is recommended as a control antibody for monitoring of C1INH 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 (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz<sup>™</sup> Mounting Medium: sc-24941.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor C1INH gene expression knockdown using RT-PCR Primer: C1INH (h)-PR: sc-45608-PR (20  $\mu$ l, 598 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

## STORAGE

Store lentiviral particles at -80° C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at 4° C for up to one week. Avoid repeated freeze thaw cycles.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.