

C1INH siRNA (h): sc-45608

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 α -1-antitrypsin (AAT) and α -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.
5. Roeise, O., et al. 1989. Methylprednisolone affects inhibitors of the complement and the contact systems; functional and immunochemical studies on α -2-Macroglobulin and C1 inhibitor. *Thromb. Res.* 56: 697-708.
6. Wuillemin, W.A., et al. 1995. Inactivation of factor XIa in human plasma assessed by measuring factor XIa-protease inhibitor complexes: major role for C1 inhibitor. *Blood* 85: 1517-1526.
7. Liu, D., et al. 2004. N-linked glycosylation is required for C1 inhibitor-mediated protection from endotoxin shock in mice. *Infect. Immun.* 72: 1946-1955.

CHROMOSOMAL LOCATION

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

PRODUCT

C1INH 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see C1INH shRNA Plasmid (h): sc-45608-SH and C1INH shRNA (h) Lentiviral Particles: sc-45608-V as alternate gene silencing products.

For independent verification of C1INH (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-45608A, sc-45608B and sc-45608C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

C1INH siRNA (h) is recommended for the inhibition of C1INH 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 μ M in 66 μ l. 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

C1INH (B-11): sc-377062 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 reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 C1INH gene expression knockdown using RT-PCR Primer: C1INH (h)-PR: sc-45608-PR (20 μ l, 598 bp). 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.