SANTA CRUZ BIOTECHNOLOGY, INC.

SerpinA6 siRNA (h): sc-76474

BACKGROUND

The serine proteinase inhibitors (serpins) comprise a superfamily of proteins with a diverse set of functions, including the control of blood coagulation, complement activation, programmed cell death and tissue development. SerpinA6, also known as CBG or Transcortin, is a 405 amino acid α-globulin secreted protein that belongs to the serpin family. Synthesized in the liver and present in glycocorticoid responsive cells, SerpinA6 functions as the primary transport protein for progestins and glucorticoids within the blood. Additionally, SerpinA6 has corticosteroid-binding properties through which it can regulate the physiological binding of serum cortisol within the cell. Defects in the gene encoding SerpinA6 are the cause of corticosteroid-binding globulin deficiency (CBG deficiency), a rare disorder characterized by reduced corticosteroid-binding rates that result in hypo/hypertension and muscle fatigue.

REFERENCES

1. Smith, C.L., et al. 1992. A Leu—His substitution at residue 93 in human corticosteroid binding globulin results in reduced affinity for cortisol. J. Steroid Biochem. Mol. Biol. 42: 671-676.
2. Van Baelen, H., et al. 1993. Decreased cortisol-binding affinity of transcortin Leuven is associated with an amino acid substitution at residue-93. Steroids 58: 275-277.
3. Emptoz-Bonneton, A., et al. 2000. Novel human corticosteroid-binding globulin variant with low cortisol-binding affinity. J. Clin. Endocrinol. Metab. 85: 361-367.
4. Barat, P., et al. 2005. Corticosteroid binding globulin gene polymorphism influences cortisol driven fat distribution in obese women. Obes. Res. 13: 1485-1490.
5. Torpy, D.J., et al. 2007. Corticosteroid-binding globulin gene polymorphisms: clinical implications and links to idiopathic chronic fatigue disorders. Clin. Endocrinol. 67: 161-167.
6. Seixas, S., et al. 2007. Sequence diversity at the proximal 14q32.1 SERPIN subcluster: evidence for natural selection favoring the pseudogenization of SerpinA2. Mol. Biol. Evol. 24: 587-598.

CHROMOSOMAL LOCATION

Genetic locus: SERPINA6 (human) mapping to 14q32.13.

PRODUCT

SerpinA6 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 SerpinA6 shRNA Plasmid (h): sc-76474-SH and SerpinA6 shRNA (h) Lentiviral Particles: sc-76474-V as alternate gene silencing products.

For independent verification of SerpinA6 (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-76474A, sc-76474B and sc-76474C.

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

SerpinA6 siRNA (h) is recommended for the inhibition of SerpinA6 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

SerpinA6 (Y19-E): sc-100851 is recommended as a control antibody for monitoring of SerpinA6 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 SerpinA6 gene expression knockdown using RT-PCR Primer: SerpinA6 (h)-PR: sc-76474-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.