SANTA CRUZ BIOTECHNOLOGY, INC.

SerpinA9 siRNA (h): sc-92169

BACKGROUND

SerpinA9 (serpin peptidase inhibitor, clade A (α-1 antiproteinase, antitrypsin), member 9) is a 417 amino acid protein that belongs to the serpin family. A protease inhibitor that inhibits trypsin and trypsin-like serine proteases *(in vitro),* SerpinA9 inhibits plasmin and thrombin with lower efficiency *(in vitro).* The SerpinA9 protein is highly expressed in normal germinal center (GC) B-cells and GC B-cell-derived malignancies. In humans, SerpinA9 is part of a gene cluster, which spans over 370 kb on chromosome 14q32.13 and includes ten additional members of the Serpin superfamily. All Serpin genes have a significant sequence similarity and most share a common gene structure with one untranslated exon and four coding exons. Accordingly, it has been proposed that members of the Serpin superfamily evolved from a common ancestral gene through a series of duplication events. Existing as seven alternatively spliced isoforms, the SerpinA9 gene is conserved in chimpanzee, canine, mouse, rat and zebrafish, and maps to human chromosome 14q32.13.

REFERENCES

1. Rollini, P., et al. 1999. Long-range chromatin reorganization of the human serpin gene cluster at 14q32.1 accompanies gene activation and extinction in microcell hybrids. Genomics 56: 22-30.
2. Rollini, P., et al. 2000. Differential regulation of gene activity and chromatin structure within the human serpin gene cluster at 14q32.1 in macrophage microcell hybrids. Nucleic Acids Res. 28: 1767-1777.
3. Namciu, S.J., et al. 2004. Sequence organization and matrix attachment regions of the human serine protease inhibitor gene cluster at 14q32.1. Mamm. Genome 15: 162-178.
4. Marsden, M.D., et al. 2005. Organization and expression of the human serpin gene cluster at 14q32.1. Front. Biosci. 10: 1768-1778.
5. 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.
6. Silverman, G.A., et al. 2010. Serpins flex their muscle: I. Putting the clamps on proteolysis in diverse biological systems. J. Biol. Chem. 285: 24299-24305.

CHROMOSOMAL LOCATION

Genetic locus: SERPINA9 (human) mapping to 14q32.13.

PRODUCT

SerpinA9 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 SerpinA9 shRNA Plasmid (h): sc-92169-SH and SerpinA9 shRNA (h) Lentiviral Particles: sc-92169-V as alternate gene silencing products.

For independent verification of SerpinA9 (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-92169A, sc-92169B and sc-92169C.

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

SerpinA9 siRNA (h) is recommended for the inhibition of SerpinA9 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

SerpinA9 (913G2V): sc-517654 is recommended as a control antibody for monitoring of SerpinA9 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 SerpinA9 gene expression knockdown using RT-PCR Primer: SerpinA9 (h)-PR: sc-92169-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.