

SerpinA11 siRNA (m): sc-153350

BACKGROUND

SerpinA11 (serpin peptidase inhibitor, clade A (α -1 antitrypsin, antitrypsin), member 11) is a 422 amino acid secreted protein that belongs to the serpin family. In humans, SerpinA11 is part of a gene cluster, which spans over 370 kb on chromosome 14q32.1 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. The SerpinA11 protein exhibits a restricted expression pattern typical of many serpins: very high expression in normal liver, with more than 30-fold less expression in normal breast, prostate BPH (benign prostate hyperplasia) and breast tumor. The SerpinA11 gene is conserved in chimpanzee, dog, cow, mouse and rat, and maps to human chromosome 14q32.13.

REFERENCES

1. Rollini, P. and Fournier, R.E. 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. and Fournier, R.E. 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., Friedman, R.D., Marsden, M.D., Sarausad, L.M., Jasoni, C.L. and Fournier, R.E. 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. and Fournier, R.E. 2005. Organization and expression of the human serpin gene cluster at 14q32.1. *Front. Biosci.* 10: 1768-1778.
5. Badola, S., Spurling, H., Robison, K., Fedyk, E.R., Silverman, G.A., Strayle, J., Kapeller, R. and Tsu, C.A. 2006. Correlation of serpin-protease expression by comparative analysis of real-time PCR profiling data. *Genomics* 88: 173-184.
6. Seixas, S., Suriano, G., Carvalho, F., Seruca, R., Rocha, J. and Di Rienzo, A. 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.
7. Pelissier, P., Delourme, D., Germot, A., Blanchet, X., Becila, S., Maftah, A., Leveziel, H., Ouali, A. and Bremaud, L. 2008. An original SERPINA3 gene cluster: elucidation of genomic organization and gene expression in the *Bos taurus* 21q24 region. *BMC Genomics* 9: 151.
8. Silverman, G.A., Whisstock, J.C., Bottomley, S.P., Huntington, J.A., Kaiserman, D., Luke, C.J., Pak, S.C., Reichhart, J.M. and Bird, P.I. 2010. Serpins flex their muscle: I. Putting the clamps on proteolysis in diverse biological systems. *J. Biol. Chem.* 285: 24299-24305.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CHROMOSOMAL LOCATION

Genetic locus: Serpina11 (mouse) mapping to 12 E.

PRODUCT

SerpinA11 siRNA (m) is a pool of 2 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 SerpinA11 shRNA Plasmid (m): sc-153350-SH and SerpinA11 shRNA (m) Lentiviral Particles: sc-153350-V as alternate gene silencing products.

For independent verification of SerpinA11 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-153350A and sc-153350B.

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

SerpinA11 siRNA (m) is recommended for the inhibition of SerpinA11 expression in mouse 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SerpinA11 gene expression knockdown using RT-PCR Primer: SerpinA11 (m)-PR: sc-153350-PR (20 μ l). 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.