

# kallistatin siRNA (h): sc-75362

## BACKGROUND

Kallistatin, also known as serpin A4, Kallikrein inhibitor and protease inhibitor 4 (PI4), is a member of the serpin family and was first identified as a kallikrein-binding protein. It is expressed in vascular smooth muscle cells and endothelial cells. Kallistatin functions as a serine proteinase inhibitor and a heparin-binding protein and is involved in blood pressure regulation, vasculature relaxation, protection against inflammation and stimulation of neointima hyperplasia. It also acts as a negative regulator of angiogenesis by blocking the cellular response to VEGF and  $\beta$ FGF heparin binding proteins (two major angiogenic stimulators). Kallistatin may compete with VEGF and  $\beta$ FGF binding to heparin-sulfate proteoglycans via its heparin binding domain. In addition, its anti-angiogenesis and anti-inflammatory activity may play an important role in the inhibition of tumor growth and arthritis.

## REFERENCES

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4. Thongboonkerd, V. and Malasit, P. 2005. Renal and urinary proteomics: current applications and challenges. *Proteomics* 5: 1033-1042.
5. Devani, M., et al. 2005. Kallikrein-kinin system in inflammatory bowel diseases: intestinal involvement and correlation with the degree of tissue inflammation. *Dig. Liver Dis.* 37: 665-673.
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## CHROMOSOMAL LOCATION

Genetic locus: SERPINA4 (human) mapping to 14q32.13.

## PRODUCT

kallistatin 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see kallistatin shRNA Plasmid (h): sc-75362-SH and kallistatin shRNA (h) Lentiviral Particles: sc-75362-V as alternate gene silencing products.

For independent verification of kallistatin (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-75362A, sc-75362B and sc-75362C.

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

## APPLICATIONS

kallistatin siRNA (h) is recommended for the inhibition of kallistatin 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  $\mu$ M in 66  $\mu$ 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 kallistatin gene expression knockdown using RT-PCR Primer: kallistatin (h)-PR: sc-75362-PR (20  $\mu$ 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.

## PROTOCOLS

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