

# kallistatin (Q-19): sc-79628

## BACKGROUND

Kallistatin, also known as serpin A4, Kallikrein inhibitor and protease inhibitor 4 (PI 4), 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 bFGF heparin binding proteins (two major angiogenic stimulators). Kallistatin may compete with VEGF and bFGF 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

- Zhou, G.X., et al. 1993. Kallistatin: a novel human tissue kallikrein inhibitor. Purification, characterization and reactive center sequence. *J. Biol. Chem.* 267: 25873-25880.
- Chao, J., et al. 1997. Tissue kallikrein inhibitors in mammals. *Immunopharmacology* 32: 67-72.
- Miao, R.Q., et al. 2002. Kallistatin is a new inhibitor of angiogenesis and tumor growth. *Blood* 100: 3245-3252.
- Thongboonkerd, V. and Malasit, P. 2005. Renal and urinary proteomics: current applications and challenges. *Proteomics* 5: 1033-1042.
- 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.
- Wang, C.R., et al. 2005. Prophylactic adenovirus-mediated human kallistatin gene therapy suppresses rat arthritis by inhibiting angiogenesis and inflammation. *Arthritis Rheum.* 52: 1319-1324.
- Luo, L.Y. and Jiang, W. 2006. Inhibition profiles of human tissue kallikreins by serine protease inhibitors. *Biol. Chem.* 387: 813-816.

## CHROMOSOMAL LOCATION

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

## SOURCE

kallistatin (Q-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of kallistatin of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-79628 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## APPLICATIONS

kallistatin (Q-19) is recommended for detection of kallistatin of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for kallistatin siRNA (h): sc-75362, kallistatin shRNA Plasmid (h): sc-75362-SH and kallistatin shRNA (h) Lentiviral Particles: sc-75362-V.

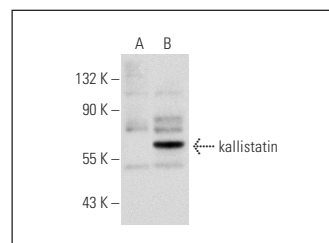
Molecular Weight of kallistatin: 58 kDa.

Positive Controls: kallistatin (h): 293T Lysate: sc-170067.

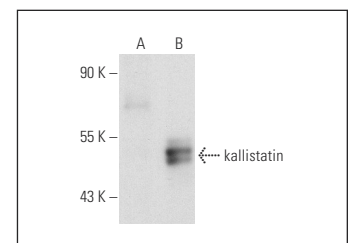
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



kallistatin (Q-19): sc-79628. Western blot analysis of kallistatin expression in non-transfected: sc-117752 (A) and human kallistatin transfected: sc-170067 (B) 293T whole cell lysates.



kallistatin (Q-19): sc-79628. Western blot analysis of kallistatin expression in non-transfected: sc-110760 (A) and human kallistatin transfected: sc-158652 (B) 293 whole cell lysates.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PROTOCOLS

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