# kallistatin (h): 293 Lysate: sc-158652



The Power to Question

#### **BACKGROUND**

Kallistatin, also known as serpin A4, kallikrein inhibitor and protease inhibitor 4 (Pl4), 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.
- 3. Miao, R.Q., et al. 2002. Kallistatin is a new inhibitor of angiogenesis and tumor growth. Blood 100: 3245-3252.
- 4. 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.
- 7. Luo, L.Y. and Jiang, W. 2006. Inhibition profiles of human tissue kallikreins by serine protease inhibitors. Biol. Chem. 387: 813-816.
- 8. Chao, J., et al. 2007. Novel role of kallistatin in protection against myocardial ischemia-reperfusion injury by preventing apoptosis and inflammation. Hum. Gene Ther. 17: 1201-1213.
- Luo, Q., et al. 2007. Altered protein expression at early-stage rat hepatic neoplasia. Am. J. Physiol. Gastrointest. Liver Physiol. 292: G1272-G1282.

## **CHROMOSOMAL LOCATION**

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

## **PRODUCT**

kallistatin (h): 293 Lysate represents a lysate of human kallistatin transfected 293 cells and is provided as 100  $\mu$ g protein in 200  $\mu$ l SDS-PAGE buffer.

#### **STORAGE**

Store at -20 $^{\circ}$  C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

#### **APPLICATIONS**

kallistatin (h): 293 Lysate is suitable as a Western Blotting positive control for human reactive kallistatin antibodies. Recommended use: 10-20  $\mu$ l per lane

Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

## **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.

Santa Cruz Biotechnology, Inc. 1.800.457.3801 831.457.3801 fax 831.457.3801 Europe +00800 4573 8000 49 6221 4503 0 www.scbt.com