

PI-9 (C-14): sc-19980

BACKGROUND

Serine proteinase inhibitors (serpins) function as regulators of serine proteinase activity in a variety of physiological processes. Proteinase inhibitor-9 (PI-9, also designated cytoplasmic antiproteinase 3, or CAP3) is a member of the Ovalbumin family of serpins that is expressed in placenta, lung and cytotoxic lymphocytes. PI-9 is a potent inhibitor of granzyme B and of granzyme B-mediated apoptosis, and is also an inhibitor of caspase-1 and, to a lesser extent, caspase-4 and caspase-8. Because granzyme B promotes DNA degradation and rapidly translocates to the nucleus to bind to a nuclear component, PI-9 is present in the nuclei of human cytotoxic cells, endothelial cells and epithelial cells. PI-9 is exported from nuclei via a leptomycin B-sensitive pathway, suggesting that the nucleocytoplasmic distribution of PI-9 involves a non-conventional nuclear import pathway and the export factor CRM1. Estrogen rapidly and strongly induces PI-9, which is an estrogen-regulated human gene. PI-9 expression is also upregulated in response to inflammatory stimuli. This upregulation protects cells from apoptosis induced by endogenously expressed or released granzyme B, particularly during target cell killing. In addition, PI-9 is expressed in a variety of human and murine tumors.

REFERENCES

1. Dahlen, J.R., et al. 1997. Human proteinase inhibitor-9 (PI-9) is a potent inhibitor of subtilisin A. *Biochem. Biophys. Res. Commun.* 238: 329-333.
2. Sun, J., et al. 1997. A new family of 10 murine Ovalbumin serpins includes two homologs of proteinase inhibitor-8 and two homologs of the granzyme B inhibitor (proteinase inhibitor-9). *J. Biol. Chem.* 272: 15434-15441.
3. Sun, J., et al. 1998. A serpin gene cluster on human chromosome 6p25 contains PI-6, PI-9 and ELANH₂ which have a common structure almost identical to the 18q21 Ovalbumin serpin genes. *Cytogenet. Cell Genet.* 82: 273-277.
4. Dahlen, J.R., et al. 1999. Inhibition of neutrophil elastase by recombinant human proteinase inhibitor-9. *Biochem. Biophys. Acta* 1451: 233-241.
5. Annand, R.R., et al. 1999. Caspase-1 (interleukin-1 β -converting enzyme) is inhibited by the human serpin analogue proteinase inhibitor-9. *Biochem. J.* 342: 655-665.

CHROMOSOMAL LOCATION

Genetic locus: SERPINB9 (human) mapping to 6p25.2.

SOURCE

PI-9 (C-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PI-9 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-19980 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

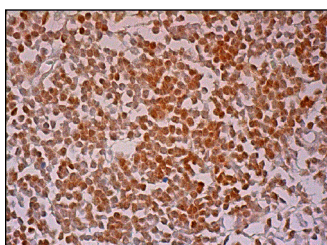
PI-9 (C-14) is recommended for detection of PI-9 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution 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 PI-9 siRNA (h): sc-40949, PI-9 shRNA Plasmid (h): sc-40949-SH and PI-9 shRNA (h) Lentiviral Particles: sc-40949-V.

Molecular Weight of PI-9: 42 kDa.

Positive Controls: Raji whole cell lysate: sc-364236, Ramos cell lysate: sc-2216 or K-562 whole cell lysate: sc-2203.

DATA



PI-9 (C-14): sc-19980. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing nuclear staining of cells in germinal center and cells in non-germinal center.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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


 MONOS
 Satisfaction
 Guaranteed

Try **PI-9 (C-10): sc-390406** or **PI-9 (PI9-17): sc-57531**, our highly recommended monoclonal alternatives to PI-9 (C-14).