

PI-9 (H-300): sc-366113

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

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- Sun, J., et al. 1998. A serpin gene cluster on human chromosome 6p25 contains PI6, PI9 and dELANH₂ which have a common structure almost identical to the 18q21 ovalbumin serpin genes. *Cytogenet. Cell Genet.* 82: 273-277.
- Dahlen, J.R., et al. 1999. Inhibition of neutrophil elastase by recombinant human proteinase inhibitor 9. *Biochem. Biophys. Acta* 1451: 233-241.
- Anand, 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.
- Kanamori, H., et al. 2000. Proteinase inhibitor 9, an inhibitor of granzyme B-mediated apoptosis, is a primary estrogen-inducible gene in human liver cells. *J. Biol. Chem.* 275: 5867-5873.

CHROMOSOMAL LOCATION

Genetic locus: SERPINB9 (human) mapping to 6p25.2; Serpinb9 (mouse) mapping to 13 A3.3.

SOURCE

PI-9 (H-300) is a rabbit polyclonal antibody raised against amino acids 1-300 mapping at the N-terminus 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.

APPLICATIONS

PI-9 (H-300) is recommended for detection of PI-9 of human and, to a lesser extent, mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

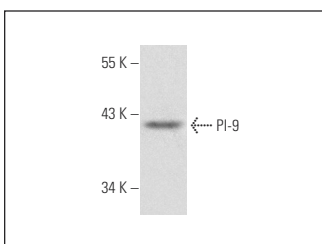
Suitable for use as control antibody for PI-9 siRNA (h): sc-40949, PI-9 siRNA (m): sc-152245, PI-9 shRNA Plasmid (h): sc-40949-SH, PI-9 shRNA Plasmid (m): sc-152245-SH, PI-9 shRNA (h) Lentiviral Particles: sc-40949-V and PI-9 shRNA (m) Lentiviral Particles: sc-152245-V.

Molecular Weight of PI-9: 42 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



PI-9 (H-300): sc-366113. Western blot analysis of PI-9 expression in RAW 264.7 whole cell lysate.

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.

MONOS
Satisfaction
Guaranteed

Try **PI-9 (C-10): sc-390406** or **PI-9 (F-6): sc-390501**, our highly recommended monoclonal alternatives to PI-9 (H-300).