

PI-9 (F-6): sc-390501

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

- Dahlen, J.R., et al. 1997. Human proteinase inhibitor 9 (PI9) is a potent inhibitor of subtilisin A. *Biochem. Biophys. Res. Commun.* 238: 329-333.
- 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.
- Sun, J., et al. 1998. A serpin gene cluster on human chromosome 6p25 contains PI6, PI9 an ELANH₂ 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.

CHROMOSOMAL LOCATION

Genetic locus: Serpinb9 (mouse) mapping to 13 A3.3.

SOURCE

PI-9 (F-6) is a mouse monoclonal antibody raised against amino acids 77-320 mapping within an internal region of PI-9 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PI-9 (F-6) is available conjugated to agarose (sc-390501 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390501 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390501 PE), fluorescein (sc-390501 FITC), Alexa Fluor® 488 (sc-390501 AF488), Alexa Fluor® 546 (sc-390501 AF546), Alexa Fluor® 594 (sc-390501 AF594) or Alexa Fluor® 647 (sc-390501 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390501 AF680) or Alexa Fluor® 790 (sc-390501 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PI-9 (F-6) is recommended for detection of PI-9 of mouse origin by Western Blotting (starting dilution 1:100, 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 PI-9 siRNA (m): sc-152245, PI-9 shRNA Plasmid (m): sc-152245-SH and PI-9 shRNA (m) Lentiviral Particles: sc-152245-V.

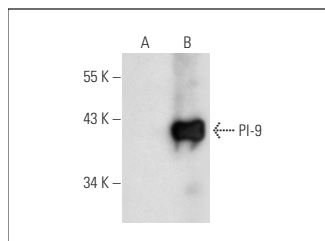
Molecular Weight of PI-9: 42 kDa.

Positive Controls: PI-9 (m): 293T Lysate: sc-122560.

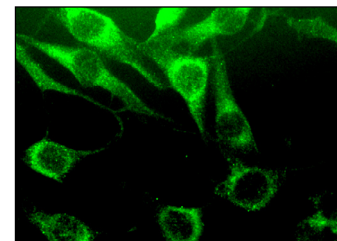
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



PI-9 (F-6): sc-390501. Western blot analysis of PI-9 expression in non-transfected: sc-117752 (A) and mouse PI-9 transfected: sc-122560 (B) 293T whole cell lysates.



PI-9 (F-6): sc-390501. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization.

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 for detailed protocols and support products.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA