

PI-9 (PI9-17): sc-57531

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 nonconventional 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.

CHROMOSOMAL LOCATION

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

SOURCE

PI-9 (PI9-17) is a mouse monoclonal antibody raised against recombinant full length PI-9 of human origin.

PRODUCT

Each vial contains 500 µl culture supernatant containing IgG₁ with < 0.1% sodium azide and 0.7% stabilizer protein.

APPLICATIONS

PI-9 (PI9-17) is recommended for detection of PI-9 of mouse, rat and human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:10-1:200), immunoprecipitation [10-20 µl per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution to be determined by researcher, dilution range 1:10-1:200), immunohistochemistry (including paraffin-embedded sections) (starting dilution to be determined by researcher, dilution range 1:10-1:200) and solid phase ELISA (starting dilution to be determined by researcher, dilution range 1:10-1:200); non cross-reactive with PI-6, PI-8 or PAI-2.

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.

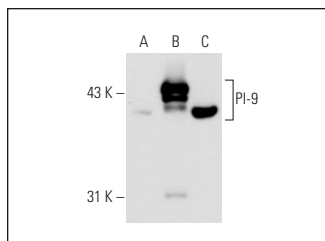
Molecular Weight of PI-9: 42 kDa.

Positive Controls: PI-9 (m): 293T Lysate: sc-122560, PI-9 (h3): 293T Lysate: sc-158850 or Raji whole cell lysate: sc-364236.

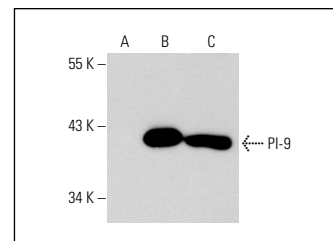
STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

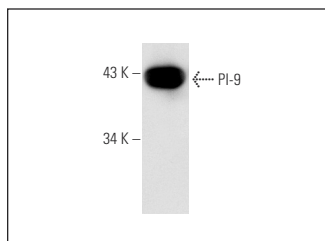
DATA



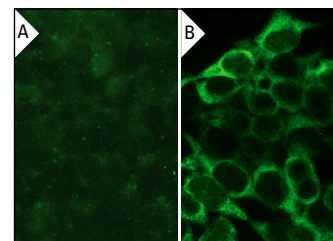
PI-9 (PI9-17): sc-57531. Western blot analysis of PI-9 expression in non-transfected 293T: sc-117752 (A), human PI-9 transfected 293T: sc-158850 (B) and Raji (C) whole cell lysates.



PI-9 (PI9-17): sc-57531. Western blot analysis of PI-9 expression in non-transfected 293T: sc-117752 (A), mouse PI-9 transfected 293T: sc-122560 (B) and Ramos (C) whole cell lysates.



PI-9 (PI9-17): sc-57531. Western blot analysis of PI-9 expression in K-562 whole cell lysate.



PI-9 (PI9-17): sc-57531. Immunofluorescence staining of methanol-fixed untransfected (A) and human PI-9 transfected HEK 293T cells (B).

SELECT PRODUCT CITATIONS

1. Rousalova, I., et al. 2010. Expression of proteinase inhibitor-9/serpinB9 in non-small cell lung carcinoma cells and tissues. *Int. J. Oncol.* 36: 275-283.
2. Munguía-Moreno, J.A., et al. 2018. Early synergistic interactions between the HPV16-E7 oncoprotein and 17β-oestradiol for repressing the expression of granzyme B in a cervical cancer model. *Int. J. Oncol.* 53: 579-591.
3. Jiang, P., et al. 2018. Signatures of T cell dysfunction and exclusion predict cancer immunotherapy response. *Nat. Med.* 24: 1550-1558.

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.