**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.

**REFERENCES**


**CHROMOSOMAL LOCATION**

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

**SOURCE**

PI-9 (7D8) is a mouse monoclonal antibody raised against recombinant PI-9 of human origin.

**PRODUCT**

Each vial contains 100 µg IgG1 in 1.0 ml of PBS with <0.1% sodium azide and 0.1% gelatin.

**APPLICATIONS**

PI-9 (7D8) is recommended for detection of PI-9 of human origin by Western Blotting (starting dilution 1:200, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells); non cross-reactive with mouse or porcine.


Positive Controls: PI-9 (h3): 293T Lysate: sc-158850, Ramos cell lysate: sc-2216 or Raji whole cell lysate: sc-364236.

**STORAGE**

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

**DATA**

PI-9 (7D8): sc-59983. Western blot analysis of PI-9 expression in Raji (A), Ramos (B) and GA-10 (C) whole cell lysates.

PI-9 (7D8): sc-59983. Immunofluorescence staining of methanol-fixed untransfected (A) and human PI-9 transfected HEK293T cells (B).

PI-9 (7D8): sc-59983. Western blot analysis of PI-9 expression in non-transfected: sc-117752 (A) and human PI-9 transfected: sc-158850 (B) 293T whole cell lysates.

**SELECT PRODUCT CITATIONS**


**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.