SANTA CRUZ BIOTECHNOLOGY, INC.

PN-1 (4B3): sc-81717

BACKGROUND

The serine protease inhibitors (serpins) compose a superfamily of proteins with a diverse set of functions, including the control of blood coagulation, complement activation, programmed cell death and development. Serpins are secreted glycoproteins that contain a stretch of peptide that mimics a true substrate for a corresponding serine protease. Protease nexin-1 (PN-1) is a serpin that inactivates several proteases, including thrombin, urokinase, plasminogen activators (PA) and plasmin. It is involved in tissue remodeling, cellular invasiveness, matrix degradation and tumor growth. PN-1 expression is abundant in the nervous system, where it inhibits thrombin, thereby playing a role in neural injury and repair processes. An imbalance between PN-1 and thrombin may be a contributing factor in the pathology of Alzheimer's disease.

REFERENCES

1. Mulligan, L.P., et al. 1991. Protease nexin-1 activity in cultured Schwann cells. Neurosci. Lett. 128: 42-46.
2. Vaughan, P.J., et al. 1994. Protease nexin-1, a potent thrombin inhibitor, is reduced around cerebral blood vessels in Alzheimer's disease. Brain Res. 668: 160-170.
3. Smith-Swintosky, V.L., et al. 1995. Protease nexin-1 and thrombin modulate neuronal Ca^{2+} homeostasis and sensitivity to glucose deprivation-induced injury. J. Neurosci. 15: 5840-5850.

CHROMOSOMAL LOCATION

Genetic locus: Serpine2 (mouse) mapping to 1 C4.

SOURCE

PN-1 (4B3) is a mouse monoclonal antibody raised against purified recombinant PN-1 of rat origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PN-1 (4B3) is recommended for detection of PN-1 of mouse and rat 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for PN-1 siRNA (m): sc-45255, PN-1 shRNA Plasmid (m): sc-45255-SH and PN-1 shRNA (m) Lentiviral Particles: sc-45255-V.

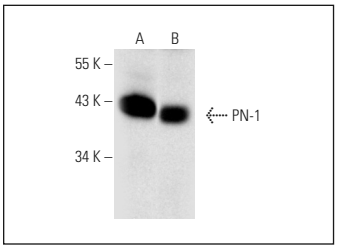
Molecular Weight of PN-1: 44 kDa.

Positive Controls: rat brain extract: sc-2392, PN-1 (m): 293T Lysate: sc-122667 or C6 whole cell lysate: sc-364373.

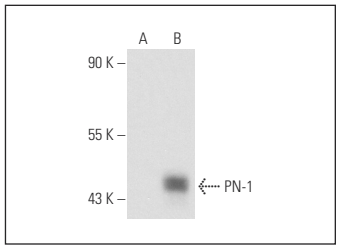
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



PN-1 (4B3): sc-81717. Western blot analysis of PN-1 expression in C6 whole cell lysate (**A**) and rat brain tissue extract (**B**).



PN-1 (4B3): sc-81717. Western blot analysis of PN-1 expression in non-transfected: sc-117752 (**A**) and mouse PN-1 transfected: sc-122667 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Wilson, R., et al. 2010. Comprehensive profiling of cartilage extracellular matrix formation and maturation using sequential extraction and label-free quantitative proteomics. Mol. Cell. Proteomics 9: 1296-1313.
2. Selbonne, S., et al. 2015. Protease nexin-1 regulates retinal vascular development. Cell. Mol. Life Sci. 72: 3999-4011.
3. Selbonne, S., et al. 2021. Protease nexin-1 deficiency increases mouse hindlimb neovascularisation following ischemia and accelerates femoral artery perfusion. Sci. Rep. 11: 13412.

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.