SANTA CRUZ BIOTECHNOLOGY, INC.

PTN (H-6): sc-74443



BACKGROUND

Pleiotrophin (PTN) and midkine (MK) comprise a family of structurally related, developmentally regulated genes. Human PTN is synthesized as a 168 amino acid protein. Human PTN is subsequently cleaved to generate a 136 amino acid protein. Human PTN is approximately 50% identical to human MK, with conservation of all ten cysteines. Cells reported to express PTN include osteoblasts, chondrocytes, fibroblasts, astrocytes, oligodendroglia, Schwann cells, neurons, pituicytes and Leydig cells. PTN is a heparin-binding growth factor that functions as a weak mitogen and promotes neurite-outgrowth from embry-onic brain neurons. PTN is expressed at high levels in many tissues during fetal development, but becomes restricted to the brain in adult animals.

CHROMOSOMAL LOCATION

Genetic locus: PTN (human) mapping to 7q33; Ptn (mouse) mapping to 6 B1.

SOURCE

PTN (H-6) is a mouse monoclonal antibody raised against amino acids 94-168 of PTN of human 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.

PTN (H-6) is available conjugated to agarose (sc-74443 AC), 500 μg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74443 HRP), 200 μg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74443 PE), fluorescein (sc-74443 FITC), Alexa Fluor[®] 488 (sc-74443 AF488), Alexa Fluor[®] 546 (sc-74443 AF546), Alexa Fluor[®] 594 (sc-74443 AF594) or Alexa Fluor[®] 647 (sc-74443 AF647), 200 μg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-74443 AF680) or Alexa Fluor[®] 790 (sc-74443 AF790), 200 μg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

PTN (H-6) is recommended for detection of precursor and mature PTN of mouse, rat and human 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), immunohistochemistry (including paraf-fin-embedded sections) (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 PTN siRNA (h): sc-39713, PTN siRNA (m): sc-39714, PTN shRNA Plasmid (h): sc-39713-SH, PTN shRNA Plasmid (m): sc-39714-SH, PTN shRNA (h) Lentiviral Particles: sc-39713-V and PTN shRNA (m) Lentiviral Particles: sc-39714-V.

Molecular Weight (predicted) of PTN: 18 kDa.

Molecular Weight (observed) of PTN: 18-25 kDa.

Positive Controls: PTN (m): 293T Lysate: sc-122837, rat brain extract: sc-2392 or HeLa nuclear extract: sc-2120.

STORAGE

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

DATA



PTN (H-6): sc-74443. Fluorescent western blot analysis of PTN expression in non-transfected: sc-117752 (A) and mouse PTN transfected: sc-122837 (B) 2931 whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG Fc BP-CFL 555: sc-533654.



PTN (H-6): sc-74443. Immunoperoxidase staining of formalin fixed, parafin-embedded human parathyroid gland tissue showing cytoplasmic staining of glandular cells (**A**). Immunoperoxidase staining of formalin fixed, parafin-embedded human testis tissue showing membrane and cytoplasmic staining of subset of cells in seminiferous ducts (**B**).

SELECT PRODUCT CITATIONS

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- Koyama-Nasu, R., et al. 2014. The pleiotrophin-ALK axis is required for tumorigenicity of glioblastoma stem cells. Oncogene 33: 2236-2244.
- 4. Qin, E.Y., et al. 2017. Neural precursor-derived pleiotrophin mediates subventricular zone invasion by glioma. Cell 170: 845-859.
- 5. Tang, C., et al. 2018. Neural stem cells behave as a functional niche for the maturation of newborn neurons through the decretion of PTN. Neuron 101: 32-44.
- He, M., et al. 2019. miR-627-3p inhibits osteosarcoma cell proliferation and metastasis by targeting PTN. Aging 11: 5744-5756.
- 7. Praktiknjo, S.D., et al. 2020. Tracing tumorigenesis in a solid tumor model at single-cell resolution. Nat. Commun. 11: 991.
- Liu, S., et al. 2021. Discovery of PTN as a serum-based biomarker of pro-metastatic prostate cancer. Br. J. Cancer 124: 896-900.
- Liu, Z., et al. 2022. Sec13 promotes oligodendrocyte differentiation and myelin repair through autocrine pleiotrophin signaling. J. Clin. Invest. 132: e155096.
- Wu, C., et al. 2022. Ubiquitin ligase Triad1 promotes neurite outgrowth by inhibiting MDM2-mediated ubiquitination of the neuroprotective factor pleiotropin. J. Biol. Chem. 298: 102443.

RESEARCH USE

For research use only, not for use in diagnostic procedures.