

PRL-3 (318): sc-130355

BACKGROUND

Protein tyrosine phosphatases (PTPs) play a role in regulating diverse cellular processes. They form a small class of prenylated protein phosphatases called PRL proteins characterized by a C-terminal consensus sequence for prenylation. PRL-1, also designated protein tyrosine phosphatase type IVA protein 1 (PTP4A1), is a unique nuclear PTP that is induced in regenerating liver and mitogen-stimulated cells. It is primarily expressed in spleen, bone marrow, thymus, lymph nodes, T lymphocytes and tonsil, and is overexpressed in tumor cell lines. PRL-2 (protein tyrosine phosphatase type IVA protein 2, or PTP4A2) is ubiquitously expressed with highest levels in heart, skeletal muscle and thymus, but is also overexpressed in prostate tumor tissue. PRL-2 stimulates progression from G₁ into S phase during mitosis and promotes tumors. PRL-3, also known as protein tyrosine phosphatase type IVA member 3 (PTP4A3), is expressed in heart and skeletal muscle as well as epithelial cells of the small intestine and associates with the cell plasma membrane. Over-expression of PRL-3 inhibits Angiotensin-II induced cell calcium mobilization and promotes cell growth. PRL-3 is important for colorectal cancer metastasis and may serve as a new therapeutic target for this condition.

REFERENCE

- Ling, J.R. and Leach, R.M., Jr. 1979. Studies on nickel metabolism: interaction with other mineral elements. *Poult. Sci.* 58: 591-596.
- Zeng, Q., et al. 1998. Mouse PRL-2 and PRL-3, two potentially prenylated protein tyrosine phosphatases homologous to PRL-1. *Biochem. Biophys. Res. Commun.* 244: 421-427.

CHROMOSOMAL LOCATION

Genetic locus: PTP4A3 (human) mapping to 8q24.3; Ptp4a3 (mouse) mapping to 15 D3.

SOURCE

PRL-3 (318) is a mouse monoclonal antibody raised against recombinant PRL-3 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.

PRL-3 (318) is available conjugated to agarose (sc-130355 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-130355 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-130355 PE), fluorescein (sc-130355 FITC), Alexa Fluor® 488 (sc-130355 AF488), Alexa Fluor® 546 (sc-130355 AF546), Alexa Fluor® 594 (sc-130355 AF594) or Alexa Fluor® 647 (sc-130355 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-130355 AF680) or Alexa Fluor® 790 (sc-130355 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

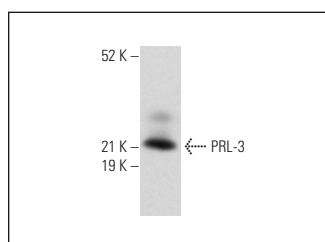
PRL-3 (318) is recommended for detection of PRL-3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with PRL-1 or PRL-2.

Suitable for use as control antibody for PRL-3 siRNA (h): sc-39156, PRL-3 siRNA (m): sc-39157, PRL-3 shRNA Plasmid (h): sc-39156-SH, PRL-3 shRNA Plasmid (m): sc-39157-SH, PRL-3 shRNA (h) Lentiviral Particles: sc-39156-V and PRL-3 shRNA (m) Lentiviral Particles: sc-39157-V.

Molecular Weight of PRL-3: 20 kDa.

Positive Controls: mouse brain extract: sc-2253.

DATA



PRL-3 (318): sc-130355. Western blot analysis of PRL-3 expression in mouse brain tissue extract.

SELECT PRODUCT CITATIONS

- Jiang, Y., et al. 2011. Phosphatase PRL-3 is a direct regulatory target of TGFβ in colon cancer metastasis. *Cancer Res.* 71: 234-244.
- Funato, Y., et al. 2014. Membrane protein CNNM4-dependent Mg²⁺ efflux suppresses tumor progression. *J. Clin. Invest.* 124: 5398-5410.
- Luján, P., et al. 2016. PRL-3 disrupts epithelial architecture by altering the post-mitotic midbody position. *J. Cell Sci.* 129: 4130-4142.
- Foy, M., et al. 2017. PRL-3/PTP4A3 phosphatase regulates integrin β1 in adhesion structures during migration of human ocular melanoma cells. *Exp. Cell Res.* 353: 88-99.
- Hjort, M.A., et al. 2018. Phosphatase of regenerating liver-3 (PRL-3) is overexpressed in classical Hodgkin lymphoma and promotes survival and migration. *Exp. Hematol. Oncol.* 7: 8.
- Duciel, L., et al. 2019. Protein tyrosine phosphatase 4A3 (PTP4A3/PRL-3) promotes the aggressiveness of human uveal melanoma through dephosphorylation of CRMP2. *Sci. Rep.* 9: 2990.

RESEARCH USE

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