SANTA CRUZ BIOTECHNOLOGY, INC.

PRL-1/2/3 (D-6): sc-271879

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 over-expressed 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. PPRL-2 is stimulates progression from G_1 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.

REFERENCES

1. Ling, J.R., et al. 1979. Studies on nickel metabolism: interaction with other mineral elements. Poult. Sci. 58: 591-596.
2. 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.
3. Zeng, Q., et al. 2000. Prenylation-dependent association of protein-tyrosine phosphatases PRL-1, -2, and -3 with the plasma membrane and the early endosome. J. Biol. Chem. 275: 21444-21452.

SOURCE

PRL-1/2/3 (D-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 121-149 near the C-terminus of PRL-1 of human 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.

PRL-1/2/3 (D-6) is available conjugated to agarose (sc-271879 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271879 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271879 PE), fluorescein (sc-271879 FITC), Alexa Fluor® 488 (sc-271879 AF488), Alexa Fluor® 546 (sc-271879 AF546), Alexa Fluor® 594 (sc-271879 AF594) or Alexa Fluor® 647 (sc-271879 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271879 AF680) or Alexa Fluor® 790 (sc-271879 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271879 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

PRL-1/2/3 (D-6) is recommended for detection of PRL-1, PRL-2 and PRL-3 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

PRL-1/2/3 (D-6) is also recommended for detection of PRL-1, PRL-2 and PRL-3 in additional species, including equine, canine, bovine, porcine and avian.

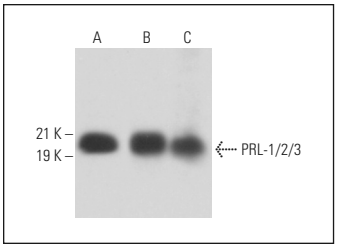
Molecular Weight of PRL-1/2/3: 20/25/40 kDa.

Positive Controls: rat brain extract: sc-2392, mouse brain extract: sc-2253 or human platelet extract: sc-363773.

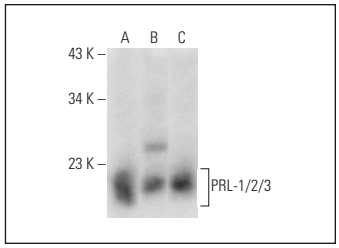
RECOMMENDED SUPPORT REAGENTS

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.

DATA



PRL-1/2/3 (D-6): sc-271879. Western blot analysis of PRL-1/2/3 expression in AMJ2-C8 (**A**) and C6 (**B**) whole cell lysates and rat lung tissue extract (**C**).



PRL-1/2/3 (D-6): sc-271879. Western blot analysis of PRL-1/2/3 expression in human platelet extract (**A**) and mouse brain (**B**) and rat brain (**C**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Mao, Y., et al. 2022. Human amniotic mesenchymal stem cells promote endometrium regeneration in a rat model of intrauterine adhesion. Cell Biol. Int. E-published.

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.