SANTA CRUZ BIOTECHNOLOGY, INC.

PRL-3 (111AT714): sc-130245

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. PPRL-2 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.
4. Matter, W.F., et al. 2001. Role of PRL-3, a human muscle-specific tyrosine phosphatase, in angiotensin-II signaling. Biochem. Biophys. Res. Commun. 283: 1061-1068.
5. Zeng, Q., et al. 2003. PRL-3 and PRL-1 promote cell migration, invasion, and metastasis. Cancer Res. 63: 2716-2722.
6. Jeong, D.G., et al. 2005. Trimeric structure of PRL-1 phosphatase reveals an active enzyme conformation and regulation mechanisms. J. Mol. Biol. 345: 401-413.

CHROMOSOMAL LOCATION

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

SOURCE

PRL-3 (111AT714) is a mouse monoclonal antibody raised against recombinant PRL-3 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

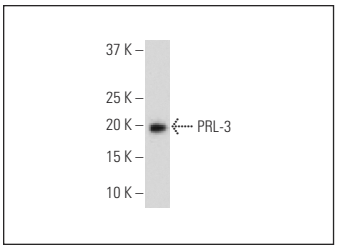
APPLICATIONS

PRL-3 (111AT714) 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

DATA



PRL-3 (111AT714): sc-130245. Western blot analysis of PRL-3 expression in 293 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Johansson, J.A., et al. 2020. PRL3-DDX21 transcriptional control of endolysosomal genes restricts melanocyte stem cell differentiation. Dev. Cell. 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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.