

# PRL-1/2/3 (FL-173): sc-33197

## 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 is stimulates progression from G<sub>1</sub> 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

- Ling, J.R., et al. 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.
- 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.
- 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.
- Zeng, Q., et al. 2003. PRL-3 and PRL-1 promote cell migration, invasion, and metastasis. *Cancer Res.* 63: 2716-2722.
- 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.

## SOURCE

PRL-1/2/3 (FL-173) is a rabbit polyclonal antibody raised against amino acids 1-173 representing full length PRL-3 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

PRL-1/2/3 (FL-173) is recommended for detection of PRL-1, PRL-2 and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

PRL-1/2/3 (FL-173) is also recommended for detection of PRL-1, PRL-2 and PRL-3 in additional species, including equine, canine, bovine and avian.

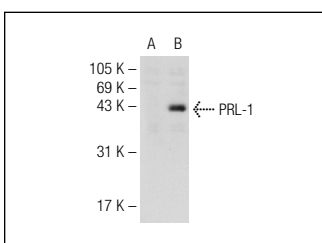
Molecular Weight of PRL-1/2/3: 20/25/40 kDa.

Positive Controls: rat brain extract: sc-2392, PRL-1 (h): 293 Lysate: sc-176602 or PRL-1 (m3): 293T Lysate: sc-122775.

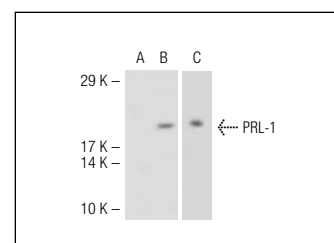
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



PRL-1/2/3 (FL-173): sc-33197. Western blot analysis of PRL-1 expression in non-transfected: sc-110760 (A) and human PRL-1 transfected: sc-176602 (B) 293 whole cell lysates.



PRL-1/2/3 (FL-173): sc-33197. Western blot analysis of PRL-1 expression in non-transfected: sc-117752 (A), mouse PRL-1 transfected: sc-122774 (B) and mouse PRL-1 transfected: sc-122775 (C) 293T whole cell lysates.

## RESEARCH USE

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



Try **PRL-1/2/3 (D-6): sc-271879** or **PRL-1/2/3 (G-10): sc-365659**, our highly recommended monoclonal alternatives to PRL-1/2/3 (FL-173).