

# PHI-1 (I-12): sc-240777

## BACKGROUND

PHI-1, also known as PPP1R14B (protein phosphatase 1, regulatory (inhibitor) subunit 14B), PLCB3N (phospholipase C- $\beta$ -3 neighbouring gene protein), PNG or SOM172, is a 147 amino acid coiled-coil protein that belongs to the PP1 inhibitor family. Ubiquitously expressed at low levels, PHI-1 localizes to cytoplasm and functions as an inhibitor of PP1. PHI-1 blocks myosin light chain dephosphorylation and interacts with MYPT1, an important regulator of cell migration, adhesion and retraction that may function as a tumor suppressor by regulating Rho-dependent amoeboid cell behavior in metastasis. Phosphorylated primarily on threonine 57 and an unknown serine by PKC, PHI-1 exhibits a 50-fold increase in inhibitory activity during phosphorylation. The gene that encodes PHI-1 maps to human chromosome 11q13.1.

## REFERENCES

- Lagercrantz, J., Kedra, D., Carson, E., Nordenskjöld, M., Dumanski, J.P., Weber, G. and Piehl, F. 1996. Sequence and expression of the mouse homologue to human phospholipase C  $\beta$ 3 neighboring gene. *Biochem. Biophys. Res. Commun.* 223: 335-340.
- Lagercrantz, J., Carson, E., Larsson, C., Nordenskjöld, M. and Weber, G. 1996. Isolation and characterization of a novel gene close to the human phosphoinositide-specific phospholipase C  $\beta$ 3 gene on chromosomal region 11q13. *Genomics* 31: 380-384.
- Ceulemans, H., Stalmans, W. and Bollen, M. 2002. Regulator-driven functional diversification of protein phosphatase-1 in eukaryotic evolution. *Bioessays* 24: 371-381.
- Cerutti, J.M., Delcelo, R., Amadei, M.J., Nakabashi, C., Maciel, R.M., Peterson, B., Shoemaker, J. and Riggins, G.J. 2004. A preoperative diagnostic test that distinguishes benign from malignant thyroid carcinoma based on gene expression. *J. Clin. Invest.* 113: 1234-1242.
- Liu, Q.R., Gong, J.P. and Uhl, G.R. 2005. Families of protein phosphatase 1 modulators activated by protein kinases  $\alpha$  and C: focus on brain. *Prog. Nucleic Acid Res. Mol. Biol.* 79: 371-404.
- Weiser, D.C., Row, R.H. and Kimelman, D. 2009. Rho-regulated myosin phosphatase establishes the level of protrusive activity required for cell movements during zebrafish gastrulation. *Development* 136: 2375-2384.
- Drgonova, J., Zimonjic, D.B., Hall, F.S. and Uhl, G.R. 2010. Effect of KEPI (Ppp1r14c) deletion on morphine analgesia and tolerance in mice of different genetic backgrounds: when a knockout is near a relevant quantitative trait locus. *Neuroscience* 165: 882-895.

## CHROMOSOMAL LOCATION

Genetic locus: PPP1R14B (human) mapping to 11q13.1; 4933415F23Rik (mouse) mapping to 1 A5, Ppp1r14b (mouse) mapping to 19 A.

## SOURCE

PHI-1 (I-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PHI-1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-240777 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

PHI-1 (I-12) is recommended for detection of 4933415F23Rik of mouse origin, PHI-1 of human, mouse and rat origin and RGD1309049 of rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

PHI-1 (I-12) is also recommended for detection of PHI-1 in additional species, including canine.

Suitable for use as control antibody for PHI-1 siRNA (h): sc-96843, PHI-1 shRNA Plasmid (h): sc-96843-SH and PHI-1 shRNA (h) Lentiviral Particles: sc-96843-V.

Molecular Weight of PHI-1: 16 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.