SANTA CRUZ BIOTECHNOLOGY, INC.

PHI-1 (D-8): sc-514759

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

PHI-1, also known as PPP1R14B (protein phosphatase 1, regulatory (inhibitor) subunit 14B), PLCB3N (phospholipase C-β-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

1. Lagercrantz, J., et al. 1996. Sequence and expression of the mouse homologue to human phospholipase C β3 neighboring gene. Biochem. Biophys. Res. Commun. 223: 335-340.
2. Lagercrantz, J., et al. 1996. Isolation and characterization of a novel gene close to the human phosphoinositide-specific phospholipase C β3 gene on chromosomal region 11q13. Genomics 31: 380-384.
3. Ceulemans, H., et al. 2002. Regulator-driven functional diversification of protein phosphatase-1 in eukaryotic evolution. Bioessays 24: 371-381.
4. Cerutti, J.M., et al. 2004. A preoperative diagnostic test that distinguishes benign from malignant thyroid carcinoma based on gene expression. J. Clin. Invest. 113: 1234-1242.
5. Liu, Q.R., et al. 2005. Families of protein phosphatase 1 modulators activated by protein kinases a and C: focus on brain. Prog. Nucleic Acid Res. Mol. Biol. 79 : 371-404.

CHROMOSOMAL LOCATION

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

SOURCE

PHI-1 (D-8) is a mouse monoclonal antibody raised against amino acids 2-41 mapping near the C-terminus of PHI-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.

PHI-1 (D-8) is available conjugated to agarose (sc-514759 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514759 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514759 PE), fluorescein (sc-514759 FITC), Alexa Fluor® 488 (sc-514759 AF488), Alexa Fluor® 546 (sc-514759 AF546), Alexa Fluor® 594 (sc-514759 AF594) or Alexa Fluor® 647 (sc-514759 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514759 AF680) or Alexa Fluor® 790 (sc-514759 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

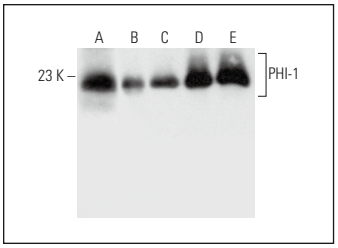
PHI-1 (D-8) is recommended for detection of PHI-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PHI-1 siRNA (h): sc-96843, PHI-1 siRNA (m): sc-152222, PHI-1 shRNA Plasmid (h): sc-96843-SH, PHI-1 shRNA Plasmid (m): sc-152222-SH, PHI-1 shRNA (h) Lentiviral Particles: sc-96843-V and PHI-1 shRNA (m) Lentiviral Particles: sc-152222-V.

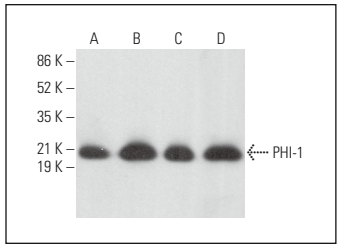
Molecular Weight of PHI-1: 16 kDa.

Positive Controls: human skin extract: sc-363777, HeLa whole cell lysate: sc-2200 or Jurkat whole cell lysate: sc-2204.

DATA



PHI-1 (D-8): sc-514759. Western blot analysis of PHI-1 expression in human skin (**A**) and human heart (**B**) tissue extracts and Hep G2 (**C**), HeLa (**D**) and Jurkat (**E**) whole cell lysates.



PHI-1 (D-8): sc-514759. Western blot analysis of PHI-1 expression in ECV304 (**A**), C2C12 (**B**), Neuro-2A (**C**) and A-10 (**D**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Weng, Q., et al. 2019. Single-cell transcriptomics uncovers glial progenitor diversity and cell fate determinants during development and gliomagenesis. Cell Stem Cell 24: 707-723.e8.
2. Fu, Y., et al. 2021. Heterogeneity of glial progenitor cells during the neurogenesis-to-gliogenesis switch in the developing human cerebral cortex. Cell Rep. 34: 108788.
3. Zhou, N., et al. 2024. PPP1R14B-mediated phosphorylation enhances protein stability of RPS6KA1 to promote hepatocellular carcinoma tumorigenesis. Biochim. Biophys. Acta Mol. Cell Res. 1871: 119840.

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.