

PHLPP (Y-14): sc-137664

BACKGROUND

The leucine-rich (LRR) repeat is a 20-30 amino acid motif that forms a hydrophobic α/β horseshoe fold, allowing it to accommodate several leucine residues within a tightly packed core. All LRR repeats contain a variable segment and a highly conserved segment, the latter of which accounts for 11 or 12 residues of the entire LRR motif. PHLPP (PH domain leucine-rich repeat protein phosphatase-like), also known as PHLPP2 (PH domain and leucine rich repeat protein phosphatase 2), is a 1,323 amino acid protein that contains 21 LRR repeats, as well as one PH domain and one PP2C-like domain. Localized to both the nucleus and the cytoplasm, PHLPP uses manganese as a cofactor and mediates the dephosphorylation of Akt1, thereby playing a role in cell survival and apoptotic regulation. Multiple isoforms of PHLPP exist due to alternative splicing events.

REFERENCES

1. Kobe, B. and Deisenhofer, J. 1994. The leucine-rich repeat: a versatile binding motif. *Trends Biochem. Sci.* 19: 415-421.
2. Kobe, B. and Deisenhofer, J. 1995. Proteins with leucine-rich repeats. *Curr. Opin. Struct. Biol.* 5: 409-416.
3. Enkhbayar, P., Kamiya, M., Osaki, M., Matsumoto, T. and Matsushima, N. 2004. Structural principles of leucine-rich repeat (LRR) proteins. *Proteins* 54: 394-403.
4. Brognard, J., Sierceki, E., Gao, T. and Newton, A.C. 2007. PHLPP and a second isoform, PHLPP2, differentially attenuate the amplitude of Akt signaling by regulating distinct Akt isoforms. *Mol. Cell* 25: 917-931.
5. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611066. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Brognard, J., Niederst, M., Reyes, G., Warfel, N. and Newton, A.C. 2009. Common polymorphism in the phosphatase PHLPP2 results in reduced regulation of Akt and protein kinase C. *J. Biol. Chem.* 284: 15215-15223.

CHROMOSOMAL LOCATION

Genetic locus: PHLPP2 (human) mapping to 16q22.2; Phlpp2 (mouse) mapping to 8 D3.

SOURCE

PHLPP (Y-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PHLPP of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-137664 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

PHLPP (Y-14) is recommended for detection of PHLPP of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

PHLPP (Y-14) is also recommended for detection of PHLPP in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PHLPP siRNA (h): sc-93087, PHLPP siRNA (m): sc-152230, PHLPP shRNA Plasmid (h): sc-93087-SH, PHLPP shRNA Plasmid (m): sc-152230-SH, PHLPP shRNA (h) Lentiviral Particles: sc-93087-V and PHLPP shRNA (m) Lentiviral Particles: sc-152230-V.

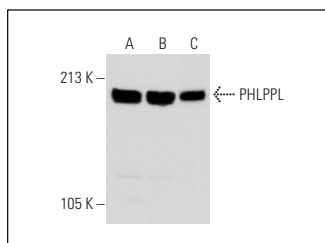
Molecular Weight of PHLPP: 150 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HEK293 whole cell lysate: sc-45136 or K-562 whole cell lysate: sc-2203.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



PHLPP (Y-14): sc-137664. Western blot analysis of PHLPP expression in HeLa (A), HEK293 (B) and K-562 (C) whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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