SANTA CRUZ BIOTECHNOLOGY, INC.

PPX (C-6): sc-374106

BACKGROUND

In eukaryotes, the phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions, including division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the protein phosphatases. In general, the protein phosphatase (PP) holoenzyme is a trimeric complex composed of a regulatory subunit, a variable subunit and a catalytic subunit. Four major families of protein phosphatase catalytic subunits have been identified, designated PP1, PP2A, PP2B (calcineurin) and PP2C. An additional protein phosphatase catalytic subunit, PPX (also known as PP4) is a putative member of a novel PP family.

CHROMOSOMAL LOCATION

Genetic locus: PPP4C (human) mapping to 16p11.2; Ppp4c (mouse) mapping to 7 F3.

SOURCE

PPX (C-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 275-298 at the C-terminus of PPX 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.

PPX (C-6) is available conjugated to agarose (sc-374106 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374106 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374106 PE), fluorescein (sc-374106 FITC), Alexa Fluor® 488 (sc-374106 AF488), Alexa Fluor® 546 (sc-374106 AF546), Alexa Fluor® 594 (sc-374106 AF594) or Alexa Fluor® 647 (sc-374106 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374106 AF680) or Alexa Fluor® 790 (sc-374106 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-374106 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

PPX (C-6) is recommended for detection of PPX 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). PPX (C-6) is also recommended for detection of PPX in additional species, including equine, canine and bovine.

Suitable for use as control antibody for PPX siRNA (h): sc-39202, PPX siRNA (m): sc-39203, PPX shRNA Plasmid (h): sc-39202-SH, PPX shRNA Plasmid (m): sc-39203-SH, PPX shRNA (h) Lentiviral Particles: sc-39202-V and PPX shRNA (m) Lentiviral Particles: sc-39203-V.

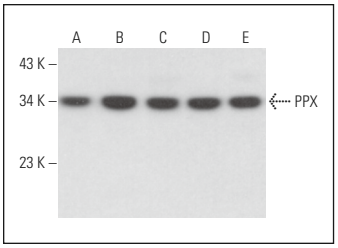
Molecular Weight of PPX: 38 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, Jurkat whole cell lysate: sc-2204 or NTERA-2 cl.D1 whole cell lysate: sc-364181.

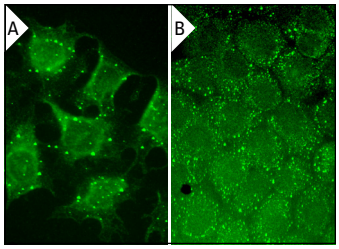
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



PPX (C-6): sc-374106. Western blot analysis of PPX expression in MCF7 (**A**), NIH/3T3 (**B**), Jurkat (**C**), NTERA-2 cl.D1 (**D**) and HEK293T (**E**) whole cell lysates.



PPX (C-6): sc-374106. Immunofluorescence staining of methanol-fixed HeLa (**A**) and A-431 (**B**) cells showing cytoplasmic and nuclear localization.

SELECT PRODUCT CITATIONS

1. Hadweh, P., et al. 2014. The PP4R1 subunit of protein phosphatase PP4 targets TRAF2 and TRAF6 to mediate inhibition of NFκB activation. Cell. Signal. 26: 2730-2737.
2. Tomar, D., et al. 2019. Blockade of MCU-mediated Ca^{2+} uptake perturbs lipid metabolism via PP4-dependent AMPK dephosphorylation. Cell Rep. 26: 3709-3725.e7.
3. Yang, F.M., et al. 2021. Regulation of TLR4 signaling through the TRAF6/sNASP axis by reversible phosphorylation mediated by CK2 and PP4. Proc. Natl. Acad. Sci. USA 118: e2107044118.
4. Gu, S.H., et al. 2022. Expressions of the protein phosphatases PP1 and PP4 during the embryonic diapause process of the silkworm *Bombyx mori*. Zool. Stud. 61: e61.
5. Kaposi, N., et al. 2023. New insights into the functional role of protein phosphatase 4 regulatory subunit PP4R3A/SMEK1 in the regulation of leukemic cell fate. Int. J. Biol. Macromol. 233: 123467.

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.