

PP1 β (A-6): sc-365678

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 subunit 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. The PP1 family is comprised of subfamily members PP1 α , PP1 β and PP1 γ , which are MgATP-dependent enzymes. PP1 inactivity is maintained through its association with the inhibitory protein NIPP-1 (nuclear inhibitor of PP1). Phosphorylation of NIPP-1 by cAMP-PK or casein kinase II results in the release of active PP1.

REFERENCES

1. Cohen, P.T. 1993. Important roles for novel protein phosphatases dephosphorylating serine and threonine residues. *Biochem. Soc. Trans.* 21: 884-888.
2. Mumby, M.C. and Walter, G. 1993. Protein serine/threonine phosphatases: structure, regulation, and functions in cell growth. *Physiol. Rev.* 73: 673-699.

CHROMOSOMAL LOCATION

Genetic locus: PPP1CB (human) mapping to 2p23.2; Ppp1cb (mouse) mapping to 5 B1.

SOURCE

PP1 β (A-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 295-322 at the C-terminus of PP1 β of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PP1 β (A-6) is available conjugated to agarose (sc-365678 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365678 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365678 PE), fluorescein (sc-365678 FITC), Alexa Fluor[®] 488 (sc-365678 AF488), Alexa Fluor[®] 546 (sc-365678 AF546), Alexa Fluor[®] 594 (sc-365678 AF594) or Alexa Fluor[®] 647 (sc-365678 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-365678 AF680) or Alexa Fluor[®] 790 (sc-365678 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365678 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

APPLICATIONS

PP1 β (A-6) is recommended for detection of PP1 β of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

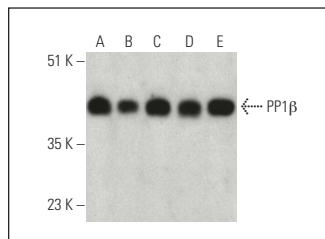
PP1 β (A-6) is also recommended for detection of PP1 β in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for PP1 β siRNA (h): sc-36295, PP1 β siRNA (m): sc-36296, PP1 β shRNA Plasmid (h): sc-36295-SH, PP1 β shRNA Plasmid (m): sc-36296-SH, PP1 β shRNA (h) Lentiviral Particles: sc-36295-V and PP1 β shRNA (m) Lentiviral Particles: sc-36296-V.

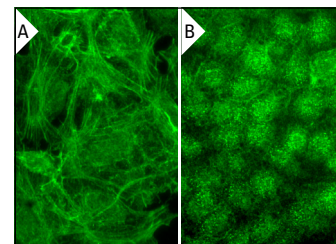
Molecular Weight of PP1 β : 36 kDa.

Positive Controls: L8 cell lysate: sc-3807, HeLa whole cell lysate: sc-2200 or A549 cell lysate: sc-2413.

DATA



PP1 β (A-6) HRP: sc-365678 HRP. Direct western blot analysis of PP1 β expression in HeLa (A), L8 (B), MDA-MB-231 (C), A549 (D) and SK-N-SH (E) whole cell lysates.



PP1 β (A-6): sc-365678. Immunofluorescence staining of formalin-fixed Hep G2 cells showing membrane localization (A). Immunofluorescence staining of formalin-fixed HeLa cells showing nuclear, cytoplasmic and membrane localization (B).

SELECT PRODUCT CITATIONS

1. Li, Y.C., et al. 2016. Oridonin suppress cell migration via regulation of nonmuscle myosin IIA. *Cytotechnology* 68: 389-397.
2. Schnell, H.M., et al. 2021. Reg1 and Snf1 regulate stress-induced relocalization of protein phosphatase-1 to cytoplasmic granules. *FEBS J.* 288: 4833-4848.
3. Felgueiras, J., et al. 2022. PP1 catalytic isoforms are differentially expressed and regulated in human prostate cancer. *Exp. Cell Res.* 418: 113282.
4. Yuki, R., et al. 2023. SH2D4A promotes centrosome maturation to support spindle microtubule formation and mitotic progression. *Sci. Rep.* 13: 2067.
5. Matos, B., et al. 2024. CAVPENET peptide inhibits prostate cancer cells proliferation and migration through PP1 γ -dependent inhibition of AKT signaling. *Pharmaceutics* 16: 1199.

RESEARCH USE

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