SANTA CRUZ BIOTECHNOLOGY, INC.

PP1γ (E-4): sc-515943

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 sub-family members PP1α, PP1β and PP1γ, 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.

CHROMOSOMAL LOCATION

Genetic locus: PPP1CC (human) mapping to 12q24.11; Ppp1cc (mouse) mapping to 5 F.

SOURCE

PP1γ (E-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 298-323 at the C-terminus of PP1γ of human origin.

PRODUCT

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

PP1γ (E-4) is available conjugated to agarose (sc-515943 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515943 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515943 PE), fluorescein (sc-515943 FITC), Alexa Fluor® 488 (sc-515943 AF488), Alexa Fluor® 546 (sc-515943 AF546), Alexa Fluor® 594 (sc-515943 AF594) or Alexa Fluor® 647 (sc-515943 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515943 AF680) or Alexa Fluor® 790 (sc-515943 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PP1γ (E-4) is recommended for detection of PP1γ 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 PP1γ siRNA (h): sc-36297, PP1γ siRNA (m): sc-36298, PP1γ shRNA Plasmid (h): sc-36297-SH, PP1γ shRNA Plasmid (m): sc-36298-SH, PP1γ shRNA (h) Lentiviral Particles: sc-36297-V and PP1γ shRNA (m) Lentiviral Particles: sc-36298-V.

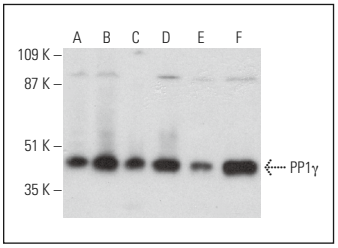
Molecular Weight of PP1γ: 35 kDa.

Positive Controls: SK-BR-3 cell lysate: sc-2218, HEK293 whole cell lysate: sc-45136 or WEHI-231 whole cell lysate: sc-2213.

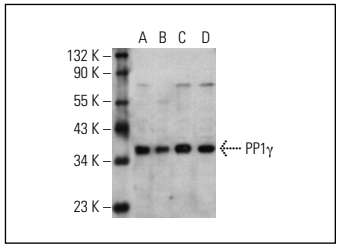
STORAGE

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

DATA



PP1γ (E-4) HRP: sc-515943 HRP. Direct western blot analysis of PP1γ expression in SK-BR-3 (**A**), HEK293 (**B**), WEHI-231 (**C**), Jurkat (**D**), HISM (**E**) and HeLa (**F**) whole cell lysates.



PP1γ (E-4) HRP: sc-515943 HRP. Direct western blot analysis of PP1γ expression in Jurkat (**A**), WEHI-231 (**B**), HEK293 (**C**) and SK-BR-3 (**D**) whole cell lysates. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker MW Tag-HRP: sc-516732.

SELECT PRODUCT CITATIONS

1. Capalbo, L., et al. 2019. The midbody interactome reveals unexpected roles for PP1 phosphatases in cytokinesis. Nat. Commun. 10: 4513.
2. Kracht, M., et al. 2020. Protein phosphatase-1 complex disassembly by p97 is initiated through multivalent recognition of catalytic and regulatory subunits by the p97 SEP-domain adapters. J. Mol. Biol. 432: 6061-6074.
3. Stecher, C., et al. 2021. Protein phosphatase 1 regulates human cytomegalovirus protein translation by restraining AMPK signaling. Front. Microbiol. 12: 698603.
4. Troyanovsky, R.B., et al. 2021. Basolateral protein Scribble binds phosphatase PP1 to establish a signaling network maintaining apicobasal polarity. J. Biol. Chem. 297: 101289.
5. Du, J., et al. 2021. RIPK1 dephosphorylation and kinase activation by PPP1R3G/PP1γ promote apoptosis and necroptosis. Nat. Commun. 12: 7067.
6. Serpico, A.F., et al. 2022. Compartmentalized control of Cdk1 drives mitotic spindle assembly. Cell Rep. 38: 110305.
7. Cho, Y., et al. 2022. Tricellulin secures the epithelial barrier at tricellular junctions by interacting with actomyosin. J. Cell Biol. 221: e202009037.
8. Srivastava, G., et al. 2022. The ribosomal RNA processing 1B:protein phosphatase 1 holoenzyme reveals non-canonical PP1 interaction motifs. Cell Rep. 41: 111726.
9. Kong, N., et al. 2023. RIF1 suppresses the formation of single-stranded ultrafine anaphase bridges via protein phosphatase 1. Cell Rep. 42: 112032.
10. Yuki, R., et al. 2023. SH2D4A promotes centrosome maturation to support spindle microtubule formation and mitotic progression. Sci. Rep. 13: 2067.

RESEARCH USE

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