SANTA CRUZ BIOTECHNOLOGY, INC.

PP1γ (N-19): sc-6109

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 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, PPP1CA (human) mapping to 11q13.2; Ppp1cc (mouse) mapping to 5 F, Ppp1ca (mouse) mapping to 19 A.

SOURCE

PP1γ (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of PP1γ of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-6109 P, (100 µg 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

PP1γ (N-19) is recommended for detection of PP1γ and PP1α 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).

PP1γ (N-19) is also recommended for detection of PP1γ and PP1α in additional species, including canine, bovine, porcine and avian.

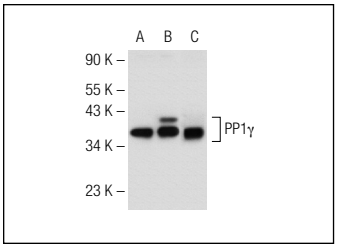
Molecular Weight of PP1γ: 35 kDa.

Positive Controls: PP1γ (h2): 293T Lysate: sc-177763, SK-BR-3 cell lysate: sc-2218 or PP1γ (m): 293T Lysate: sc-177763.

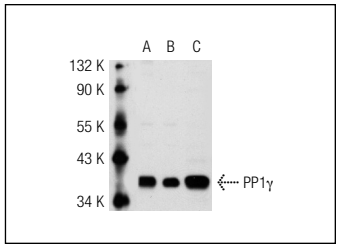
RECOMMENDED SECONDARY REAGENTS

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



PP1γ (N-19): sc-6109. Western blot analysis of PP1γ expression in non-transfected 293T: sc-117752 (**A**), human PP1γ transfected 293T: sc-177763 (**B**) and SK-BR-3 (**C**) whole cell lysates.



PP1γ (N-19): sc-6109. Western blot analysis of PP1γ expression in non-transfected 293T: sc-117752 (**A**), mouse PP1γ transfected 293T: sc-122712 (**B**) and CTLL-2 (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Varmuza, S., et al. 1999. Spermiogenesis is impaired in mice bearing a targeted mutation in the protein phosphatase 1Cγ gene. Dev. Biol. 205: 98-110.
2. Zeke, T., et al. 2003. Expression of protein phosphatase 1 during the asexual development of *Neurospora crassa*. Comp. Biochem. Physiol. B, Biochem. Mol. Biol. 134: 161-170.
3. Ayon, R., et al. 2009. Complex phosphatase regulation of Ca^{2+}-activated Cl^- currents in pulmonary arterial smooth muscle cells. J. Biol. Chem. 284: 32507-32521.
4. Canals, D., et al. 2012. Protein phosphatase 1α mediates ceramide-induced ERM protein dephosphorylation: a novel mechanism independent of phosphatidylinositol 4, 5-biphosphate (PIP2) and myosin/ERM phosphatase. J. Biol. Chem. 287: 10145-10155.
5. Valin, A., et al. 2013. Transcription factor Sp3 represses expression of $p21^{CIP}$ via inhibition of productive elongation by RNA polymerase II. Mol. Cell. Biol. 33: 1582-1593.

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.