SANTA CRUZ BIOTECHNOLOGY, INC.

PP1α (C-19): sc-6104

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: PPP1CA (human) mapping to 11q13.2; Ppp1ca (mouse) mapping to 19 A.

SOURCE

PP1α (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of PP1α 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-6104 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PP1α (C-19) is recommended for detection of 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).

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

Suitable for use as control antibody for PP1α siRNA (h): sc-36299, PP1α siRNA (m): sc-36300, PP1α shRNA Plasmid (h): sc-36299-SH, PP1α shRNA Plasmid (m): sc-36300-SH, PP1α shRNA (h) Lentiviral Particles: sc-36299-V and PP1α shRNA (m) Lentiviral Particles: sc-36300-V.

Molecular Weight of PP1α: 37 kDa.

Positive Controls: BC_3H1 cell lysate: sc-2299, KNRK whole cell lysate: sc-2214 or NIH/3T3 whole cell lysate: sc-2210.

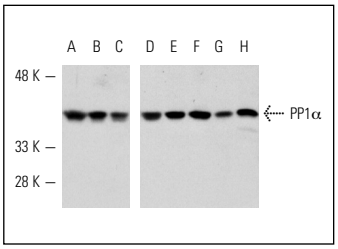
RESEARCH USE

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

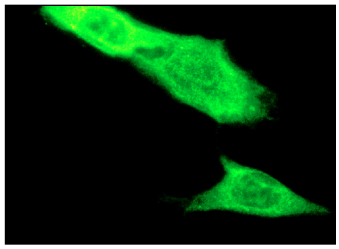
STORAGE

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

DATA



PP1α (C-19): sc-6104. Western blot analysis of PP1α expression in BT-20 (**A**), SK-BR-3 (**B**), Jurkat (**C**), BC_3H1 (**D**), KNRK (**E**), NIH/3T3 (**F**), A-10 (**G**) and PC-12 (**H**) cell lysates.



PP1α (C-19): sc-6104. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Patel, K.G., et al. 2001. Myr 8, a novel unconventional myosin expressed during brain development associates with the protein phosphatase catalytic subunits 1α and 1γ1. J. Neurosci. 21: 7954-7968.
2. Yu, Y.M., et al. 2008. A PP1-binding motif present in BRCA1 plays a role in its DNA repair function. Int. J. Biol. Sci. 4: 352-361.
3. Regad, T., et al. 2009. The tumor suppressor Pml regulates cell fate in the developing neocortex. Nat. Neurosci. 12: 132-140.
4. Zhang, F., et al. 2010. The African swine fever virus DP71L protein recruits the protein phosphatase 1 catalytic subunit to dephosphorylate eIF2α and inhibits CHOP induction but is dispensable for these activities during virus infection. J. Virol. 84: 10681-10689.
5. Petrich, A., et al. 2013. Phosphorylation of threonine 333 regulates trafficking of the human sst5 somatostatin receptor. Mol. Endocrinol. 27: 671-682.
6. Minnebo, N., et al. 2013. NIPP1 maintains EZH2 phosphorylation and promoter occupancy at proliferation-related target genes. Nucleic Acids Res. 41: 842-854.
7. Kliewer, A. and Schulz, S. 2014. Differential regulation of somatostatin receptor dephosphorylation by β-arrestin1 and β-arrestin2. Naunyn Schmiedebergs Arch. Pharmacol. 387: 263-269.
8. Rubio-Villena, C., et al. 2015. Structure-function analysis of PPP1R3D, a protein phosphatase 1 targeting subunit, reveals a binding motif for 14-3-3 proteins which regulates its glycogenic properties. PLoS ONE 10: e0131476.