SANTA CRUZ BIOTECHNOLOGY, INC.

PR48 (C-202): sc-11801

BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions. The protein phosphatase (PP) holoenzyme is a trimeric complex composed of a regulatory subunit, a variable subunit, and a catalytic subunit. PR48 is a 48 kDa regulatory subunit of protein phosphatase 2A (PP2A). PP2A activity is required for the initiation of DNA replication in yeast, viral, and vertebrate systems. PR48 localizes to the nucleus and binds specifically to Cdc6, a highly conserved protein which is required for the formation of pre-replicative complexes. PR48 is considered to be involved in the dephosphorylation of Cdc6 by PP2A, a process important to the control of DNA replication in mammalian cell.

REFERENCES

1. Mumby, M.C. and Walter, G. 1993. Protein serine/threonine phosphatases: structure, regulation, and functions in cell growth. Physiol. Rev. 73: 673-699.
2. Wera, S. and Hemming,s B.A. 1995. Serine/threonine protein phosphatases. Biochem. J. 311: 17-29.
3. Lin, F.C. and Arndt, K.T. 1995. The role of *Saccharomyces cerevisiae* type 2A phosphatase in the actin cytoskeleton and in entry into mitosis. EMBO J. 14: 2745-2759.
4. Gavin, K.A., et al. 1995. Conserved initiator proteins in eukaryotes. Science 270: 1667-1671.
5. Coleman, T.R., et al. 1996. The *Xenopus* Cdc6 protein is essential for the initiation of a single round of DNA replication in cell-free extracts. Cell 87: 53-63.
6. Yan, Z., et al. 1998. Cdc6 is regulated by E2F and is essential for DNA replication in mammalian cells. Proc. Natl. Acad. Sci. USA 95: 3603-3608.
7. Lin, X.H., et al. 1998. Protein phosphatase 2A is required for the initiation of chromosomal DNA replication. Proc. Natl. Acad. Sci. USA 95: 14693-14698.
8. Yan, Z., et al. 2000. PR48, a novel regulatory subunit of protein phosphatase 2A, interacts with Cdc6 and modulates DNA replication in human cells. Mol. Cell. Biol. 20: 1021-1029.

CHROMOSOMAL LOCATION

Genetic locus: PPP2R3B (human) mapping to Xp22.33, Yp11.32.

SOURCE

PR48 (C-202) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of PR48 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-11801 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PR48 (C-202) is recommended for detection of PR48 of 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).

Suitable for use as control antibody for PR48 siRNA (h): sc-39204, PR48 shRNA Plasmid (h): sc-39204-SH and PR48 shRNA (h) Lentiviral Particles: sc-39204-V.

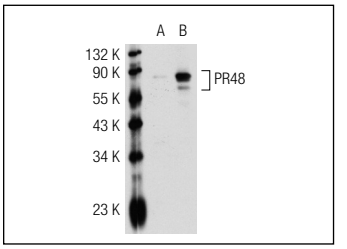
Molecular Weight of PR48: 48 kDa.

Positive Controls: PR48 (h3): 293T Lysate: sc-116791.

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



PR48 (C-202): sc-11801. Western blot analysis of PR48 expression in non-transfected: sc-117752 (**A**) and human PR48 transfected: sc-116791 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Jayadeva, G., et al. 2010. B55α PP2A holoenzymes modulate the phosphorylation status of the retinoblastoma-related protein p107 and its activation. J. Biol. Chem. 285: 29863-29873.

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.