SANTA CRUZ BIOTECHNOLOGY, INC.

PP2A-B56-α (23): sc-136045

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 subunits 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 PP2A family comprises subfamily members PP2Aα and PP2Aβ. The PP2A catalytic subunit associates with a variety of regulatory subunits. Regulatory subunits include PP2A-A-α and -A-β, PP2A-B-α and -B-β, PP2A-C-α and -C-β, PP2A-B56-α, -B56-β, -B56-γ and -B56-δ.

REFERENCES

1. Ueki, K., et al. 1992. Structure and expression of two isoforms of the murine calmodulin-dependent protein phosphatase regulatory subunit (calcineurin B). Biochem. Biophys. Res. Commun. 187: 537-543.
2. Cohen, P.T. 1993. Important roles for novel protein phosphatases dephosphorylating serine and threonine residues. Biochem. Soc. Trans. 21: 884-888.
3. Hendrix, P., et al. 1993. Structure and expression of a 72-kDa regulatory subunit of protein phosphatase 2A. Evidence for different size forms produced by alternative splicing. J. Biol. Chem. 268: 15267-15276.
4. Mumby, M.C., et al. 1993. Protein serine/threonine phosphatases: structure, regulation, and functions in cell growth. Physiol. Rev. 73: 673-699.
5. Okubo, S., et al. 1994. A regulatory subunit of smooth muscle Myosin bound phosphatase. Biochem. Biophys. Res. Commun. 200: 429-434.
6. Wera, S., et al. 1995. Serine/threonine protein phosphatases. Biochem. J. 311: 17-29.
7. Van Eynde, A., et al. 1995. Molecular cloning of NIPP-1, a nuclear inhibitor of protein phosphatase-1, reveals homology with polypeptides involved in RNA processing. J. Biol. Chem. 270: 28068-28074.

CHROMOSOMAL LOCATION

Genetic locus: PPP2R5A (human) mapping to 1q32.3; Ppp2r5a (mouse) mapping to 1 H6.

SOURCE

PP2A-B56-α (23) is a mouse monoclonal antibody raised against amino acids 1-162 of PP2A-B56-α of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

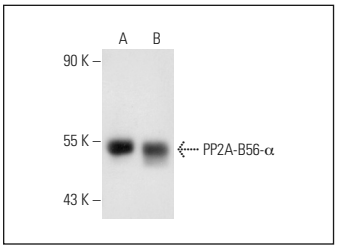
PP2A-B56-α (23) is recommended for detection of PP2A-B56-α of mouse, rat, human and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); not recommended for immunoprecipitation.

Suitable for use as control antibody for PP2A-B56-α siRNA (h): sc-39181, PP2A-B56-α siRNA (m): sc-39182, PP2A-B56-α siRNA (r): sc-270367, PP2A-B56-α shRNA Plasmid (h): sc-39181-SH, PP2A-B56-α shRNA Plasmid (m): sc-39182-SH, PP2A-B56-α shRNA Plasmid (r): sc-270367-SH, PP2A-B56-α shRNA (h) Lentiviral Particles: sc-39181-V, PP2A-B56-α shRNA (m) Lentiviral Particles: sc-39182-V and PP2A-B56-α shRNA (r) Lentiviral Particles: sc-270367-V.

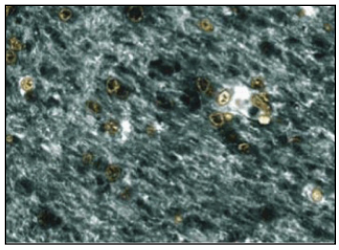
Molecular Weight of PP2A-B56-α: 56 kDa.

Positive Controls: A-10 cell lysate: sc-3806 or C2C12 whole cell lysate: sc-364188.

DATA



PP2A-B56-α (23): sc-136045. Western blot analysis of PP2A-B56-α expression in C2C12 (**A**) and A-10 (**B**) whole cell lysates.



PP2A-B56-α (23): sc-136045. Immunofluorescence staining of rabbit brain cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. DeGrande, S.T., et al. 2013. Molecular mechanisms underlying cardiac protein phosphatase 2A regulation in heart. J. Biol. Chem. 288: 1032-1046.
2. Nijenhuis, W., et al. 2014. Negative feedback at kinetochores underlies a responsive spindle checkpoint signal. Nat. Cell Biol. 16: 1257-1264.
3. Holla, S., et al. 2014. Selective inhibition of IFNG-induced autophagy by Mir155- and Mir31-responsive WNT5A and SHH signaling. Autophagy 10: 311-330.
4. Wang, J., et al. 2017. Oncoprotein CIP2A is stabilized via interaction with tumor suppressor PP2A/B56. EMBO Rep. 18: 437-450.
5. Zhang, L., et al. 2018. Eya3 partners with PP2A to induce c-Myc stabilization and tumor progression. Nat. Commun. 9: 1047.
6. Uchida, A., et al. 2018. Targeting Bcl2 with venetoclax is a promising therapeutic strategy for "double-protein-expression" lymphoma with MYC and Bcl2 rearrangements. Haematologica. E-published.

STORAGE

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