SANTA CRUZ BIOTECHNOLOGY, INC.

PP2A-Cα/β (0.T.118): sc-56950

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-Aα and -Aβ, PP2A-Bα and -Bβ, PP2A-Cα and -Cβ, and PP2A-B56α and -B56β.

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.

CHROMOSOMAL LOCATION

Genetic locus: PPP2CA (human) mapping to 5q31.1, PPP2CB (human) mapping to 8p12; Ppp2ca (mouse) mapping to 11 B1.3, Ppp2cb (mouse) mapping to 8 A4.

SOURCE

PP2A-Cα/β (0.T.118) is a mouse monoclonal antibody raised against amino acids 295-309 of PP2A-Cα/β of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} kappa light chian in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PP2A-Cα/β (0.T.118) is recommended for detection of PP2A-Cα/β of mouse, rat, human, *Xenopus,* zebrafish, bovine, porcine and canine 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); to demethylate, treat with 100mM NaOH on ice.

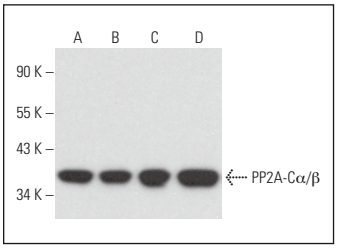
Molecular Weight of PP2A-Cα/β: 36 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, MCF7 whole cell lysate: sc-2206 or NTERA-2 cl.D1 whole cell lysate: sc-364181.

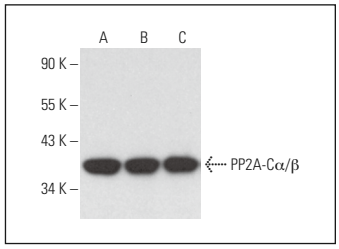
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



PP2A-Cα/β (0.T.118): sc-56950. Western blot analysis of PP2A-Cα/β expression in K-562 (**A**), NIH/3T3 (**B**), SJRH30 (**C**) and Sol8 (**D**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



PP2A-Cα/β (0.T.118): sc-56950. Western blot analysis of PP2A-Cα/β expression in MCF7 (**A**), Hep G2 (**B**) and NTERA-2 cl.D1 (**C**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.

SELECT PRODUCT CITATIONS

1. Chattopadhyay, R., et al. 2018. Resolvin D1 blocks H_2O_2-mediated inhibitory crosstalk between SHP2 and PP2A and suppresses endothelial-monocyte interactions. Free Radic. Biol. Med. 117: 119-131.
2. Pichavaram, P., et al. 2019. Cholesterol crystals promote endothelial cell and monocyte interactions via H_2O_2-mediated PP2A inhibition, NFκB activation and ICAM1 and VCAM1 expression. Redox Biol. 24: 101180.
3. Xu, B., et al. 2022. A quantitative proteomic analysis reveals the potential roles of PRDX3 in neurite outgrowth in N2a-APPswe cells. Biochem. Biophys. Res. Commun. 604: 144-150.
4. Kingsley, G., et al. 2023. DONSON facilitates Cdc45 and GINS chromatin association and is essential for DNA replication initiation. Nucleic Acids Res. 51: 9748-9763.

STORAGE

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

RESEARCH USE

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