SANTA CRUZ BIOTECHNOLOGY, INC.

PP2A-Cα/β (1D6): sc-80665

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.

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 (1D6) 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 chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PP2A-Cα/β (1D6) is available conjugated to agarose (sc-80665 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-80665 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-80665 PE), fluorescein (sc-80665 FITC), Alexa Fluor® 488 (sc-80665 AF488), Alexa Fluor® 546 (sc-80665 AF546), Alexa Fluor® 594 (sc-80665 AF594) or Alexa Fluor® 647 (sc-80665 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-80665 AF680) or Alexa Fluor® 790 (sc-80665 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

PP2A-Cα/β (1D6) is recommended for detection of PP2A-Cα/β of mouse, rat, human, bovine, porcine, canine and zebrafish 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 immunohistochemistry (including paraffin-embedded sections) (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: HeLa whole cell lysate: sc-2200, A-673 cell lysate: sc-2414 or MCF7 whole cell lysate: sc-2206.

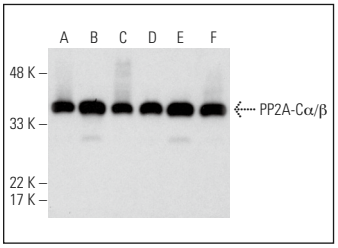
RESEARCH USE

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

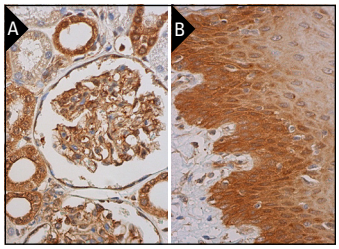
STORAGE

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

DATA



PP2A-Cα/β (1D6) HRP: sc-80665 HRP. Direct western blot analysis of PP2A-Cα/β expression in NIH/3T3 (**A**), A-673 (**B**), MCF7 (**C**), HeLa (**D**), U-937 (**E**) and Hep G2 (**F**) whole cell lysates.



PP2A-Cα/β (1D6): sc-80665. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic, membrane and nuclear staining of cells in glomeruli and cytoplasmic and nuclear staining of cells in tubules (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human esophagus tissue showing cytoplasmic and nuclear staining of squamous epithelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Rizzolio, F., et al. 2012. Retinoblastoma tumor-suppressor protein phosphorylation and inactivation depend on direct interaction with Pin1. Cell Death Differ. 19: 1152-1161.
2. Sen, S., et al. 2013. Induction of a feed forward pro-apoptotic mechanistic loop by nitric oxide in a human breast cancer model. PLoS ONE 8: e70593.
3. Hoffman, A., et al. 2014. Dephosphorylation of CaMKII at T253 controls the metaphase-anaphase transition. Cell. Signal. 26: 748-756.
4. Obanda, D.N., et al. 2016. An extract of *Urtica dioica L.* mitigates obesity induced Insulin resistance in mice skeletal muscle via protein phosphatase 2A (PP2A). Sci. Rep. 6: 22222.
5. Chen, L., et al. 2017. Fasting-induced hormonal regulation of lysosomal function. Cell Res. 27: 748-763.
6. Koehler, D., et al. 2018. The GSK3β inhibitor, TDZD-8, rescues cognition in a zebrafish model of okadaic acid-induced Alzheimer's disease. Neurochem. Int. 122: 31-37.
7. Shirafuji, N., et al. 2018. Homocysteine increases Tau phosphorylation, truncation and oligomerization. Int. J. Mol. Sci. 19: 891.
8. Lawless, M., et al. 2019. Phosphodiesterase 5 inhibition improves contractile function and restores transverse tubule loss and catecholamine responsiveness in heart failure. Sci. Rep. 9: 6801.
9. Labuzan, S.A., et al. 2020. Inhibition of protein phosphatase methylesterase 1 dysregulates MAP kinase signaling and attenuates muscle cell differentiation. Gene 739: 144515.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.