SANTA CRUZ BIOTECHNOLOGY, INC.

PP2Cα/β (H-300): sc-48829

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Eukaryotic protein phosphorylation and dephosphorylation on serine and threonine residues regulates numerous cell functions, including division, homeostasis and apoptosis. A group of proteins that play a major role in this process are the serine/threonine protein phosphatases. Protein phosphatase (PP) holoenzyme is a trimeric complex that contains a regulatory subunit, a variable subunit and a catalytic subunit. PP2C family members are negative regulators of cell stress response pathways. Protein phosphatase 2Cα (PP2Cα) has broad specificity. It dephosphorylates and negatively regulates the activities of MAP kinases and MAP kinase-kinases while also inhibiting the activation of p38 and JNK kinase cascades, induced by environmental stresses. PP2Cα also induces the expression of endogenous p53 and the p53-responsive gene p21, leading to cell cycle arrest and apoptosis. The PP2Cα protein, which contains an active site containing a dinuclear metal ion center, shows highest expression in epithelial cells, as well as in the digestive tract, lung, kidney, breast, prostate, endocrine glands and brain. The PP2Cβ enzyme also has broad specificity and is highly expressed in the heart and skeletal muscle. It may be involved in cell cycle control as it dephosphorylates the cyclin-dependent kinases (CDKs), CDK2 and CDK6, *in vitro*. Overexpression of PP2Cβ can cause cell-growth arrest or cell death.

CHROMOSOMAL LOCATION

Genetic locus: PPM1A (human) mapping to 14q23.1, PPM1B (human) mapping to 2p21; Ppm1a (mouse) mapping to 12 C3, Ppm1a (mouse) mapping to 17 E4.

SOURCE

PP2Cα/β (H-300) is a rabbit polyclonal antibody raised against amino acids 1-300 mapping at the N-terminus of PP2Cα 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.

STORAGE

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

APPLICATIONS

PP2Cα/β (H-300) is recommended for detection of PP2Cα isoforms 1 and 2, and PP2Cβ 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).

PP2Cα/β (H-300) is also recommended for detection of PP2Cα isoforms 1 and 2, and PP2Cβ in additional species, including equine, canine, bovine, porcine and avian.

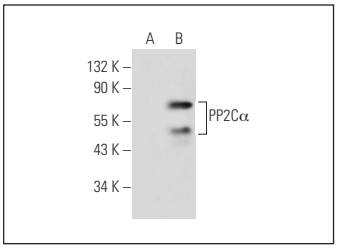
Molecular Weight of PP2Cα/β: 46 kDa.

Positive Control: PP2Cα/β (h): 293T Lysate: sc-113626 or HeLa whole cell lysate: sc-2200.

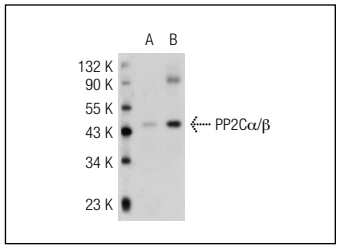
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



PP2Cα/β (H-300): sc-48829. Western blot analysis of PP2Cα expression in non-transfected: sc-117752 (**A**) and human PP2Cα transfected: sc-172768 (**B**) 293T whole cell lysates.



PP2Cα/β (H-300): sc-48829. Western blot analysis of PP2Cα/β expression in non-transfected: sc-117752 (**A**) and human PP2Cα/β transfected: sc-113626 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Dung, T.D., et al. 2013. Suppression of plasminogen activators and the MMP-2/-9 pathway by a *Zanthoxylum avicennae* extract to inhibit the HA22T human hepatocellular carcinoma cell migration and invasion effects *in vitro* and *in vivo* via phosphatase 2A activation. Biosci. Biotechnol. Biochem. 77: 1814-1821.

RESEARCH USE

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

PROTOCOLS

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