SANTA CRUZ BIOTECHNOLOGY, INC.

# PP2Cζ (D-4): sc-390213

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions in eukaryotes, including division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the serine/threonine protein phosphatases. The PP2C group of serine/threonine phosphatases are divided into subclasses according to their requirement for magnesium substrate, their structure and by insensitivity to okadaic acid. PP2Cζ (protein phosphatase 2C isoform ζ), also known as PPM1J (protein phosphatase, $Mg^{2+}/Mn^{2+}$ dependent, 1J), is a 505 amino acid phosphoprotein that contains one PP2C-like domain and belongs to the PP2C family. Two isoforms of PP2Cζ are produced as a result of alternative splicing events. PP2Cζ likely exhibits its specific role through its small ubiquitin-related modifier-1-induced recruitment to UBC9 (ubiquitin conjugating enzyme 9).

## REFERENCES


1. Cohen, P. and Cohen, P.T. 1989. Protein phosphatases come of age. J. Biol. Chem. 264: 21435-21438.
2. Hanada, M., et al. 1998. Selective suppression of stress-activated protein kinase pathway by protein phosphatase 2C in mammalian cells. FEBS Lett. 437: 172-176.
3. Zolnierowicz, S. 2000. Type 2A protein phosphatase, the complex regulator of numerous signaling pathways. Biochem. Pharmacol. 60: 1225-1235.
4. Hanada, M., et al. 2001. Regulation of the TAK1 signaling pathway by protein phosphatase 2C. J. Biol. Chem. 276: 5753-5759.
5. Komaki, K., et al. 2003. Molecular cloning of PP2Cη, a novel member of the protein phosphatase 2C family. Biochim. Biophys. Acta 1630: 130-137.
6. Kashiwaba, M., et al. 2003. A novel protein phosphatase 2C family member (PP2Cζ) is able to associate with ubiquitin conjugating enzyme 9. FEBS Lett. 538: 197-202.
7. Hearnes, J.M., et al. 2005. Chromatin immunoprecipitation-based screen to identify functional genomic binding sites for sequence-specific transactivators. Mol. Cell. Biol. 25: 10148-10158.
8. Lu, G. and Wang, Y. 2008. Functional diversity of mammalian type 2C protein phosphatase isoforms: new tales from an old family. Clin. Exp. Pharmacol. Physiol. 35: 107-112.


## CHROMOSOMAL LOCATION

Genetic locus: PPM1J (human) mapping to 1p13.2; Ppm1j (mouse) mapping to 3 F2.2.

## SOURCE

PP2Cζ (D-4) is a mouse monoclonal antibody raised against amino acids 431-475 mapping near the C-terminus of PP2Cζ of human origin.

## PRODUCT

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

## APPLICATIONS

PP2Cζ (D-4) is recommended for detection of PP2Cζ of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 PP2Cζ siRNA (h): sc-78774, PP2Cζ siRNA (m): sc-155945, PP2Cζ shRNA Plasmid (h): sc-78774-SH, PP2Cζ shRNA Plasmid (m): sc-155945-SH, PP2Cζ shRNA (h) Lentiviral Particles: sc-78774-V and PP2Cζ shRNA (m) Lentiviral Particles: sc-155945-V.

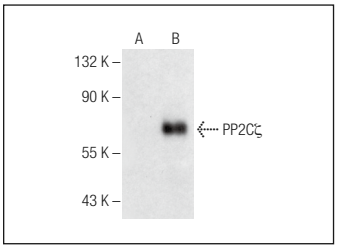
Molecular Weight of PP2Cζ isoforms: 55/33 kDa.

Positive Controls: PP2Cζ (h): 293T Lysate: sc-177765.

## 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




PP2Cζ (D-4): sc-390213. Western blot analysis of PP2Cζ expression in non-transfected: sc-117752 (**A**) and human PP2Cζ transfected: sc-177765 (**B**) 293T whole cell lysates.

## 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.

## PROTOCOLS

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