SANTA CRUZ BIOTECHNOLOGY, INC.

methyl-PP2A-Cα/β (2A10): sc-81603

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, PP2A-B56α and -B56β. Reversible carboxymethylation of the C-terminal leucine residue (Leu309) of the PP2A catalytic subunit (PP2A-Cα/β) *in vitro* has been shown to regulate catalytic activity. It has been suggested that this posttranslational modification may play a role in assembly of the holoenzyme.

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

methyl-PP2A-Cα/β (2A10) is a mouse monoclonal antibody raised against methylated C-terminal amino acids 302-309 of PP2A-C 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.

methyl-PP2A-Cα/β (2A10) is available conjugated to agarose (sc-81603 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-81603 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-81603 PE), fluorescein (sc-81603 FITC), Alexa Fluor® 488 (sc-81603 AF488), Alexa Fluor® 546 (sc-81603 AF546), Alexa Fluor® 594 (sc-81603 AF594) or Alexa Fluor® 647 (sc-81603 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-81603 AF680) or Alexa Fluor® 790 (sc-81603 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

methyl-PP2A-Cα/β (2A10) is recommended for detection of methylated PP2A-Cα and PP2A-Cβ of mouse, rat, human, chicken, *Drosophila melanogaster* and *S. cerevisiae* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

methyl-PP2A-Cα/β (T-19) is also recommended for detection of methylated PP2A-Cα and PP2A-Cβ in additional species, including rabbit and porcine.

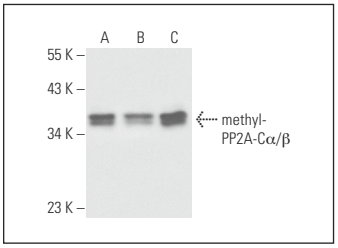
Molecular Weight of methyl-PP2A-Cα/β: 36 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201.

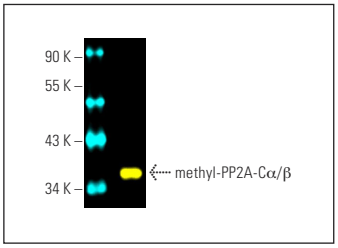
STORAGE

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

DATA



methyl-PP2A-Cα/β (2A10): sc-81603. Western blot analysis of methyl-PP2A-Cα/β expression in A-431 (**A**), NIH/3T3 (**B**) and 3T3-L1 (**C**) whole cell lysates.



methyl-PP2A-Cα/β (2A10) Alexa Fluor® 488: sc-81603 AF488. Direct fluorescent western blot analysis of methyl-PP2A-Cα/β expression in K-562 whole cell lysate. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker™ MW Tag-Alexa Fluor® 647: sc-516791.

SELECT PRODUCT CITATIONS

1. Sablina, A.A., et al. 2010. Identification of PP2A complexes and pathways involved in cell transformation. Cancer Res. 70: 10474-10484.
2. Kataya, A.R., et al. 2015. Protein phosphatase 2A holoenzyme is targeted to peroxisomes by piggybacking and positively affects peroxisomal β-oxidation. Plant Physiol. 167: 493-506.
3. 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.
4. Kitada, M., et al. 2020. Methionine abrogates the renoprotective effect of a low-protein diet against diabetic kidney disease in obese rats with type 2 diabetes. Aging 12: 4489-4505.
5. Bi, X., et al. 2021. CBP bromodomain inhibition rescues mice from lethal sepsis through blocking HMGB1-mediated Inflammatory responses. Front. Immunol. 11: 625542.
6. Wang, Y., et al. 2022. NNMT contributes to high metastasis of triple negative breast cancer by enhancing PP2A/MEK/ERK/c-Jun/ABCA1 pathway mediated membrane fluidity. Cancer Lett. 547: 215884.
7. Wang, M., et al. 2024. LincR-PPP2R5C regulates IL-1β ubiquitination in macrophages and promotes airway inflammation and emphysema in a murine model of COPD. Int. Immunopharmacol. 139: 112680.
8. Wu, X., et al. 2025. PRDX6 prevents NNMT ubiquitination and degradation as a nonenzymatic mechanism to promote ovarian cancer progression. Adv. Sci. 12: e2416484.

RESEARCH USE

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