SANTA CRUZ BIOTECHNOLOGY, INC.

# PP2A-Aα/β (A-5): sc-74580

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: PPP2R1A (human) mapping to 19q13.41, PPP2R1B (human) mapping to 11q23.1; Ppp2r1a (mouse) mapping to 17 A3.2, Ppp2r1b (mouse) mapping to 9 A5.3.

## SOURCE

PP2A-Aα/β (A-5) is a mouse monoclonal antibody raised against amino acids 290-589 mapping at the C-terminus of PP2A-Aα (protein phosphatase 2A regulatory subunit Aα) of human origin.

## PRODUCT

Each vial contains 200 µg $IgG_{2b}$ kappa light chain 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.

## PROTOCOLS

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

## APPLICATIONS

PP2A-Aα/β (A-5) is recommended for detection of PP2A-Aα and PP2A-Aβ 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).

Molecular Weight of PP2A-Aα: 55 kDa.

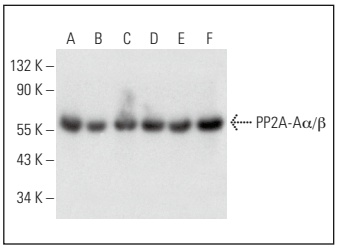
Molecular Weight of PP2A-Aβ: 65 kDa.

Positive Controls: H4 cell lysate: sc-2408, NIH/3T3 whole cell lysate: sc-2210 or Ramos cell lysate: sc-2216.

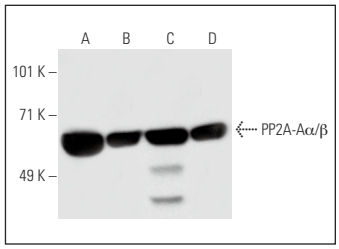
## RECOMMENDED SUPPORT REAGENTS

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-Aα/β (A-5): sc-74580. Western blot analysis of PP2A-Aα/β expression in Jurkat (**A**), Hep G2 (**B**), RAW 264.7 (**C**), P19 (**D**), PC-12 (**E**) and C6 (**F**) whole cell lysates.




PP2A-Aα/β (A-5): sc-74580. Western blot analysis of PP2A-Aα/β expression in KNRK (**A**), H4 (**B**), NIH/3T3 (**C**) and Ramos (**D**) whole cell lysates.

## SELECT PRODUCT CITATIONS


1. Homer, C.R., et al. 2012. A dual role for receptor-interacting protein kinase 2 (RIP2) kinase activity in nucleotide-binding oligomerization domain 2 (NOD2)-dependent autophagy. J. Biol. Chem. 287: 25565-25576.
2. Ranieri, A., et al. 2018. β-adrenergic regulation of cardiac type 2A protein phosphatase through phosphorylation of regulatory subunit B56δ at S573. J. Mol. Cell. Cardiol. 115: 20-31.
3. Puhl, S.L., et al. 2018. Role of type 2A phosphatase regulatory subunit B56α in regulating cardiac responses to β-adrenergic stimulation *in vivo*. Cardiovasc. Res. 294: 3419-3431.
4. Yang, J.W., et al. 2019. Dephosphorylation of human dopamine transporter at threonine 48 by protein phosphatase PP1/2A upregulates transport velocity. J. Biol. Chem. 294: 3419-3431.
5. Gergs, U., et al. 2019. Age-dependent protein expression of serine/threonine phosphatases and their inhibitors in the human cardiac atrium. Adv. Med. 2019: 2675972.


## RESEARCH USE

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