SANTA CRUZ BIOTECHNOLOGY, INC.

PP2A-Aα (6G3): sc-56954

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-B56-α and -B56-β.

REFERENCES

1. Ueki, K., et al. 1992. Structure and expression of two isoforms of the murine calmodulin-dependent protein phosphatase regulatory subunit (calcineurin B). Biochem. Biophys. Res. Commun. 187: 537-543.
2. Cohen, P.T. 1993. Important roles for novel protein phosphatases dephosphorylating serine and threonine residues. Biochem. Soc. Trans. 21: 884-888.
3. Mumby, M.C., et al. 1993. Protein serine/threonine phosphatases: structure, regulation, and functions in cell growth. Physiol. Rev. 73: 673-699.

CHROMOSOMAL LOCATION

Genetic locus: PPP2R1A (human) mapping to 19q13.41; Ppp2r1a (mouse) mapping to 17 A3.2.

SOURCE

PP2A-Aα (6G3) is a rat monoclonal antibody raised against PP2A-Aα of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PP2A-Aα (6G3) is available conjugated to agarose (sc-56954 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-56954 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-56954 PE), fluorescein (sc-56954 FITC), Alexa Fluor® 488 (sc-56954 AF488), Alexa Fluor® 546 (sc-56954 AF546), Alexa Fluor® 594 (sc-56954 AF594) or Alexa Fluor® 647 (sc-56954 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-56954 AF680) or Alexa Fluor® 790 (sc-56954 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

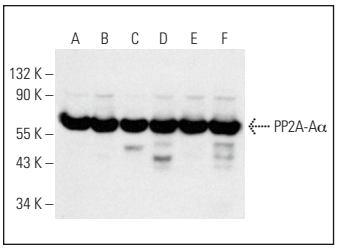
PP2A-Aα (6G3) is recommended for detection of PP2A-Aα of mouse, rat, human, *Xenopus* and bovine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for PP2A-Aα siRNA (h): sc-44033, PP2A-Aα siRNA (m): sc-39178, PP2A-Aα siRNA (r): sc-270192, PP2A-Aα shRNA Plasmid (h): sc-44033-SH, PP2A-Aα shRNA Plasmid (m): sc-39178-SH, PP2A-Aα shRNA Plasmid (r): sc-270192-SH, PP2A-Aα shRNA (h) Lentiviral Particles: sc-44033-V, PP2A-Aα shRNA (m) Lentiviral Particles: sc-39178-V and PP2A-Aα shRNA (r) Lentiviral Particles: sc-270192-V.

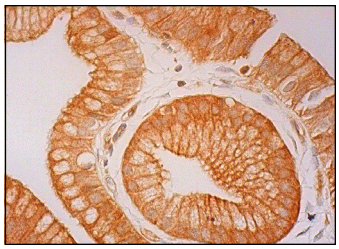
Molecular Weight of PP2A-Aα: 55 kDa.

Positive Controls: RAW 264.7 whole cell lysate: sc-2211, Ramos cell lysate: sc-2216 or Hep G2 cell lysate: sc-2227.

DATA



PP2A-Aα (6G3): sc-56954. Western blot analysis of PP2A-Aα expression in T-47D (**A**), Ramos (**B**), Hep G2 (**C**), RAW 264.7 (**D**), EOC 20 (**E**) and PC-12 (**F**) whole cell lysates.



PP2A-Aα (6G3): sc-56954. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing cytoplasmic and membrane staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Carmen Figueroa-Aldariz, M., et al. 2015. Protein phosphatase 2A is essential to maintain active Wnt signaling and its Aβ tumor suppressor subunit is not expressed in colon cancer cells. Mol. Carcinog. 54: 1430-1441.
2. Wu, J.H., et al. 2016. Molecular mechanisms supporting a pathogenic role for human polyomavirus 6 small T antigen: protein phosphatase 2A targeting and MAPK cascade activation. J. Med. Virol. 89: 742-747.
3. Cheerathodi, M., et al. 2021. Epstein-Barr virus LMP1 modulates the CD63 interactome. Viruses 13: 675.
4. Liu, H., et al. 2022. FBXL16 promotes endometrial progesterone resistance via $PP2A^{B55\alpha}$ /cyclin D1 axis in ishikawa. J. Immunol. Res. 2022: 7372202.
5. Cracco, P., et al. 2023. A novel resveratrol-induced pathway increases neuron-derived cell resilience against oxidative stress. Int. J. Mol. Sci. 24: 5903.

RESEARCH USE

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