SANTA CRUZ BIOTECHNOLOGY, INC.

PP2A-Aα/β (4G7): sc-13600

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 (4G7) is a mouse monoclonal antibody raised against a synthetic peptide corresponding to the N-teminal region of human PP2A-A.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PP2A-Aα/β (4G7) is available conjugated to agarose (sc-13600 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-13600 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13600 PE), fluorescein (sc-13600 FITC), Alexa Fluor® 488 (sc-13600 AF488), Alexa Fluor® 546 (sc-13600 AF546), Alexa Fluor® 594 (sc-13600 AF594) or Alexa Fluor® 647 (sc-13600 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-13600 AF680) or Alexa Fluor® 790 (sc-13600 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

PP2A-Aα/β (4G7) is recommended for detection of PP2A-Aα and PP2A-Aβ 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of PP2A-Aα: 55 kDa.

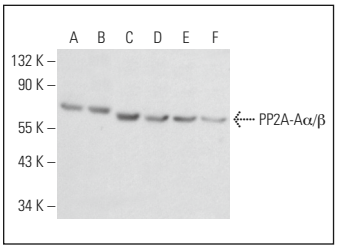
Molecular Weight of PP2A-Aβ: 65 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, T-47D cell lysate: sc-2293 or NIH/3T3 whole cell lysate: sc-2210.

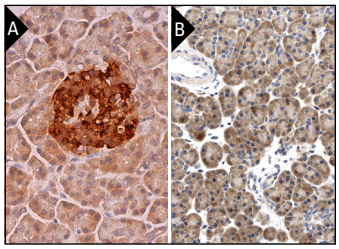
STORAGE

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

DATA



PP2A-Aα/β (4G7): sc-13600. Western blot analysis of PP2A-Aα/β expression in T-47D (**A**), Jurkat (**B**), P19 (**C**), NIH/3T3 (**D**), KNRK (**E**) and PC-12 (**F**) whole cell lysates.



PP2A-Aα/β (4G7): sc-13600. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of exocrine glandular cells and cytoplasmic and nuclear staining of Islets of Langerhans (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of exocrine glandular cells and islet cell. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**B**).

SELECT PRODUCT CITATIONS

1. Baroja, M.L., et al. 2002. Inhibition of CTLA-4 function by the regulatory subunit of serine/threonine phosphatase 2A. J. Immunol. 168: 5070-5078.
2. Trakhtenberg, E.F., et al. 2014. Regulating set-β's subcellular localization toggles its function between inhibiting and promoting axon growth and regeneration. J. Neurosci. 34: 7361-7374.
3. Juraszek, B. and Nafecz, K.A. 2016. Protein phosphatase PP2A—a novel interacting partner of carnitine transporter OCTN2 (SLC22A5) in rat astrocytes. J. Neurochem. 139: 537-551.
4. Göder, A., et al. 2018. HDAC1 and HDAC2 integrate checkpoint kinase phosphorylation and cell fate through the phosphatase-2A subunit PR130. Nat. Commun. 9: 764.
5. Petersen, C.H., et al. 2019. Possible predisposition for colorectal carcinogenesis due to altered gene expressions in normal appearing mucosa from patients with colorectal neoplasia. BMC Cancer 19: 643.
6. Kukreti, H. and Amuthavalli, K. 2020. MicroRNA-34a causes ceramide accumulation and effects Insulin signaling pathway by targeting ceramide kinase (CERK) in aging skeletal muscle. J. Cell. Biochem. 121: 3070-3089.
7. Abdelmeguid, N.E., et al. 2021. Combination of docosahexaenoic acid and *Ginko biloba* extract improves cognitive function and hippocampal tissue damages in a mouse model of Alzheimer's disease. J. Chem. Neuroanat. 116: 101995.
8. Yan, Q., et al. 2022. CTLA-4 facilitates DNA damage-induced apoptosis by interacting with PP2A. Front. Cell Dev. Biol. 10: 728771.

RESEARCH USE

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