

PP2A-B55- α (2G9): sc-81606

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 PP2A α and PP2A β . The PP2A catalytic subunit associates with a variety of regulatory subunits. The B family of regulatory subunits (including B55, B56 and PR72/130 subfamilies) is believed to participate in substrate specificity and catalytic activity. PP2A-B55, also known as PP2A regulatory subunit subfamily B55 or PP2A-B1, is a B subfamily consisting of four B55 isoforms (α , β , γ and δ) encoded by four distinct genes.

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. 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: PPP2R2A (human) mapping to 8p21.2; Ppp2r2a (mouse) mapping to 14 D1.

SOURCE

PP2A-B55- α (2G9) is a mouse monoclonal antibody raised against amino acids 398-411 of PP2A-B55 α of rat origin.

PRODUCT

Each vial contains 200 μ g IgG $_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PP2A-B55- α (2G9) is available conjugated to agarose (sc-81606 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-81606 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-81606 PE), fluorescein (sc-81606 FITC), Alexa Fluor[®] 488 (sc-81606 AF488), Alexa Fluor[®] 546 (sc-81606 AF546), Alexa Fluor[®] 594 (sc-81606 AF594) or Alexa Fluor[®] 647 (sc-81606 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-81606 AF680) or Alexa Fluor[®] 790 (sc-81606 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

PP2A-B55- α (2G9) is recommended for detection of PP2A-B55 α of mouse, rat, human, chicken and frog (*Xenopus laevis*) origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); also recommended for detection of PP2A-B55 δ of rat origin; may cross-react with PP2A-B55 β of human origin and weakly with PP2A-B55 γ of rabbit origin.

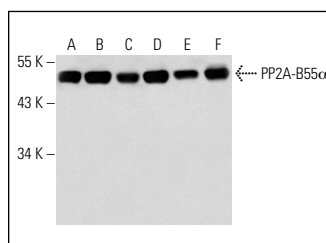
PP2A-B55- α (2G9) is also recommended for detection of PP2A-B55 α in additional species, including rabbit and porcine.

Suitable for use as control antibody for PP2A-B55- α siRNA (h): sc-39185, PP2A-B55- α siRNA (m): sc-39186, PP2A-B55- α siRNA (r): sc-270364, PP2A-B55- α shRNA Plasmid (h): sc-39185-SH, PP2A-B55- α shRNA Plasmid (m): sc-39186-SH, PP2A-B55- α shRNA Plasmid (r): sc-270364-SH, PP2A-B55- α shRNA (h) Lentiviral Particles: sc-39185-V, PP2A-B55- α shRNA (m) Lentiviral Particles: sc-39186-V and PP2A-B55- α shRNA (r) Lentiviral Particles: sc-270364-V.

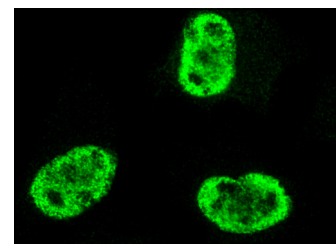
Molecular Weight of PP2A-B55- α : 55 kDa.

Positive Controls: rat liver extract: sc-2395, KNRK whole cell lysate: sc-2214 or PC-12 cell lysate: sc-2250.

DATA



PP2A-B55 α (2G9): sc-81606. Western blot analysis of PP2A-B55 α expression in NRK (A), KNRK (B), 804G (C), A-10 (D) and PC-12 (E) whole cell lysates and rat liver tissue extract (F).



PP2A-B55- α (2G9): sc-81606. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Jayadeva, G., et al. 2010. B55 α PP2A holoenzymes modulate the phosphorylation status of the retinoblastoma-related protein p107 and its activation. *J. Biol. Chem.* 285: 29863-29873.
2. Schüchler, S., et al. 2020. The Myc tag monoclonal antibody 9E10 displays highly variable epitope recognition dependent on neighboring sequence context. *Sci. Signal.* 13: eaax9730.
3. Alderman, C., et al. 2024. Biochemical characterization of the Eya and PP2A-B55 α interaction. *J. Biol. Chem.* 300: 107408.

RESEARCH USE

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