SANTA CRUZ BIOTECHNOLOGY, INC.

PP2A-B56-α (F-10): sc-271151

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-A-α and -A-β, PP2A-B-α and -B-β, PP2A-C-α and -C-β, PP2A-B56-α, -B56-β, -B56-γ and -B56-δ.

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.

CHROMOSOMAL LOCATION

Genetic locus: PPP2R5A (human) mapping to 1q32.3; Ppp2r5a (mouse) mapping to 1 H6.

SOURCE

PP2A-B56-α (F-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 459-486 at the C-terminus of PP2A-B56-α of human origin.

PRODUCT

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

PP2A-B56-α (F-10) is available conjugated to agarose (sc-271151 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271151 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271151 PE), fluorescein (sc-271151 FITC), Alexa Fluor® 488 (sc-271151 AF488), Alexa Fluor® 546 (sc-271151 AF546), Alexa Fluor® 594 (sc-271151 AF594) or Alexa Fluor® 647 (sc-271151 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271151 AF680) or Alexa Fluor® 790 (sc-271151 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271151 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

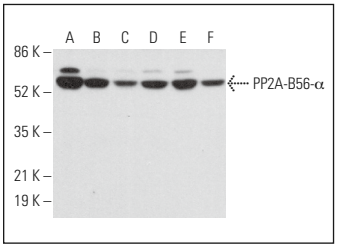
PP2A-B56-α (F-10) is recommended for detection of PP2A-B56-α of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PP2A-B56-α siRNA (h): sc-39181, PP2A-B56-α siRNA (m): sc-39182, PP2A-B56-α siRNA (r): sc-270367, PP2A-B56-α shRNA Plasmid (h): sc-39181-SH, PP2A-B56-α shRNA Plasmid (m): sc-39182-SH, PP2A-B56-α shRNA Plasmid (r): sc-270367-SH, PP2A-B56-α shRNA (h) Lentiviral Particles: sc-39181-V, PP2A-B56-α shRNA (m) Lentiviral Particles: sc-39182-V and PP2A-B56-α shRNA (r) Lentiviral Particles: sc-270367-V.

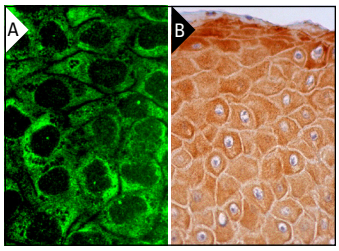
Molecular Weight of PP2A-B56-α: 56 kDa.

Positive Controls: SK-BR-3 cell lysate: sc-2218, MDA-MB-435S whole cell lysate: sc-364184 or HeLa whole cell lysate: sc-2200.

DATA



PP2A-B56-α (F-10): sc-271151. Western blot analysis of PP2A-B56-α expression in ZR-75-1 (**A**), SK-BR-3 (**B**), HeLa (**C**), MDA-MB-435S (**D**), Caco-2 (**E**) and U266 (**F**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



PP2A-B56-α (F-10): sc-271151. Immunofluorescence staining of formalin-fixed A-431 cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human oral mucosa tissue showing cytoplasmic staining of squamous epithelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Qin, R., et al. 2019. Exercise training reduces ventricular arrhythmias through restoring calcium handling and sympathetic tone in myocardial infarction mice. Physiol. Rep. 7: e13972.
2. Baumhardt, J.M., et al. 2020. Recognition of nuclear export signals by CRM1 carrying the oncogenic E571K mutation. Mol. Biol. Cell 31: 1879-1891.
3. Ripamonti, M., et al. 2022. A functional interaction between liprin-α1 and B56γ regulatory subunit of protein phosphatase 2A supports tumor cell motility. Commun. Biol. 5: 1025.

STORAGE

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