SANTA CRUZ BIOTECHNOLOGY, INC.

p-PP2A-Cα/β (F-8): sc-271903

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The catalytic subunit of protein phosphatase 2A (PP2A) is inactivated by *in vitro* phosphorylation of Tyr 307 by receptor and nonreceptor protein tyrosine kinases. The catalytic subunit of PP2A is phosphorylated by tyrosine-specific protein kinases and associates with a variety of regulatory subunits. Phosphorylation is enhanced in the presence of the phosphatase inhibitor okadaic acid, consistent with an autodephosphorylation reaction. Phosphorylation is catalyzed by p60v-Src, p56Lck, epidermal growth factor receptors and Insulin receptors. Transient deactivation of PP2A might enhance transmission of cellular signals through kinase cascades within cells. 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 cell division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the protein phosphatases.

CHROMOSOMAL LOCATION

Genetic locus: PPP2CA (human) mapping to 5q31.1, PPP2CB (human) mapping to 8p12; Ppp2ca (mouse) mapping to 11 B1.3, Ppp2cb (mouse) mapping to 8 A4.

SOURCE

p-PP2A-Cα/β (F-8) is a mouse monoclonal antibody raised against a short amino acid sequence containing Tyr 307 phosphorylated PP2A-Cα of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p-PP2A-Cα/β (F-8) is available conjugated to agarose (sc-271903 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271903 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271903 PE), fluorescein (sc-271903 FITC), Alexa Fluor® 488 (sc-271903 AF488), Alexa Fluor® 546 (sc-271903 AF546), Alexa Fluor® 594 (sc-271903 AF594) or Alexa Fluor® 647 (sc-271903 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271903 AF680) or Alexa Fluor® 790 (sc-271903 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271903 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

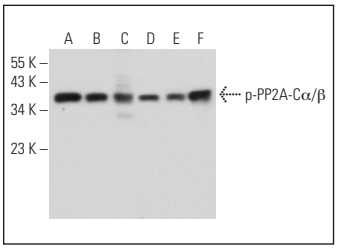
p-PP2A-Cα/β (F-8) is recommended for detection of Tyr 307 phosphorylated PP2A-C α and β isoforms of broad species origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting 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).

Molecular Weight of p-PP2A-Cα/β: 36 kDa.

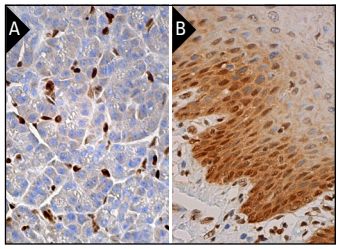
STORAGE

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

DATA



p-PP2A-Cα/β (F-8): sc-271903. Western blot analysis of PP2A-Cα/β phosphorylation in HeLa (**A**), IMR-32 (**B**), Jurkat (**C**), NIH/3T3 (**D**), EOC 20 (**E**) and C6 (**F**) whole cell lysates.



p-PP2A-Cα/β (F-8): sc-271903. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing nuclear staining of subset of glandular cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human esophagus tissue showing cytoplasmic and nuclear staining of squamous epithelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Woo, C.W., et al. 2012. Toll-like receptor activation suppresses ER stress factor CHOP and translation inhibition through activation of eIF2B. Nat. Cell Biol. 14: 192-200.
2. Majd, S., et al. 2016. Early glycogen synthase kinase-3β and protein phosphatase 2A independent Tau dephosphorylation during global brain ischaemia and reperfusion following cardiac arrest and the role of the adenosine monophosphate kinase pathway. Eur. J. Neurosci. 44: 1987-1997.
3. Mgrditchian, T., et al. 2017. Targeting autophagy inhibits melanoma growth by enhancing NK cells infiltration in a CCL5-dependent manner. Proc. Natl. Acad. Sci. USA 114: E9271-E9279.
4. Majd, S., et al. 2018. β estradiol and norepinephrine treatment of differentiated SH-SY5Y cells enhances Tau phosphorylation at (Ser^{396}) and (Ser^{262}) via AMPK but not mTOR signaling pathway. Mol. Cell. Neurosci. 88: 201-211.
5. De Palma, R.M., et al. 2019. The NMR-based characterization of the FTY720-SET complex reveals an alternative mechanism for the attenuation of the inhibitory SET-PP2A interaction. FASEB J. 33: 7647-7666.
6. Mazhar, S., et al. 2020. Challenges and reinterpretation of antibody-based research on phosphorylation of Tyr^{307} on PP2Ac. Cell Rep. 30: 3164-3170.e3.
7. Frohner, I.E., et al. 2020. $PP2A_C$ phospho-Tyr^{307} antibodies are not specific for this modification but are sensitive to other $PP2A_C$ modifications including Leu^{309} methylation. Cell Rep. 30: 3171-3182.e6.

RESEARCH USE

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