

# PP5 (H-7): sc-271816

## 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 subunit have been identified, designated PP1, PP2A, PP2B and PP2C. An additional protein phosphatase catalytic subunit, PPX (also known as PP4), is a putative member of a novel PP family. PP5, also designated protein phosphatase T (PP-T, PPP5C), a predominantly nuclear protein which belongs to the PPP phosphatase family and the PP-T subfamily, interacts with Cdc16 and Cdc27. It dephosphorylates serine residues of skeletal muscle phosphorylase and Histone H1 and may be involved in mitosis and RNA biogenesis regulation.

## REFERENCES

- Cohen, P.T. 1993. Important roles for novel protein phosphatases dephosphorylating serine and threonine residues. *Biochem. Soc. Trans.* 21: 884-888.
- Hendrix, P., et al. 1993. Structure and expression of a 72-kDa regulatory subunit of protein phosphatase 2A. Evidence for different size forms produced by alternative splicing. *J. Biol. Chem.* 268: 15267-15276.

## CHROMOSOMAL LOCATION

Genetic locus: PPP5C (human) mapping to 19q13.32; Ppp5c (mouse) mapping to 7 A2.

## SOURCE

PP5 (H-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 463-490 at the C-terminus of Serine/Threonine Protein Phosphatase 5 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PP5 (H-7) is available conjugated to agarose (sc-271816 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271816 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271816 PE), fluorescein (sc-271816 FITC), Alexa Fluor® 488 (sc-271816 AF488), Alexa Fluor® 546 (sc-271816 AF546), Alexa Fluor® 594 (sc-271816 AF594) or Alexa Fluor® 647 (sc-271816 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271816 AF680) or Alexa Fluor® 790 (sc-271816 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271816 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

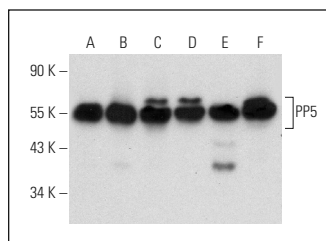
PP5 (H-7) is recommended for detection of PP5 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PP5 siRNA (h): sc-44602, PP5 siRNA (m): sc-44603, PP5 shRNA Plasmid (h): sc-44602-SH, PP5 shRNA Plasmid (m): sc-44603-SH, PP5 shRNA (h) Lentiviral Particles: sc-44602-V and PP5 shRNA (m) Lentiviral Particles: sc-44603-V.

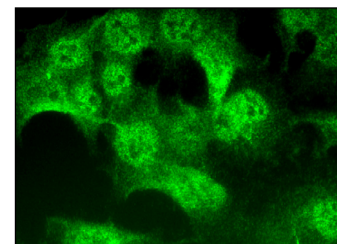
Molecular Weight of PP5: 57 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, HT-29 whole cell lysate: sc-364232 or Neuro-2A whole cell lysate: sc-364185.

## DATA



PP5 (H-7): sc-271816. Western blot analysis of PP5 expression in Hep G2 (A), HT-29 (B), Neuro-2A (C), EOC 20 (D), C6 (E) and KNRK (F) whole cell lysates.



PP5 (H-7): sc-271816. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear and cytoplasmic localization.

## SELECT PRODUCT CITATIONS

- Hsieh, F.S., et al. 2017. Palbociclib induces activation of AMPK and inhibits hepatocellular carcinoma in a CDK4/6-independent manner. *Mol. Oncol.* 11: 1035-1049.
- Hu, M.H., et al. 2018. Serine/threonine protein phosphatase 5 is a potential therapeutic target in cholangiocarcinoma. *Liver Int.* 38: 2248-2259.
- Chen, X., et al. 2020. Metformin attenuates cadmium-induced neuronal apoptosis *in vitro* via blocking ROS-dependent PP5/AMPK-JNK signaling pathway. *Neuropharmacology* 175: 108065.
- Pang, J.L., et al. 2021. Sodium cantharidate induces apoptosis in breast cancer cells by regulating energy metabolism via the protein phosphatase 5-p53 axis. *Toxicol. Appl. Pharmacol.* 20: 6066.
- Wang, C., et al. 2023. PFO5DoDA disrupts hepatic homeostasis primarily through glucocorticoid signaling inhibition. *J. Hazard. Mater.* 447: 130831.

## STORAGE

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

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