

PP5 (F-8): sc-271613

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

1. Cohen, P.T. 1993. Important roles for novel protein phosphatases dephosphorylating serine and threonine residues. *Biochem. Soc. Trans.* 21: 884-888.
2. 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.
3. Mumby, M.C., et al. 1993. Protein serine/threonine phosphatases: structure, regulation, and functions in cell growth. *Physiol. Rev.* 73: 673-699.
4. Okubo, S., et al. 1994. A regulatory subunit of smooth muscle myosin bound phosphatase. *Biochem. Biophys. Res. Commun.* 200: 429-434.
5. Wera, S., et al. 1995. Serine/threonine protein phosphatases. *Biochem. J.* 311: 17-29.
6. Xu, X., et al. 1996. Chromosomal localization and 5' sequence of the human protein serine/threonine phosphatase 5' gene. *Biochem. Biophys. Res. Commun.* 218: 514-517.

CHROMOSOMAL LOCATION

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

SOURCE

PP5 (F-8) is a mouse monoclonal antibody raised against amino acids 71-240 mapping near the N-terminus of Serine/Threonine Protein Phosphatase 5 of human origin.

PRODUCT

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

STORAGE

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

APPLICATIONS

PP5 (F-8) 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), 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 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.

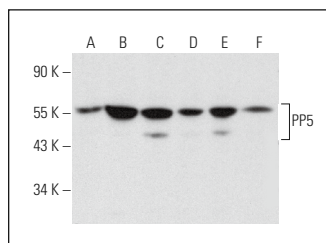
Molecular Weight of PP5: 57 kDa.

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

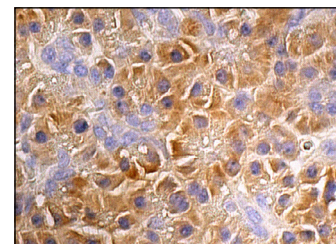
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



PP5 (F-8): sc-271613. Western blot analysis of PP5 expression in Hep G2 (A), HT-29 (B), Neuro-2A (C), EOC 20 (D), PC-12 (E) and C6 (F) whole cell lysates.



PP5 (F-8): sc-271613. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of Islets of Langerhans and glandular cells.

SELECT PRODUCT CITATIONS

1. Liu, C., et al. 2015. Resveratrol prevents cadmium activation of Erk1/2 and JNK pathways from neuronal cell death via protein phosphatases 2A and 5. *J. Neurochem.* 135: 466-478.

RESEARCH USE

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