

IPP-2 (70.5): sc-130392

BACKGROUND

Two inhibitors of protein phosphatase 1 (PP1) include the phosphatase inhibitor 1 (IPP-1) and phosphatase inhibitor 2 (IPP-2). IPP-2, also known as I-2, interacts with the catalytic subunit of PP1 to form the heterodimer PP1I. The PP1I complex is present in the cytosol of cells in a broad range of vertebrate and invertebrate species. Although the heterodimer itself is inactive, a reversible phosphorylation of IPP-2 at Thr 72 by glycogen-synthase-kinase (GSK3) initiates activation of the heterodimer complex *in vitro*. Phosphorylation of IPP-2 by casein kinase-II at Ser 86, Ser 120, and Ser 121 enhances the rate of phosphorylation by GSK3 at Thr 72 and effectively activates the heterodimer complex. Besides moderating PP1 activity, IPP-2 may play a role as a chaperone for the correct folding of PP1. The gene for human IPP-2 maps to chromosome 3q29 in the major histocompatibility complex region.

REFERENCES

- Huang, F.L. and Glinsmann, W.H. 1976. Separation and characterization of two phosphorylase phosphatase inhibitors from rabbit skeletal muscle. *Eur. J. Biochem.* 70: 419-426.
- DePaoli-Roach, A.A. 1984. Synergistic phosphorylation and activation of ATP-Mg dependent phosphoprotein phosphatase by Ta/65K-3 and casein kinase II (PC0.7). *J. Biol. Chem.* 259: 12144-12152.
- Holmes, C.F.B., Kuret, J., Chisholm, A.A.K. and Cohen, P. 1986. Identification of the sites on rabbit skeletal muscle protein phosphatase inhibitor-2 phosphorylated by casein kinase II. *Biochim. Biophys. Acta* 870: 408-416.
- Orgad, S., Dudai, Y. and Cohen, P. 1987. The protein phosphatases of *Drosophila melanogaster* and their inhibitors. *Eur. J. Biochem.* 164: 31-38.
- Pondaven, P. and Cohen, P. 1987. Identification of protein phosphatases-1 and 2A and inhibitor-2 in oocytes of the starfish *Asterias rubens* and *Marthasterias glacialis*. *Eur. J. Biochem.* 167: 135-140.
- Holmes, C.F.B., Tonks, N.K., Major, H. and Cohen, P. 1987. Analysis of the *in vivo* phosphorylation state of protein phosphatase inhibitor-2 from rabbit skeletal muscle by fast-atom bombardment mass spectroscopy. *Biochim. Biophys. Acta* 929: 208-219.

CHROMOSOMAL LOCATION

Genetic locus: PPP1R2 (human) mapping to 3q29; Ppp1r2 (mouse) mapping to 16 B2.

SOURCE

IPP-2 (70.5) is a mouse monoclonal antibody raised against recombinant IPP-2 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} 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

IPP-2 (70.5) is recommended for detection of IPP-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for IPP-2 siRNA (h): sc-105581, IPP-2 siRNA (m): sc-146263, IPP-2 shRNA Plasmid (h): sc-105581-SH, IPP-2 shRNA Plasmid (m): sc-146263-SH, IPP-2 shRNA (h) Lentiviral Particles: sc-105581-V and IPP-2 shRNA (m) Lentiviral Particles: sc-146263-V.

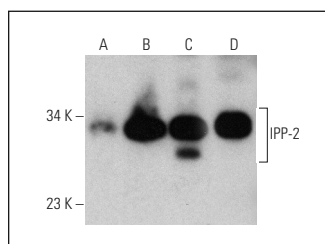
Molecular Weight of IPP-2: 31 kDa.

Positive Controls: Raji whole cell lysate: sc-364236, NIH/3T3 whole cell lysate: sc-2210 or mouse skeletal muscle extract: sc-364250.

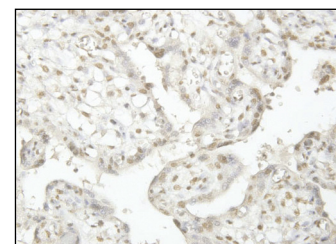
RECOMMENDED SUPPORT REAGENTS

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



IPP-2 (70.5): sc-130392. Western blot analysis of IPP-2 expression in Raji (A), NIH/3T3 (B) and RAT2 (C) whole cell lysates and mouse skeletal muscle tissue extract (D).



IPP-2 (70.5): sc-130392. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human placenta tissue showing nuclear localization.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.