SANTA CRUZ BIOTECHNOLOGY, INC.

p-IPP-1 (Ser 67): sc-14268

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Protein phosphatase inhibitor-1 (also designated inhibitor of protein phosphatase 1, IPP-1 and I-1) plays a role in regulating the phosphorylation of other proteins, and is itself phosphorylated by a cyclic AMP-dependent protein kinase at Threonine 35. In addition, the proline-directed kinases Cdk1, Cdk5, and mitogen-activated protein kinase (MAPK) mediate *in vitro* phosphorylation of IPP-1 at the phylogenetically conserved position Serine 67. In striatal tissues, glutamate-dependent regulation of N-methyl-δ-aspartic acid-type channels influences IPP-1 phosphorylation at Ser 67. The localization and expression of IPP-1 suggests that it may play discrete roles in certain regions and developing stages of the brain, independent of the regulation of protein phosphatase type 1 (PP-1). PP-1 binds to both phosphorylated and dephosphorylated IPP-1. Conversion of PP-1 to a Mn^{2+}-dependent state appears to play a role in its regulation by IPP-1. IPP-1 attenuates the activity of glycogen phosphorylase and is thought to be important in the hormonal control of glycogen metabolism. The human IPP-1 gene maps to chromosome 12q13.2 and encodes a mediator of cross-talk between several protein kinases and protein phosphatases.

REFERENCES

1. Aitken, A., Bilham, T. and Cohen, P. 1982. Complete primary structure of protein phosphatase inhibitor-1 from rabbit skeletal muscle. Eur. J. Biochem. 126: 235-246.
2. Mikkelsen, J.D. and Gustafson, E.L. 1993. Distribution of phosphatase inhibitor-1-immunoreactive neurons in the suprachiasmatic nucleus of the *Syrian hamster.* Brain Res. 623: 147-154.
3. Sakagami, H., Ebina, K. and Kondo, H. 1994. Localization of phosphatase inhibitor-1 mRNA in the developing and adult rat brain in comparison with that of protein phosphatase-1 mRNAs. Brain Res. Mol. Brain Res. 25: 7-18.

CHROMOSOMAL LOCATION

Genetic locus: PPP1R1A (human) mapping to 12q13.2; Ppp1r1a (mouse) mapping to 15 F3.

SOURCE

p-IPP-1 (Ser 67) is available as either goat (sc-14268) or rabbit (sc-14268-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing Ser 67 phosphorylated IPP-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-14268 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

p-IPP-1 (Ser 67) is recommended for detection of Ser 67 phosphorylated IPP-1 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), 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).

p-IPP-1 (Ser 67) is also recommended for detection of correspondingly phosphorylated IPP-1 in additional species, including equine and canine.

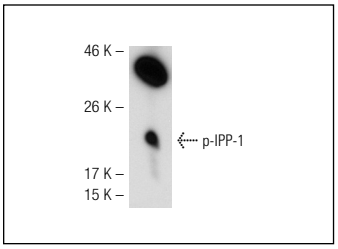
Suitable for use as control antibody for IPP-1 siRNA (h): sc-45873, IPP-1 siRNA (m): sc-45874, IPP-1 shRNA Plasmid (h): sc-45873-SH, IPP-1 shRNA Plasmid (m): sc-45874-SH, IPP-1 shRNA (h) Lentiviral Particles: sc-45873-V and IPP-1 shRNA (m) Lentiviral Particles: sc-45874-V.

Positive Controls: rat skeletal muscle extract: sc-364810.

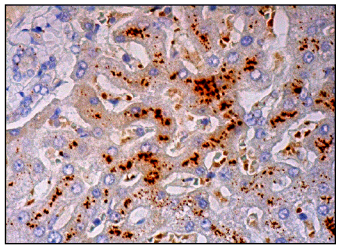
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: for goat primary antibody (sc-14268): use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), for rabbit primary antibody (sc-14268-R): use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: for goat primary antibody (sc-14268): use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941, for rabbit primary antibody (sc-14268-R): use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



p-IPP-1 (Ser 67)-R: sc-14268-R. Western blot analysis of IPP-1 phosphorylation in rat skeletal muscle tissue extract.



p-IPP-1 (Ser 67): sc-14268. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes.

RESEARCH USE

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