

PDP2 (L-16): sc-160653

BACKGROUND

Pyruvate dehydrogenase phosphatase (PDP) is a serine phosphatase that catalyzes the dephosphorylation and reactivation of the α subunit of the E1 component of the mitochondrial pyruvate dehydrogenase multienzyme complex. PDP is a heterodimer that consists of catalytic and regulatory subunits. PDP2 (pyruvate dehydrogenase phosphatase catalytic subunit 2), also known as PPM2C2, is a 529 amino acid mitochondrial matrix protein belonging to the PP2c family. Utilizing two magnesium ions as cofactors, PDP2 catalyzes the dephosphorylation and concomitant reactivation of the α subunit of the E1 component of the pyruvate dehydrogenase complex. PDP2 exists as a heterodimer containing a PDP2c catalytic subunit and a FAD protein of unknown function. PDP2 is encoded by a gene located on human chromosome 16, which is associated with a variety of genetic disorders, encodes over 900 genes and comprises nearly 3% of the human genome.

REFERENCES

1. Patel, M.S. and Korotchkina, L.G. 2001. Regulation of mammalian pyruvate dehydrogenase complex by phosphorylation: complexity of multiple phosphorylation sites and kinases. *Exp. Mol. Med.* 33: 191-197.
2. Karpova, T., et al. 2003. Characterization of the isozymes of pyruvate dehydrogenase phosphatase: implications for the regulation of pyruvate dehydrogenase activity. *Biochim. Biophys. Acta* 1652: 126-135.
3. Karpova, T., et al. 2004. Probing a putative active site of the catalytic subunit of pyruvate dehydrogenase phosphatase 1 (PDP1c) by site-directed mutagenesis. *Biochim. Biophys. Acta* 1700: 43-51.
4. Maj, M.C., et al. 2005. Pyruvate dehydrogenase phosphatase deficiency: identification of the first mutation in two brothers and restoration of activity by protein complementation. *J. Clin. Endocrinol. Metab.* 90: 4101-4107.
5. Cameron, J.M., et al. 2007. Identification of a canine model of pyruvate dehydrogenase phosphatase 1 deficiency. *Mol. Genet. Metab.* 90: 15-23.

CHROMOSOMAL LOCATION

Genetic locus: PDP2 (human) mapping to 16q22.1; Pdp2 (mouse) mapping to 8 D3.

SOURCE

PDP2 (L-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PDP2 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-160653 P, (100 μ g 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

PDP2 (L-16) is recommended for detection of PDP2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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); non cross-reactive with PDPc or PDPr.

PDP2 (L-16) is also recommended for detection of PDP2 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for PDP2 siRNA (h): sc-93197, PDP2 siRNA (m): sc-152140, PDP2 shRNA Plasmid (h): sc-93197-SH, PDP2 shRNA Plasmid (m): sc-152140-SH, PDP2 shRNA (h) Lentiviral Particles: sc-93197-V and PDP2 shRNA (m) Lentiviral Particles: sc-152140-V.

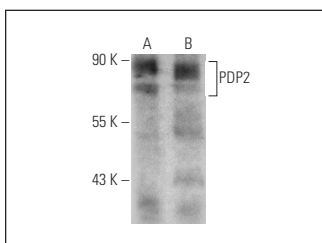
Molecular Weight of PDP2: 60 kDa.

Positive Controls: mouse brain extract: sc-2253 or mouse testis extract: sc-2405.

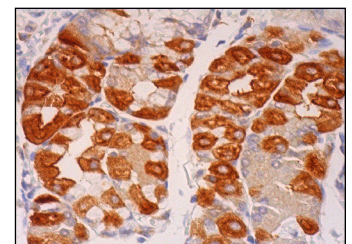
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: 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), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



PDP2 (L-16): sc-160653. Western blot analysis of PDP2 expression in mouse testis (A) and mouse brain (B) tissue extracts.



PDP2 (L-16): sc-160653. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lower stomach tissue showing cytoplasmic staining of glandular cells.

RESEARCH USE

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