

# PDHA2 (P-12): sc-103809

## BACKGROUND

The pyruvate dehydrogenase (PDH) complex is a nuclear-encoded mitochondrial matrix enzyme complex that functions as the primary link between glycolysis and the tricarboxylic acid (TCA) cycle by catalyzing the irreversible conversion of pyruvate into acetyl-CoA, an essential step in aerobic glucose metabolism. PDHA2 (pyruvate dehydrogenase  $\alpha$  2), also known as PDHAL, is a 388 amino acid mitochondrial matrix protein expressed in postmeiotic spermatogenic cells. Composed of a tetramer containing two  $\alpha$  and two  $\beta$  subunits, PDHA2 consists multiple copies of three enzymatic components: pyruvate dehydrogenase (E1), dihydrolipoamide acetyltransferase (E2) and lipoamide dehydrogenase (E3). PDHA2 is suggested to participate in cell proliferation and may be involved in prostate cancer. PDHA2 is encoded by a gene located on human chromosome 4, which encodes nearly 6% of the human genome and has the largest gene deserts (regions of the genome with no protein encoding genes) of all of the human chromosomes.

## REFERENCES

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- Kumar, V., et al. 2006. Activity of pyruvate dehydrogenase A (PDHA) in hamster spermatozoa correlates positively with hyperactivation and is associated with sperm capacitation. *Biol. Reprod.* 75: 767-777.
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## CHROMOSOMAL LOCATION

Genetic locus: PDHA2 (human) mapping to 4q22.3; Pdha2 (mouse) mapping to 3 H1.

## SOURCE

PDHA2 (P-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PDHA2 of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-103809 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

PDHA2 (P-12) is recommended for detection of PDHA2 of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 PDHA2 siRNA (h): sc-89026, PDHA2 siRNA (m): sc-106393, PDHA2 shRNA Plasmid (h): sc-89026-SH, PDHA2 shRNA Plasmid (m): sc-106393-SH, PDHA2 shRNA (h) Lentiviral Particles: sc-89026-V and PDHA2 shRNA (m) Lentiviral Particles: sc-106393-V.

Molecular Weight of PDHA2: 41 kDa.

Positive Controls: 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<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) 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<sup>™</sup> Mounting Medium: sc-24941.

## STORAGE

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

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.