

PDH-E1 β (17A5): sc-65243

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. The E1 enzyme of the PDH complex is made up of a heterotetramer of two α and two β subunits. The E1 α subunit (PDH-E1 α) contains the E1 active site and plays a key role in the function of the PDH complex. The PDH complex is regulated by phosphorylation and dephosphorylation of PDH-E1 α . The E1- β subunit (PDH-E1 β) functions as a checkpoint for stage II-III of bacterial sporulation. Pyruvate dehydrogenase deficiency in individuals is attributed to the absence of functional PDH-E1 β .

REFERENCES

- Sermon, K., et al. 1990. Characterisation of a cDNA for porcine PDH-E1 α and comparison with the human cDNA. *Nucleic Acids Res.* 18: 4925.
- Chun, K., et al. 1991. Pyruvate dehydrogenase deficiency due to a 20-bp deletion in exon II of the pyruvate dehydrogenase (PDH) E1 α gene. *Am. J. Hum. Genet.* 49: 414-420.
- Chun, K., et al. 1993. Mutations in the X-linked E1 α subunit of pyruvate dehydrogenase leading to deficiency of the pyruvate dehydrogenase complex. *Hum. Mol. Genet.* 2: 449-454.
- Hansen, L.L., et al. 1994. Pyruvate dehydrogenase deficiency caused by a 33 base pair duplication in the PDH-E1 α subunit. *Hum. Mol. Genet.* 3: 1021-1022.
- Brown, G.K., et al. 1995. Pyruvate dehydrogenase deficiency. *J. Med. Genet.* 31: 875-879.
- Otero, L.J., et al. 1996. Association of cerebral dysgenesis and lactic acidemia with x-linked PDH-E1 α subunit mutations in females. *Pediatr. Neurol.* 13: 327-332.
- Neveling, U., et al. 1999. Exceptional characteristics of heterotetrameric (a2 b2) E1p of the pyruvate dehydrogenase complex from *Zymomonas mobilis*: expression from an own promoter and a lipoyl domain in E1b. *FEMS Microbiol. Lett.* 177: 117-121.

CHROMOSOMAL LOCATION

Genetic locus: PDHB (human) mapping to 3p14.3; Pdhb (mouse) mapping to 14 A1.

SOURCE

PDH-E1 β (17A5) is a mouse monoclonal antibody raised against PDH-E1 β .

PRODUCT

Each vial contains 100 μ g IgG₁ 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

PDH-E1 β (17A5) is recommended for detection of PDH-E1 β 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for PDH-E1 β siRNA (h): sc-77999, PDH-E1 β siRNA (m): sc-152135, PDH-E1 β shRNA Plasmid (h): sc-77999-SH, PDH-E1 β shRNA Plasmid (m): sc-152135-SH, PDH-E1 β shRNA (h) Lentiviral Particles: sc-77999-V and PDH-E1 β shRNA (m) Lentiviral Particles: sc-152135-V.

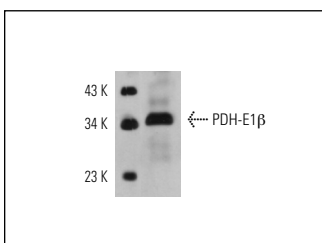
Molecular Weight of PDH-E1 β : 39 kDa.

Positive Controls: mouse heart extract: sc-2254.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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 goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



PDH-E1 β (17A5): sc-65243. Western blot analysis of PDH-E1 β expression in mouse heart tissue extract.

SELECT PRODUCT CITATIONS

- Ijiri, T.W., et al. 2011. Identification and validation of mouse sperm proteins correlated with epididymal maturation. *Proteomics* 11: 4047-4062.

RESEARCH USE

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

PROTOCOLS

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