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PDHA1 Monoclonal Antibody (8D10E6)

Catalog Number 45-6600

Product data sheet

Details	
Size	100 µg
Host/Isotope	Mouse / IgG1, kappa
Class	Monoclonal
Type	Antibody
Clone	8D10E6
Immunogen	Human recombinant PDH-E1-alpha
Conjugate	Unconjugated
Form	Liquid
Concentration	1 mg/mL
Purification	IgG fraction
Storage buffer	HEPES buffered saline
Contains	0.02% sodium azide
Storage Conditions	4° C, do not freeze

Species Reactivity	
Species reactivity	Bovine, Fruit fly, Human, Mouse, Rat
Published species	Mouse, Human, Not Applicable

Tested Applications	Dilution *
Flow Cytometry (Flow)	1 µg/mL
Western Blot (WB)	0.5-1.0 µg/mL
Immunocytochemistry (ICC/IF)	1 µg/mL

Published Applications	
Western Blot (WB)	See 1 publications below
Immunohistochemistry (IHC)	See 1 publications below

* Suggested working dilutions are given as a guide only. It is recommended that the user titrate the product for use in their own experiment using appropriate negative and positive controls.

Product specific information

When performing ICC and IF heat-induced antigen-retrieval improves signal. When performing Flow Cytometry Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody. Positive Control: WB: Isolated mitochondria from human, bovine, rat and mouse heart. HepG2 (human liver hepatocellular carcinoma cell line) cell lysate. FACS: HeLa (human epithelial cell line from cervix adenocarcinoma) and HL-60 (human promyelocytic leukemia cell line) cells.

Background/Target Information

The pyruvate dehydrogenase (PDH) complex is a nuclear-encoded mitochondrial multienzyme complex that catalyzes the overall conversion of pyruvate to acetyl-CoA and CO(2), and provides the primary link between glycolysis and the tricarboxylic acid (TCA) cycle. The PDH complex is composed of multiple copies of three enzymatic components: pyruvate dehydrogenase (E1), dihydrolipoamide acetyltransferase (E2) and lipoamide dehydrogenase (E3). The E1 enzyme is a heterotetramer of two alpha and two beta subunits. This gene encodes the E1 alpha 1 subunit containing the E1 active site, and plays a key role in the function of the PDH complex. Mutations in this gene are associated with pyruvate dehydrogenase E1-alpha deficiency and X-linked Leigh syndrome. Alternatively spliced transcript variants encoding different isoforms have been found for this gene.

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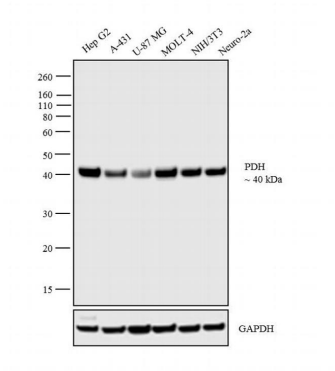
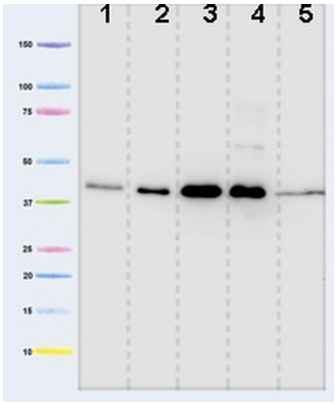
Product Images For PDHA1 Monoclonal Antibody (8D10E6)



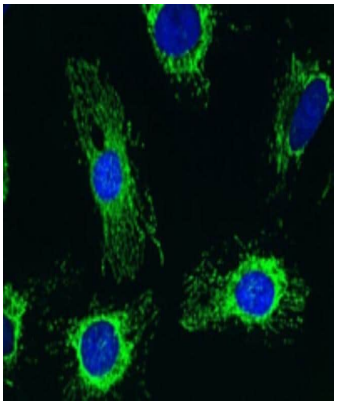
PDHA1 Antibody (45-6600) in WB

Western blot analysis was performed on whole cell extracts (30 µg lysate) of Hep G2 (Lane 1), A-431 (Lane 2), U-87 MG (Lane 3), MOLT-4 (Lane 4), NIH/3T3 (Lane 5) and Neuro-2a (Lane 6). The blot was probed with Anti-PDH Monoclonal Antibody (Product # 45-6600, 1 µg/mL) and detected by chemiluminescence using Goat anti-Mouse IgG (H+L) Superclonal™ Secondary Antibody, HRP conjugate (Product # A28177, 0.25 µg/mL, 1:4000 dilution). A 40 kDa band corresponding to PDH was observed across the cell lines tested.



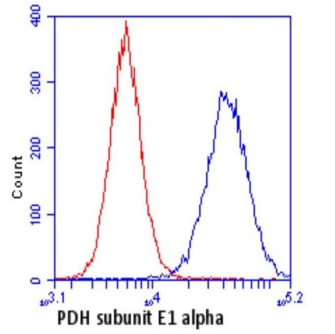
PDHA1 Antibody (45-6600) in WB

Western blot analysis of PDH in heart mitochondria extracts using a PDH Monoclonal antibody (Product # 45-6600) at a concentration of 1 µg/mL. Lane 1: Isolated mitochondria from human heart at 5 µg, Lane 2: Isolated mitochondria from bovine heart at 1 µg, Lane 3: Isolated mitochondria from rat heart at 10 µg, Lane 4: Isolated mitochondria from mouse heart at 10 µg, Lane 5: HepG2 cell lysate at 20 µg. Predicted band size: 43 kDa.



PDHA1 Antibody (45-6600) in ICC/IF

Immunofluorescent analysis of PDH in HeLa cells using a PDH Monoclonal antibody (Product # 45-6600) at 1 µg/mL. Samples were fixed with 4% paraformaldehyde and permeabilized with Triton X-100. The secondary antibody was Alexa Fluor® 488 goat anti-mouse IgG (H+L) used at a 1/1000 dilution, seen in green. DAPI was used to stain the cell nuclei as seen in blue.



PDHA1 Antibody (45-6600) in Flow

Flow cytometric analysis of PDH in HL-60 cells using a PDH Monoclonal antibody (Product # 45-6600) at 1 µg/mL, as seen in blue. Isotype control antibody as seen in red.

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PubMed References For PDHA1 Monoclonal Antibody (8D10E6)

1 Western Blot References

Species / Dilution	Summary
	45-6600 was used in Western Blot to suggest the existence of a synaptic activity-mediated neuronal Warburg effect that may promote mitochondrial homeostasis and neuroprotection.
Human / 1:10000	The Journal of biological chemistry (2017; 292: 5183) **"Synaptic Activity Drives a Genomic Program That Promotes a Neuronal Warburg Effect."** Author(s):Bas-Orth C,Tan YW,Lau D,Bading H PubMed Article URL:http://dx.doi.org/10.1074/jbc.M116.761106

1 Immunohistochemistry References

Species / Dilution	Summary
	45-6600 was used in Immunohistochemistry-immunofluorescence to suggest that the neuronal MCU is crucial for the generation of network rhythms, most likely by influences on oxidative phosphorylation and perhaps by controlling cytoplasmic Ca2+ homeostasis.
Mouse / 1:2000	Journal of cerebral blood flow and metabolism : official journal of the International Society of Cerebral Blood Flow and Metabolism (2020; 40: 2225) **"The mitochondrial calcium uniporter is crucial for the generation of fast cortical network rhythms."** Author(s):Bas-Orth C,Schneider J,Lewen A,McQueen J,Hasenpusch-Theil K,Theil T,Hardingham GE,Bading H,Kann O PubMed Article URL:http://dx.doi.org/10.1177/0271678X19887777

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