

PDHA1 Monoclonal Antibody (8D10E6)

Catalog Number45-6600

Product data sheet

Details		Species Reactivity	
Size	100 µg	Species reactivity	Bovine, Fruit fly, Human, Mouse, Rat
Host/Isotope	Mouse / IgG1, kappa	Published species	Mouse, Human, Not Applicable
Class	Monoclonal	Tested Applications	
Type	Antibody	Flow Cytometry (Flow)	Dilution *1 µg/mL
Clone	8D10E6	Western Blot (WB)	0.5-1.0 µg/mL
Immunogen	Human recombinant PDH-E1-alpha	Immunocytochemistry (ICC/IF)	1 µg/mL
Conjugate	Unconjugated	Published Applications	
Form	Liquid	Western Blot (WB)	See 1 publications below
Concentration	1 mg/mL	Immunohistochemistry (IHC)	See 1 publications below
Purification	IgG fraction	* 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.	
Storage buffer	HEPES buffered saline		
Contains	0.02% sodium azide		
Storage Conditions	4° C, do not freeze		

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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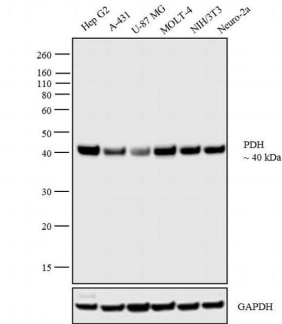
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Product Images For PDHA1 Monoclonal Antibody (8D10E6)

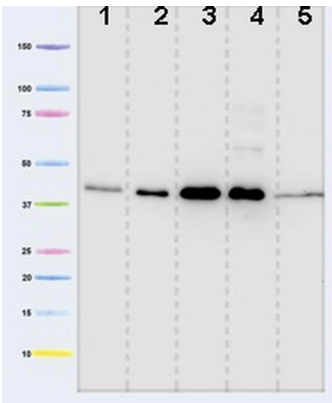
PDHA1 Antibody (45-6600) in WB

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.



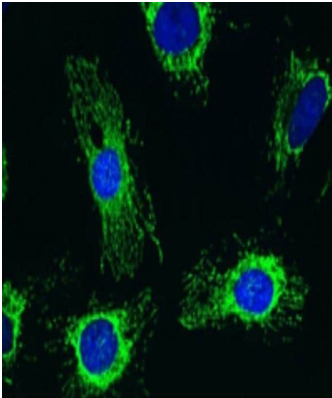
PDHA1 Antibody (45-6600) in WB

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.



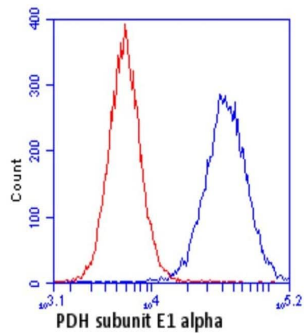
PDHA1 Antibody (45-6600) in ICC/IF

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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