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ATP5A1 Monoclonal Antibody (15H4C4)

Catalog Number 43-9800

Product data sheet

Details	
Size	100 µg
Host/Isotope	Mouse / IgG2b, kappa
Class	Monoclonal
Type	Antibody
Clone	15H4C4
Immunogen	Bovine Complex V
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

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

Tested Applications	Dilution *
Flow Cytometry (Flow)	1 µg/mL
Immunohistochemistry (IHC)	1 µg/mL
Western Blot (WB)	1.0 µg/mL
Immunocytochemistry (ICC/IF)	1-2 µg/mL

Published Applications	
Immunohistochemistry (IHC)	See 1 publications below
Western Blot (WB)	See 7 publications below
Miscellaneous PubMed (Misc)	See 1 publications below
Immunoprecipitation (IP)	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 IHC use heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol. Positive control: Human, bovine, mouse and rat heart mitochondria.

Background/Target Information

This gene encodes a subunit of mitochondrial ATP synthase. Mitochondrial ATP synthase catalyzes ATP synthesis, using an electrochemical gradient of protons across the inner membrane during oxidative phosphorylation. ATP synthase is composed of two linked multi-subunit complexes: the soluble catalytic core, F1, and the membrane-spanning component, Fo, comprising the proton channel. The catalytic portion of mitochondrial ATP synthase consists of 5 different subunits (alpha, beta, gamma, delta, and epsilon) assembled with a stoichiometry of 3 alpha, 3 beta, and a single representative of the other 3. The proton channel consists of three main subunits (a, b, c). This gene encodes the alpha subunit of the catalytic core. Alternatively spliced transcript variants encoding the different isoforms have been identified. Pseudogenes of this gene are located on chromosomes 9, 2, and 16.

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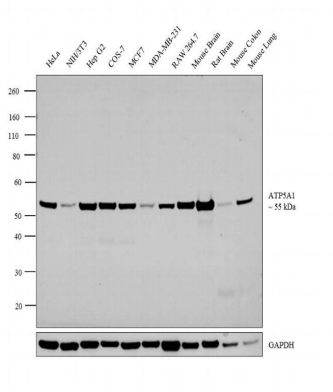
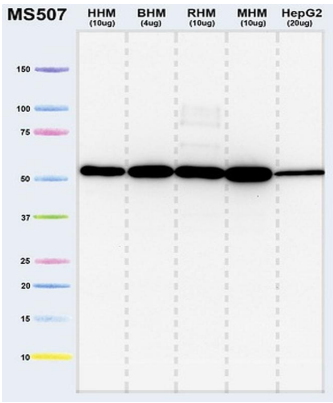
Product Images For ATP5A1 Monoclonal Antibody (15H4C4)



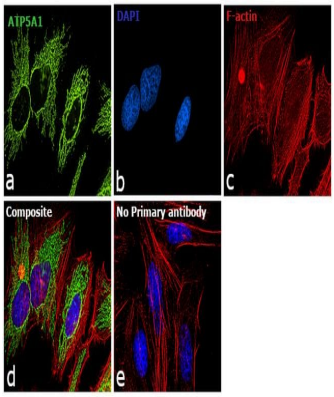
ATP5A1 Antibody (43-9800) in WB

Western blot analysis was performed on whole cell extracts (30 µg lysate) of HeLa (Lane 1), NIH/3T3 (Lane 2), Hep G2 (Lane 3), COS-7 (Lane 4), MCF7 (Lane 5), MDA-MB-231 (Lane 6), RAW 264.7 (Lane 7), tissue extracts of Mouse Brain (Lane 8), Rat Brain (Lane 9), Mouse Colon (Lane 10) and Mouse lung (Lane 11). The blot was probed with Anti-ATP5A1 Monoclonal Antibody (15H4C4) (Product # 43-9800, 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 55 kDa band corresponding to ATP5A1 was detected across the cell lines and tissues tested.



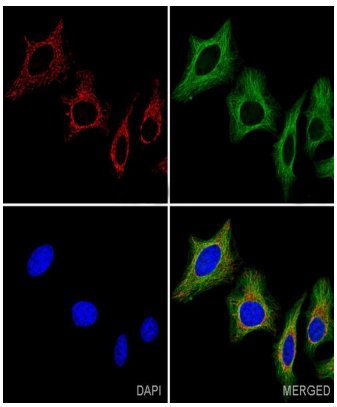
ATP5A1 Antibody (43-9800) in WB

Western blot analysis of ATP5A1 in isolated heart mitochondria extracts using a ATP5A1 Monoclonal antibody (Product # 43-9800) at a concentration of 1 µg/mL. Lane 1: Isolated mitochondria from human heart at 10 µg, Lane 2: Isolated mitochondria from bovine heart at 4 µg, Lane 3: Isolated mitochondria from rat heart at 10 µg. Lane 4: Isolated mitochondria from mouse heart at 10 µg, Lane 5: HepG2 (Human liver hepatocellular carcinoma cell line) lysate at 20 µg. Predicted band size: 53 kDa.



ATP5A1 Antibody (43-9800) in ICC/IF

Immunofluorescence analysis of ATP5A1 was performed using 70% confluent log phase HeLa cells. The cells were fixed with 4% paraformaldehyde for 10 minutes, permeabilized with 0.1% Triton™ X-100 for 15 minutes, and blocked with 1% BSA for 1 hour at room temperature. The cells were labeled with ATP5A1 Monoclonal Antibody (15H4C4) (Product # 43-9800) at 2 µg/mL in 0.1% BSA, incubated at 4 degree Celsius overnight and then labeled with Goat anti-Mouse IgG (H+L) Superclonal™ Secondary Antibody, Alexa Fluor® 488 conjugate (Product # A28175) at a dilution of 1:2000 for 45 minutes at room temperature (Panel a: green). Nuclei (Panel b: blue) were stained with ProLong™ Diamond Antifade Mountant with DAPI (Product # P36962). F-actin (Panel c: red) was stained with Rhodamine Phalloidin (Product # R415). Panel d represents the merged image showing mitochondrial localization. Panel e represents control cells with no primary antibody to assess background. The images were captured at 60X magnification.



ATP5A1 Antibody (43-9800) in ICC/IF

Immunofluorescence analysis of ATP5A1 was performed using HeLa cells. The cells were fixed with 100% methanol for 10 minutes, permeabilized with 0.1% Triton X-100 for 5 minutes, and blocked with 1% BSA/10% normal goat serum /0.3 M glycine in 0.1% PBS-Tween for 1 hour. The cells were labeled with Tubulin Monoclonal Antibody and ATP5A1 Monoclonal Antibody (15H4C4) (Product # 43-9800) at 1 µg/mL, incubated at 4°C overnight and then incubated for 1 hour with Goat Anti-Mouse IgG (H+L) Secondary Antibody (Alexa Fluor® 647) preadsorbed at 0.5 µg/mL, Goat Anti-Rat IgG (H+L) Secondary Antibody (Alexa Fluor® 488) preadsorbed at 0.5 µg/mL and DAPI.

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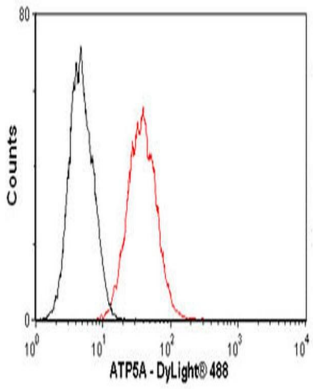

ATP5A1 Antibody (43-9800) in Flow

Flow cytometric analysis of ATP5A1 in HepG2 cells using a ATP5A1 Monoclonal Antibody (Product # 43-9800) at 1 µg /1x10^6 cells, shown in red. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) at 1:500 dilution. Isotype control, as seen in black, was a mouse IgG2b antibody.

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PubMed References For ATP5A1 Monoclonal Antibody (15H4C4)

1 Immunohistochemistry References

Species / Dilution	Summary
Fruit fly / 1:100	43-9800 was used in Immunohistochemistry to provide a valuable tool that can be utilized in designing genetic screens to identify novel regulators of autophagy and redox homeostasis during oogenesis. Frontiers in cell and developmental biology (2020; 7:) **"Generation and Characterization of Germline-Specific Autophagy and Mitochondrial Reactive Oxygen Species Reporters in Drosophila."** Author(s):Nilangekar K,Murmu N,Sahu G,Shravage BV PubMed Article URL:http://dx.doi.org/10.3389/fcell.2019.00047

7 Western Blot References

Species / Dilution	Summary
Not Applicable / Not Cited	43-9800 was used in western blot to study muscular dystrophy and the downstream effects of plectin mutations in epidermolysis bullosa simplex Acta neuropathologica communications (2016; 4:) **"Downstream effects of plectin mutations in epidermolysis bullosa simplex with muscular dystrophy."** Author(s):Winter L,Türk M,Harter PN,Mittelbronn M,Kornblum C,Norwood F,Jungbluth H,Thiel CT,Schlötzer-Schrehardt U,Schröder R PubMed Article URL:http://dx.doi.org/10.1186/s40478-016-0314-7
Human / 1:1000	43-9800 was used in Western Blotting to determine the role of SNX14 in endoplasmic reticulum-lipid droplet crosstalk. Human molecular genetics (2018; 27: 1927) **"SNX14 mutations affect endoplasmic reticulum-associated neutral lipid metabolism in autosomal recessive spinocerebellar ataxia 20."** Author(s):Bryant D,Liu Y,Datta S,Hariri H,Seda M,Anderson G,Peskett E,Demetriou C,Sousa S,Jenkins D,Clayton P,Bitner-Glindzicz M,Moore GE,Henne WM,Stanier P PubMed Article URL:http://dx.doi.org/10.1093/hmg/ddy101
Human / Not Cited	BioTechniques (2012; 0: 1) **"A chemical cross-linking method for the analysis of binding partners of heat shock protein-90 in intact cells."** Author(s):Song S,Kole S,Bernier M PubMed Article URL:http://dx.doi.org/10.2144/000113856
Rat / Not Cited	43-9800 was used in Western Blotting to show that mitochondria and autophagy are critical targets of 4-hydroxynonenal, and that the proteins targeted by 4-hydroxynonenal may change based on its concentration, leading to cellular dysfunction. Autophagy (2019; 13: 1828) **"Regulation of autophagy, mitochondrial dynamics, and cellular bioenergetics by 4-hydroxynonenal in primary neurons."** Author(s):Dodson M,Wani WY,Redmann M,Benavides GA,Johnson MS,Ouyang X,Cofield SS,Mitra K,Darley-Usmar V,Zhang J PubMed Article URL:http://dx.doi.org/10.1080/15548627.2017.1356948
Human / 1:2000	43-9800 was used in Western Blotting to study via PCR analysis to reveal an increase in mtDNA lesions and the frequency of mitochondrial common deletion, both established markers for impaired mitochondrial integrity in CAD compared to non-CAD patient samples. Scientific reports (2019; 9:) **"Mitochondrial Oxidative Phosphorylation defect in the Heart of Subjects with Coronary Artery Disease."** Author(s):Ait-Aissa K,Blaszak SC,Beutner G,Tsaih SW,Morgan G,Santos JH,Flister MJ,Joyce DL,Camara AKS,Gutterman DD,Donato AJ,Porter GA,Beyer AM PubMed Article URL:http://dx.doi.org/10.1038/s41598-019-43761-y
Not Applicable / 1:5000	43-9800 was used in western blot to learn about augmentation of mitochondrial transport and protective effect in adult Drosophila neurons by reducing lissencephaly-1 levels Journal of cell science (2016; 129: 178) **"Reducing Lissencephaly-1 levels augments mitochondrial transport and has a protective effect in adult Drosophila neurons."** Author(s):Vagnoni A,Hoffmann PC,Bullock SL PubMed Article URL:http://dx.doi.org/10.1242/jcs.179184

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	43-9800 was used in Western Blot to identify condensin II as novel regulators of mitochondrial respiration and mitochondrial stress responses.
Human / 1:50000	Journal of cell science (2019; 132:) **"Condensin II protein dysfunction impacts mitochondrial respiration and mitochondrial oxidative stress responses."** Author(s):Deutschman E,Ward JR,Kumar A,Ray G,Welch N,Lemieux ME,Dasarathy S,Longworth MS PubMed Article URL:http://dx.doi.org/10.1242/jcs.233783

1 Miscellaneous PubMed References

Species / Dilution	Summary
	43-9800 was used in western blot to test if and how MsrA affects retinal pigment epithelium functionality.
Rat / Not Cited	Free radical biology & medicine (2013; 65: 1340) **"Independent roles of methionine sulfoxide reductase A in mitochondrial ATP synthesis and as antioxidant in retinal pigment epithelial cells."** Author(s):Dun Y,Vargas J,Brot N,Finnemann SC PubMed Article URL:http://dx.doi.org/10.1016/j.freeradbiomed.2013.10.006

1 Immunoprecipitation References

Species / Dilution	Summary
Human / Not Cited	BioTechniques (2012; 0: 1) **"A chemical cross-linking method for the analysis of binding partners of heat shock protein-90 in intact cells."** Author(s):Song S,Kole S,Bernier M PubMed Article URL:http://dx.doi.org/10.2144/000113856

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