


Product datasheet

Anti-SDHA antibody [2E3GC12FB2AE2] ab14715

KO VALIDATED

★★★★★ [25 Abreviews](#) [416 References](#) [8 Images](#)

Overview

Product name	Anti-SDHA antibody [2E3GC12FB2AE2]
Description	Mouse monoclonal [2E3GC12FB2AE2] to SDHA
Host species	Mouse
Tested applications	Suitable for: IHC-Fr, Flow Cyt, WB, ICC, IHC-P
Species reactivity	Reacts with: Mouse, Rat, Cow, Human Predicted to work with: Dog 
Immunogen	Full length native protein (purified). This information is considered to be commercially sensitive.
Positive control	WB: HEK-293, MCF7 and HEpG2 whole cell lysates; Mitochondria isolated from human heart, cow heart, rat heart, mouse heart and HepG2 cells. Flow cyt: HL-60 cells. IHC-P: Human testis and skeletal muscle tissue. ICC: Cultured human embryonic lung-derived fibroblasts (strain MRC5).
General notes	<p>This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com.</p> <p>The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.</p> <p>If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As</p> <p>Product was previously marketed under the MitoSciences sub-brand.</p>

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C.
Storage buffer	pH: 7.5 Preservative: 0.02% Sodium azide Constituent: HEPES buffered saline

Purity	IgG fraction
Purification notes	Near homogeneity as judged by SDS-PAGE. The antibody was produced in vitro using hybridomas grown in serum-free medium, and then purified by biochemical fractionation.
Clonality	Monoclonal
Clone number	2E3GC12FB2AE2
Isotype	IgG1
Light chain type	kappa

Applications

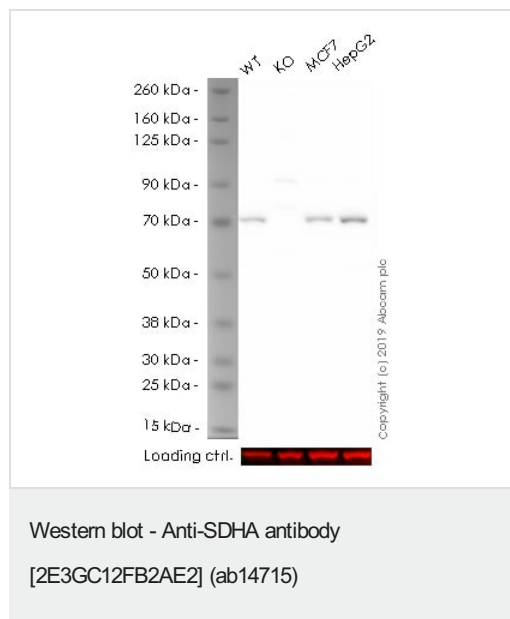
The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab14715 in the following tested applications. The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
IHC-Fr		Use at an assay dependent concentration.
Flow Cyt	★★★★★ (1)	Use a concentration of 1 µg/ml. ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.
WB	★★★★★ (17)	Use a concentration of 0.1 µg/ml. Detects a band of approximately 70 kDa (predicted molecular weight: 70 kDa).
ICC		Use at an assay dependent concentration.
IHC-P	★★★★★ (5)	Use at an assay dependent concentration.

Target

Function	Flavoprotein (FP) subunit of succinate dehydrogenase (SDH) that is involved in complex II of the mitochondrial electron transport chain and is responsible for transferring electrons from succinate to ubiquinone (coenzyme Q).
Pathway	Carbohydrate metabolism; tricarboxylic acid cycle; fumarate from succinate (eukaryal route): step 1/1.
Involvement in disease	<p>Defects in SDHA are a cause of mitochondrial complex II deficiency (MT-C2D) [MIM:252011]. A disorder of the mitochondrial respiratory chain with heterogeneous clinical manifestations. Clinical features include psychomotor regression in infants, poor growth with lack of speech development, severe spastic quadriplegia, dystonia, progressive leukoencephalopathy, muscle weakness, exercise intolerance, cardiomyopathy. Some patients manifest Leigh syndrome or Kearns-Sayre syndrome.</p> <p>Defects in SDHA are a cause of Leigh syndrome (LS) [MIM:256000]. LS is a severe disorder characterized by bilaterally symmetrical necrotic lesions in subcortical brain regions.</p> <p>Defects in SDHA are the cause of cardiomyopathy dilated type 1GG (CMD1GG) [MIM:613642]. CMD1GG is a disorder characterized by ventricular dilation and impaired systolic function, resulting in congestive heart failure and arrhythmia. Patients are at risk of premature death.</p>
Sequence similarities	Belongs to the FAD-dependent oxidoreductase 2 family. FRD/SDH subfamily.

Images



All lanes : HRP Anti-SDHA antibody [2E3GC12FB2AE2]
([ab198493](#)) at 1/5000 dilution

Lane 1 : Wild-type HEK-293 (human epithelial cell line from embryonic kidney) whole cell lysate

Lane 2 : SDHA knockout HEK-293 whole cell lysate

Lane 3 : MCF7 (human breast adenocarcinoma cell line) whole cell lysate

Lane 4 : HepG2 (human liver hepatocellular carcinoma cell line) whole cell lysate

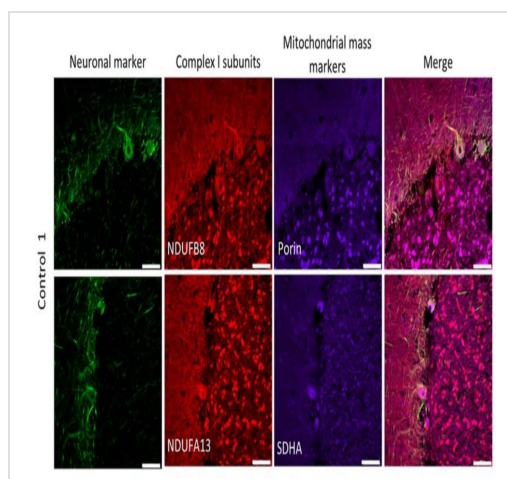
Lysates/proteins at 20 µg per lane.

Predicted band size: 70 kDa

This data was developed using the same antibody clone in a different format (HRP conjugated) ([ab198493](#)).

Lanes 1 - 4: Merged signal (red and green). Green - [ab198493](#) observed at 72 kDa. Red - loading control, [ab181602](#), observed at 37 kDa.

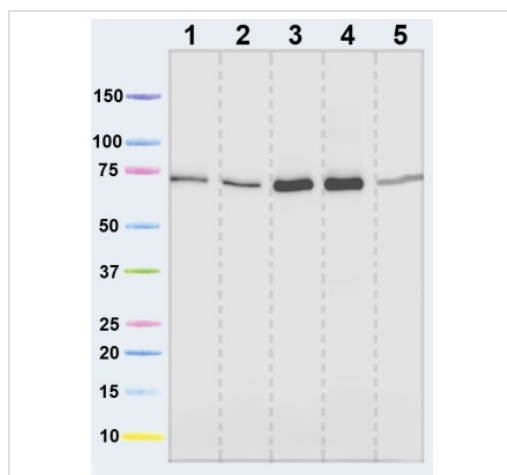
[ab198493](#) was shown to recognize in wild-type HEK-293 cells as signal was lost at the expected MW in SDHA knockout cells. Additional cross-reactive bands were observed in the wild-type and knockout cells. Wild-type and SDHA knockout samples were subjected to SDS-PAGE. The membrane was blocked with 3% Milk. Ab198493 and [ab181602](#) (Rabbit anti-GAPDH loading control) were incubated overnight at 4°C at 1/5000 dilution and 1/20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed [ab216773](#) and Goat anti-Rabbit IgG H&L (IRDye® 680RD) preabsorbed [ab216777](#) secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SDHA antibody [2E3GC12FB2AE2] (ab14715)

Image from Phillips J et al., Sci Rep. 2016 May 16;6:26013. Fig 4a doi: 10.1038/srep26013. Reproduced under the Creative Commons license <http://creativecommons.org/licenses/by/4.0/>.

250 μm-thick formalin-fixed human cerebellum section were passively cleared using PACT and immunofluorescently labelled to identify mitochondrial mass (porin (**ab14734**, 1/100) and SDHA (ab14715, 1/100), 647 nm) and complex I subunits within the mitochondrial respiratory chain (NDUFB8 (**ab110242**, 1/100) and NDUFA13 (**ab110240**, 1/100); 546 nm) in conjunction with a neuronal marker (NF-H; 488 nm) in control 1. Scale: 100 μm.



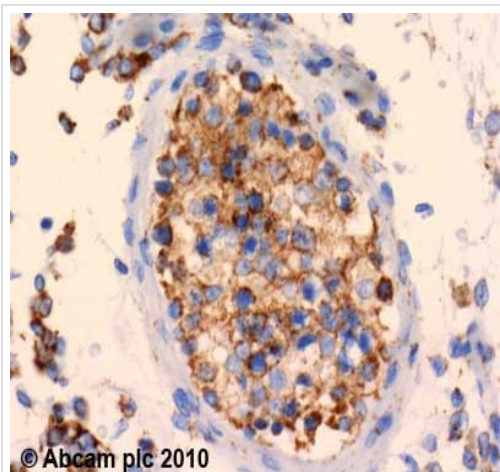
Western blot - Anti-SDHA antibody [2E3GC12FB2AE2] (ab14715)

All lanes : Anti-SDHA antibody [2E3GC12FB2AE2] (ab14715)

- Lane 1 :** Isolated mitochondria from Human heart at 5 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 :** Isolated mitochondria from HepG2 (human liver hepatocellular carcinoma cell line) at 20 μg

Predicted band size: 70 kDa

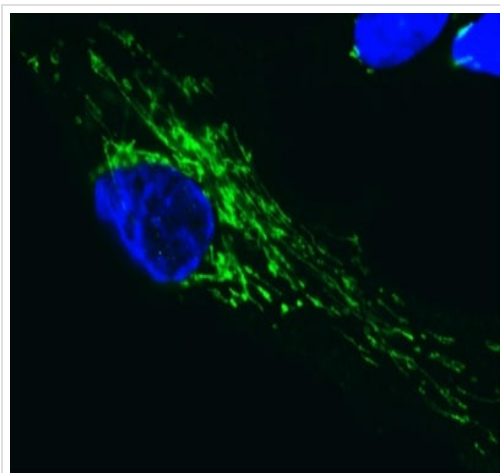
Observed band size: 70 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SDHA antibody [2E3GC12FB2AE2] (ab14715)

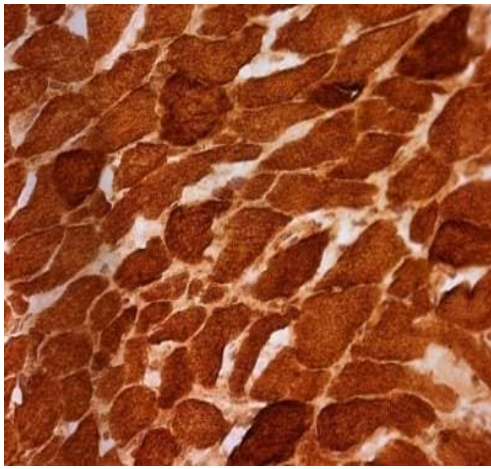
ab14715 (2µg/ml) staining SDHA in human testis using an automated system (DAKO Autostainer Plus). Using this protocol there is cytoplasmic and mitochondrial staining within the seminal vesicles.

Sections were rehydrated and antigen retrieved with the Dako 3 in 1 AR buffer EDTA pH 9.0 in a DAKO PT link. Slides were peroxidase blocked in 3% H₂O₂ in methanol for 10 mins. They were then blocked with Dako Protein block for 10 minutes (containing casein 0.25% in PBS) then incubated with primary antibody for 20 min and detected with Dako envision flex amplification kit for 30 minutes. Colorimetric detection was completed with Diaminobenzidine for 5 minutes. Slides were counterstained with Haematoxylin and coverslipped under DePeX. Please note that, for manual staining, optimization of primary antibody concentration and incubation time is recommended. Signal amplification may be required.



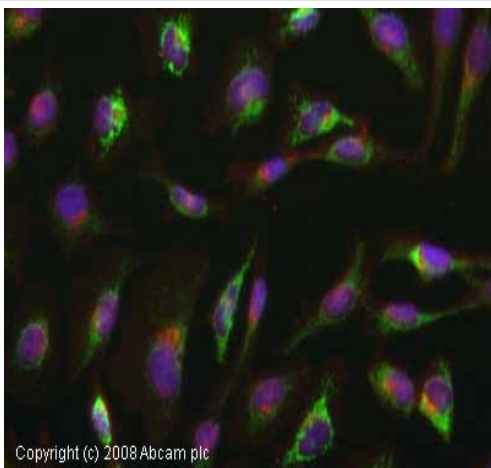
Immunocytochemistry - Anti-SDHA antibody [2E3GC12FB2AE2] (ab14715)

Mitochondrial localization of complex II visualized by immunocytochemistry using ab14715. Cultured human embryonic lung-derived fibroblasts (strain MRC5) were fixed, permeabilized and then labeled with ab14715 (0.2 µg/ml) followed by an AlexaFluor[®] 488-conjugated-goat-anti-mouse IgG2a isotype specific secondary antibody (2 µg/ml).



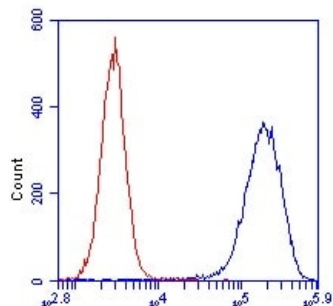
Immunohistochemistry (Frozen sections) - Anti-SDHA antibody [2E3GC12FB2AE2] (ab14715)

Human skeletal muscle immunohistochemistry using ab14715. Fixed frozen tissue sections from a patient with a single large deletion of the mtDNA were used. All muscle fibers exhibit complex II immunoreactivity, consistent with the nuclear DNA-encoded expression pattern of this and all other subunits of complex II.



Immunocytochemistry - Anti-SDHA antibody [2E3GC12FB2AE2] (ab14715)

ICC/IF image of ab14715 stained human HeLa cells. The cells were 4% PFA fixed (10 min) and then incubated in 0.1% PBS-tween diluted 1%BSA (OR 10% goat serum OR 0.3M glycine) for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab14715, 5µg/ml) overnight at +4°C. The secondary antibody (green) was Alexa Fluor® 488 goat anti-mouse IgG (H+L) used at a 1/1000 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue). This antibody also gave a positive IF result in Hek293, HepG2 and MCF7 cells.



Flow Cytometry - Anti-SDHA antibody
[2E3GC12FB2AE2] (ab14715)

HL-60 (human promyelocytic leukemia cell line) cells were stained with 1 µg/mL ab14715 (blue) or an equal amount of an isotype control antibody (red) and analyzed by flow cytometry.

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