abcam

ab137040

Anti-SDHA antibody [EPR9043(B)]

Recombinant | RabMAb | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR9043(B)
Purification technique	Affinity purification Protein A
Concentration	0.132 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/50 - 1/1000
Notes	-

Species	Rat

Dilution info	1/50 - 1/1000
Notes	-

Species	Human
Dilution info	1/50 - 1/1000
Notes	-

IP

Tested

Species	Human
Dilution info	1/10 - 1/20
Notes	**Unpurified dilution 1/10 - 1/100.**

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000 - 1/5000
Notes	**Unpurified dilution 1/1000 - 1/10000.**

Species	Rat
Dilution info	1/1000 - 1/5000
Notes	**Unpurified dilution 1/1000 - 1/10000.**

Species	Human
Dilution info	1/1000 - 1/5000
Notes	**Unpurified dilution 1/1000 - 1/10000.**

ICC/IF

Tested

Species	Human
Dilution info	1/100 - 1/250
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/10 - 1/20
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody. Unpurified dilution 1/10 - 1/100.

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information SDHA

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) (PubMed:10746566, PubMed:24781757). SDH also oxidizes malate to the non-canonical enol form of oxaloacetate, enol-oxaloacetate (By similarity). Enol-oxaloacetate, which is a potent inhibitor of the succinate dehydrogenase activity, is

further isomerized into keto-oxaloacetate (By similarity). Can act as a tumor suppressor (PubMed:20484225).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Succinate dehydrogenase complex flavoprotein subunit A (SDHA) also known as complex II Fp or SDH2 plays an important role in the mitochondrial electron transport chain and the tricarboxylic acid (TCA) cycle. It functions as a flavoprotein oxidoreductase catalyzing the oxidation of succinate to fumarate. With a molecular mass of approximately 72 kDa SDHA is expressed in the inner mitochondrial membrane of eukaryotic cells where it is a core component of the succinate dehydrogenase complex (SDHC). The complex is essential for cellular respiration and energy production.

Biological function summary	SDHA participates in the TCA cycle by accepting electrons from succinate which it donates to the coenzyme Q in the electron transport chain. This essential role connects SDHA to the regulation of ATP production in cells. SDHA operates as part of the larger succinate dehydrogenase (SDH) complex which includes other subunits such as SDHB SDHC and SDHD. This structurally integrated multisubunit complex influences mitochondrial integrity and cellular energy homeostasis.
Pathways	SDHA is deeply involved in the TCA cycle and oxidative phosphorylation pathway. As a part of these pathways it links to other critical enzymes such as fumarase and aconitase working in concert to drive the conversion of biochemical fuel into usable cellular energy. Its interactions with coenzyme Q and cytochrome complex enzymes are important for electron flow and proton gradient formation across the mitochondrial membrane. Such interactions are central to cellular respiration and energy generation.
Associated diseases and disorders	Mutations in SDHA correlate with various mitochondrial diseases and cancer syndromes. Specifically SDHA mutations have an association with Leigh syndrome and certain types of mitochondrial complex II deficiency. These mutations disrupt the function of the SDH complex causing metabolic imbalances and energy production issues. Furthermore the integral interaction of SDHA with other SDH subunits means that alterations can impact this entire enzymatic complex with implications for cellular respiration and disease progression.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

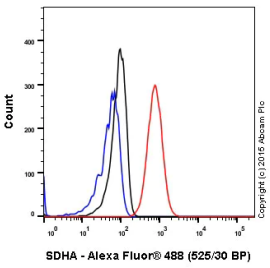
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

13 product images

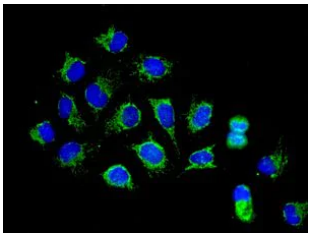


Flow Cytometry (Intracellular) - Anti-SDHA antibody [EPR9043(B)] (ab137040)

SDHA Flow Cytometry (Intracellular) staining using rabbit Anti-SDHA antibody

ab137040 staining SDHAin the human cell line HeLa (human cervix adenocarcinoma) by intracellular flow cytometry. Cells were fixed with 4% paraformaldehyde and the sample was incubated with the primary antibody at a dilution of 1/500. A goat anti rabbit IgG (Alexa Fluor® 488) at a dilution of 1/500 was used as the secondary antibody.
Isoytype control: Rabbit monoclonal IgG (Black)

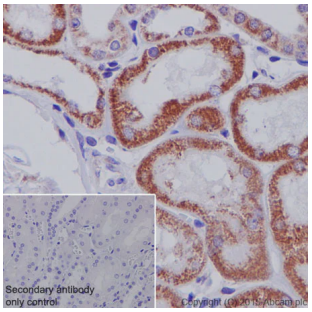
Unlabelled control: Cell without incubation with primary antibody and secondary antibody (Blue)



Immunocytochemistry/ Immunofluorescence - Anti-SDHA antibody [EPR9043(B)] (ab137040)

SDHA Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-SDHA antibody

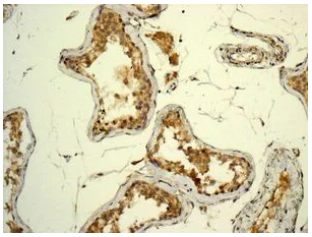
Immunofluorescence analysis of HeLa (Human epithelial cell line from cervix adenocarcinoma) cells labelling SDHA with ab137040 at 1/100 dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SDHA antibody [EPR9043(B)] (ab137040)

SDHA Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SDHA antibody

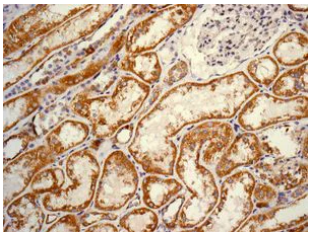
ab137040 staining SDHA in human kidney tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with paraformaldehyde and antigen retrieval was by heat mediation in a EDTA buffer. Samples were incubated with primary antibody at a dilution of 1/1000. A goat anti-rabbit IgG H&L (HRP) ab97051 was used as the secondary antibody at a dilution of 1/500.
Negative control 1: PBS in place of primary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SDHA antibody [EPR9043(B)] (ab137040)

SDHA Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SDHA antibody

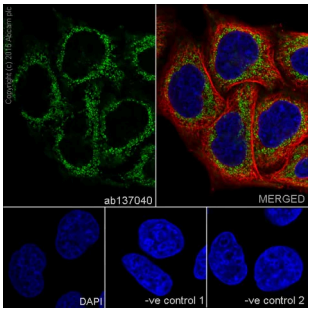
Immunohistochemichal analysis of paraffin embedded human testis tissue labelling SDHA with ab137040 at 1/50 dilution.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SDHA antibody [EPR9043(B)] (ab137040)

SDHA Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SDHA antibody

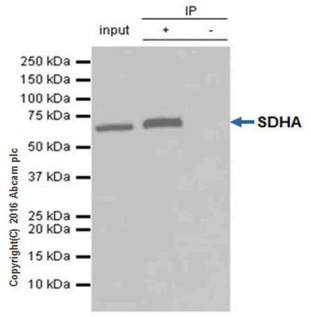
Immunohistochemichal analysis of paraffin embedded human kidney tissue labelling SDHA with ab137040 at 1/50 dilution.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-SDHA antibody [EPR9043(B)] (ab137040)

SDHA Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-SDHA antibody

ab137040 staining SDHA in HeLa (human cervix adenocarcinoma) cells by ICC/IF (Immunocytochemistry/immunofluorescence). Cells were fixed with 4% Paraformaldehyde and permeabilized with 0.1% Triton X-100. Samples were incubated with primary antibody at a dilution of 1/250. A goat anti rabbit IgG (Alexa Fluor® 488) (ab150077) was used as the secondary antibody. ab7291 and ab150120 were used as counterstains for primary antibody ab137040 and secondary antibody ab150077 respectively and DAPI was used as a nuclear counterstain.
Negative control 1: Rabbit primary antibody and anti-mouse secondary antibody (ab150120)
Negative control 2: Mouse primary antibody (ab7291) and anti-rabbit secondary antibody (ab150077)

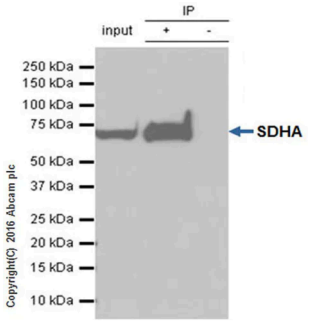


Immunoprecipitation - Anti-SDHA antibody [EPR9043(B)] (ab137040)

ab137040 immunoprecipitating SDHA. 10µg of Jurkat (Human T cell leukemia cell line from peripheral blood) cell lysate was incubated with primary antibody at a dilution of 1/20 and VeriBlot for IP Detection Reagent (HRP) (ab131366) at a dilution of 1/10000.
Lane 1: Jurkat whole cell lysate 10ug
Lane 2: ab137040 IP in Jurkat whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab137040 in Jurkat whole cell lysate

All lanes:
Immunoprecipitation - Anti-SDHA antibody [EPR9043(B)] (ab137040)

Predicted band size: 72 kDa

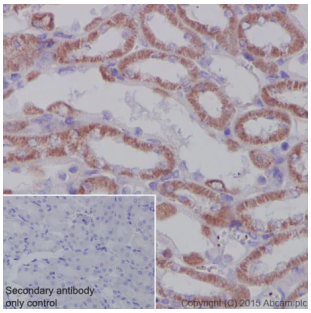


Immunoprecipitation - Anti-SDHA antibody [EPR9043(B)] (ab137040)

ab137040 immunoprecipitating SDHA. 10µg of HeLa (Human epithelial cell line from cervix adenocarcinoma) cell lysate was incubated with primary antibody at a dilution of 1/20 and VeriBlot for IP Detection Reagent (HRP) (ab131366) at a dilution of 1/10000.
Lane 1: HeLa whole cell lysate (10ug)
Lane 2: ab137040 IP in HeLa whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab137040 in HeLa whole cell lysate

All lanes:
Immunoprecipitation - Anti-SDHA antibody [EPR9043(B)] (ab137040)

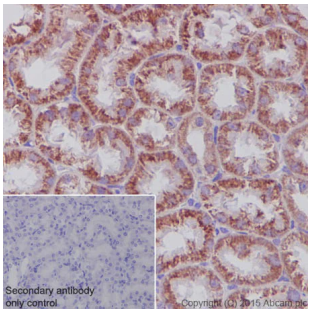
Predicted band size: 72 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SDHA antibody [EPR9043(B)] (ab137040)

SDHA Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SDHA antibody

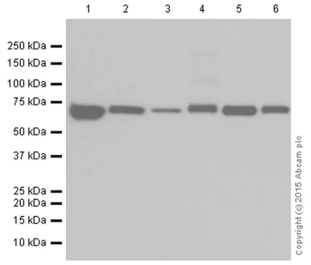
ab137040 staining SDHA in mouse kidney tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with paraformaldehyde and antigen retrieval was by heat mediation in a EDTA buffer. Samples were incubated with primary antibody at a dilution of 1/1000. A goat anti-rabbit IgG H&L (HRP) ab97051 was used as the secondary antibody at a dilution of 1/500.
Negative control 1: PBS in place of primary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SDHA antibody [EPR9043(B)] (ab137040)

SDHA Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SDHA antibody

ab137040 staining SDHA in rat kidney tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with paraformaldehyde and antigen retrieval was by heat mediation in a EDTA buffer. Samples were incubated with primary antibody at a dilution of 1/1000. A goat anti-rabbit IgG H&L (HRP) ab97051 was used as the secondary antibody at a dilution of 1/500.
Negative control 1: PBS in place of primary antibody.



Western blot - Anti-SDHA antibody [EPR9043(B)] (ab137040)

Blocking buffer: 5% NFDM /TBST
Diluting buffer: 5% NFDM /TBST

All lanes:
Western blot - Anti-SDHA antibody [EPR9043(B)] (ab137040) at 1/5000 dilution

Lane 1:
HeLa (human cervix adenocarcinoma) whole cell lysate at 20 µg

Lane 2:
HepG2 (human hepatocellular carcinoma) whole cell lysate at 20 µg

Lane 3:
Jurkat (human acute T cell leukemia) whole cell lysate at 20 µg

Lane 4:
Mouse brain tissue lysate at 20 µg

Lane 5:
Mouse kidney tissue lysate at 20 µg

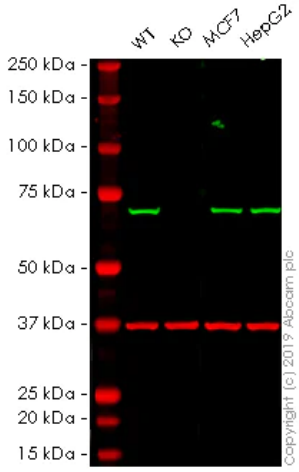
Lane 6:
Rat brain tissue lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 72 kDa

Observed band size: 72 kDa



Western blot - Anti-SDHA antibody [EPR9043(B)] (ab137040)

SDHA Western blot staining using rabbit Anti-SDHA antibody

Lanes 1 - 4: Merged signal (red and green). Green - ab137040 observed at 72 kDa. Red - loading control, ab8245, observed at 37 kDa.
ab137040 was shown to specifically react with SDHA in wild-type HEK-293 cells as signal was lost in SDHA knockout cell line ab261853 (knockout cell lysate ab261657). Wild-type and SDHA knockout samples were subjected to SDS-PAGE. The membrane was blocked with 3% milk. ab137040 and ab8245 (Mouse anti-GAPDH loading control) were incubated overnight at 4°C at 1/1000 dilution and 1/20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ab216773 and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ab216776 secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-SDHA antibody [EPR9043(B)] (ab137040) at 1/1000 dilution

Lane 1:
Wild-type HEK-293 (Human epithelial cell line from embryonic kidney) whole cell lysate at 20 µg

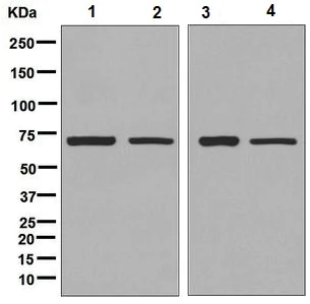
Lane 2:
Western blot - Human SDHA knockout HEK-293 cell lysate (ab261657) at 20 µg

Lane 3:
MCF7 (Human breast adenocarcinoma cell line) whole cell lysate at 20 µg

Lane 4:
Hep G2 (Human liver hepatocellular carcinoma cell line) whole cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 72 kDa



Western blot - Anti-SDHA antibody [EPR9043(B)] (ab137040)

All lanes:
Western blot - Anti-SDHA antibody [EPR9043(B)] (ab137040) at 1/1000 dilution

Lane 1:
HeLa cell lysate at 10 µg

Lane 2:
HepG2 cell lysate at 10 µg

Lane 3:
HT1080 cell lysate at 10 µg

Lane 4:

Jurkat cell lysate at 10 µg

Secondary

All lanes:
HRP conjugated Goat anti Rabbit IgG at 1/2000 dilution

Predicted band size: 72 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.