abcam

ab178423

Anti-SDHB antibody [EPR13042(B)]

Anti-SDHB antibody [EPR13042(B)] (ab178423) is a rabbit monoclonal antibody detecting SDHB in **Western Blot, Flow Cytometry (Intra), IP, IHC-P**. Suitable for **Human**.

- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency
- Over 10 publications

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 50% Tissue culture supernatant, 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	EPR13042(B)
Purification technique	Affinity purification Protein A
Concentration	0.084 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/50 - 1/100
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	1/10 - 1/100
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

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

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information SDHB

Function Iron-sulfur protein (IP) subunit of the succinate dehydrogenase complex (mitochondrial respiratory chain complex II), responsible for transferring electrons from succinate to ubiquinone (coenzyme Q) (PubMed:26925370, PubMed:27604842). 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).

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

What is this antibody validated in?
Anti-SDHB antibody [EPR13042(B)] (ab178423) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunoprecipitation (IP), Immunohistochemistry (IHC-P) in Human samples.

What is the molecular weight of SDHB?
Anti-SDHB [EPR13042(B)] (ab178423) specifically detects a band for SDHB (UniProt: P21912) at a molecular weight of 32kDa.

Trusted by the scientific community
Anti-SDHB [EPR13042(B)] (ab178423) was first used in a scientific publication in 2013 and has been cited over 10 times in peer-reviewed journals.

Specificity confirmed
The specificity of Anti-SDHB antibody [EPR13042(B)] (ab178423) has been confirmed by Western blot testing in SDHB Knockout HEK-293 cells.

Other related products
We have a range of other formats of antibody clone [EPR13042(B)] also available for your convenience: ab178423, Carrier free - ab250046, PE - ab305931, APC - ab305932, HRP - ab305933, Alkaline Phosphatase - ab308925, Alexa Fluor® 488 - ab309855, Alexa Fluor® 647 - ab310223, Alexa Fluor® 594 - ab310670, Alexa Fluor® 555 - ab312201, Alexa Fluor® 568 - ab312689, Alexa Fluor® 750 - ab321213

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	The protein SDHB also known as Succinate Dehydrogenase Complex Iron Sulfur Subunit B plays a mechanical role as a component of the succinate dehydrogenase (SDH) enzyme. This subunit has a molecular mass of approximately 30 kDa. SDHB is part of the mitochondrial inner membrane where it is expressed in high levels across various tissues including heart kidney and muscle. It contributes to the electron transport chain by facilitating the oxidation of succinate to fumarate an important step in energy production through the tricarboxylic acid (TCA) cycle.
Biological function summary	SDHB participates in the succinate dehydrogenase complex acting within both the TCA cycle and the electron transport chain. By transferring electrons to coenzyme Q it helps generate an electrochemical gradient important for ATP synthesis. This complex also called Complex II includes other subunits such as SDHA SDHC and SDHD. Their interactions ensure proper function of metabolic processes within mitochondria bridging the gap between foundational energy metabolism and complex cellular processes.
Pathways	SDHB plays an important role in cellular respiration and metabolic cycles. It resides in the TCA cycle and the mitochondrial electron transport chain connecting its function to energy generation pathways. Specifically SDHB relates closely to SDHA and coenzyme Q all working together to facilitate electron transfer and effective mitochondrial energy output. The transfer of electrons through this pathway highlights its essential contribution to maintaining cellular energy homeostasis.
Associated diseases and disorders	SDHB mutations are associated with conditions such as paraganglioma and pheochromocytoma. These genetic alterations disrupt normal complex II function leading to the accumulation of succinate and succinate-related oncogenesis. In addition to causing tumor development defective SDHB is linked with familial paraganglioma syndromes. Its interaction with proteins such as SDHA and SDHD critical for the succinate dehydrogenase functionality highlights its significant role in maintaining metabolic balance and when defective contributing to disease pathogenesis.

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

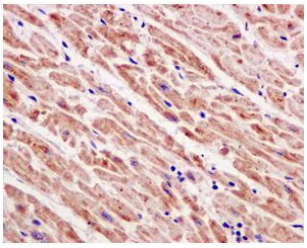
We do not recommend this combination. It is not covered by our product promise.

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.

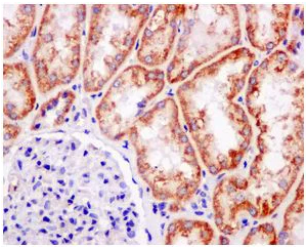
6 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SDHB antibody [EPR13042(B)] (ab178423)

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

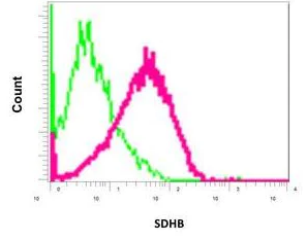
Immunohistochemical analysis of paraffin-embedded Human heart tissue labeling SDHB with ab178423 at 1/50 dilution.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SDHB antibody [EPR13042(B)] (ab178423)

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

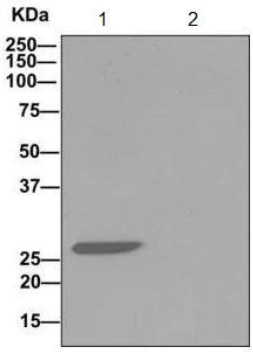
Immunohistochemical analysis of paraffin-embedded Human kidney tissue labeling SDHB with ab178423 at 1/50 dilution.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-SDHB antibody [EPR13042(B)] (ab178423)

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

Intracellular flow cytometric analysis of permeabilized HepG2 cells labeling SDHB with ab178423 at 1/10 dilution (red) compared with a rabbit IgG negative control (green).

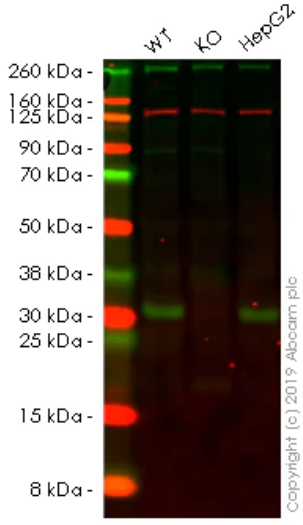


Immunoprecipitation - Anti-SDHB antibody [EPR13042(B)] (ab178423)

Western blot analysis on immunoprecipitation pellet from (1) A431 cell lysate or (2) 1X PBS (negative control) immunoprecipitated using ab178423 at 1/10 dilution. Detection utilized HRP-conjugated anti-rabbit IgG which preferentially detects the non-reduced form of rabbit IgG.
All lanes:
Immunoprecipitation - Anti-SDHB antibody [EPR13042(B)] (ab178423)

Predicted band size: 32 kDa, 76 kDa

Observed band size: 100 kDa, 85 kDa



Western blot - Anti-SDHB antibody [EPR13042(B)] (ab178423)

SDHB Western blot staining using rabbit Anti-SDHB antibody

Lane 1: Wild-type HEK-293 whole cell lysate
Lane 2: SDHB knockout HEK-293 whole cell lysate
Lane 3: Hep G2 (Human liver hepatocellular carcinoma cell line) whole cell lysate
Lanes 1 - 3: Merged signal (red and green). Green - ab178423 observed at 32 kDa. Red - loading control, ab130007, observed at 130 kDa.
ab178423 was shown to recognize SDHB in wild-type HEK-293 cells as signal was lost at the expected MW in SDHB knockout cell line ab260860 (knockout cell lysate ab261652). Additional cross-reactive bands were observed in the wild-type and knockout cell lysate. Wild-type and SDHB knockout samples were subjected to SDS-PAGE. The membrane was blocked with 3% milk. ab178423 and ab130007 (Mouse anti Vinculin 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-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-SDHB antibody [EPR13042(B)] (ab178423) at 1/5000 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 SDHB knockout HEK-293 cell lysate (ab261652) at 20 µg

Lane 3:
Hep G2 (Human liver hepatocellular carcinoma cell line) whole cell lysate at 20 µg

Secondary

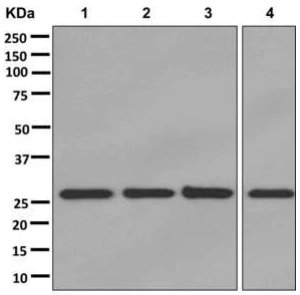
Lanes 1 - 3:
Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) at 1/20000 dilution

Lanes 1 - 3:
Western blot - Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 32 kDa

Observed band size: 32 kDa, 130 kDa



Western blot - Anti-SDHB antibody [EPR13042(B)] (ab178423)

SDHB Western blot staining using rabbit Anti-SDHB antibody

All lanes:
Western blot - Anti-SDHB antibody [EPR13042(B)] (ab178423) at 1/1000 dilution

Lane 1:
Human fetal liver tissue lysate at 10 µg

Lane 2:
HepG2 cell lysate at 10 µg

Lane 3:
A431 cell lysate at 10 µg

Lane 4:
Jurkat cell lysate at 10 µg

Secondary

All lanes:
Goat anti-rabbit HRP at 1/2000 dilution

Predicted band size: 32 kDa

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