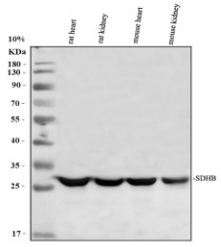
SDHB Antibody / Complex II Iron-Sulfur Subunit Antibody (RQ4182)

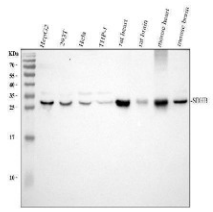
Catalog No.	Formulation	Size
RQ4182	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

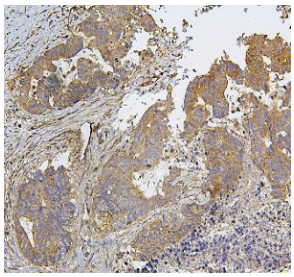
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose and 0.025% sodium azide
UniProt	P21912
Localization	Cytoplasmic (mitochondrial)
Applications	Western Blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Direct ELISA: 0.1-0.5ug/ml
Limitations	This SDHB Antibody / Complex II Iron-Sulfur Subunit Antibody is available for research use only.



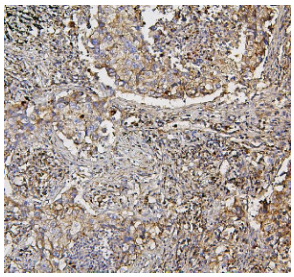
SDHB Antibody Mouse and Rat Heart and Kidney WB. Western blot analysis was performed using SDHB Antibody on rat heart and kidney tissue lysates (lanes 1-2) and mouse heart and kidney tissue lysates (lanes 3-4). Samples (30 ug) were separated by 10% SDS-PAGE under reducing conditions. The antibody was used at 0.5 ug/ml overnight at 4oC. A prominent band was detected at approximately 29 kDa, close to the predicted molecular weight of approximately 32 kDa. This SDHB Antibody demonstrates detection of the Complex II iron-sulfur subunit in mitochondria-rich mouse and rat tissues.



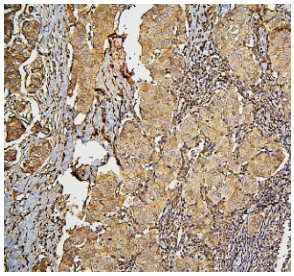
SDHB Antibody Human, Mouse and Rat WB. Western blot analysis was performed using SDHB Antibody on human HepG2, 293T, HeLa and THP-1 cell lysates (lanes 1-4), rat heart and brain tissue lysates (lanes 5-6), and mouse heart and brain tissue lysates (lanes 7-8). Samples (30 ug) were separated by 13% SDS-PAGE under reducing conditions. The antibody was used at 0.5 ug/ml overnight at 4oC. A specific band was detected at approximately 29 kDa, close to the predicted molecular weight of approximately 32 kDa. This SDHB Antibody demonstrates detection of the Complex II iron-sulfur subunit across human, mouse and rat samples.



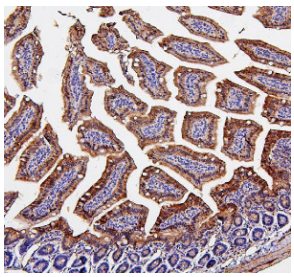
SDHB Antibody Human Colon Cancer IHC. IHC staining of FFPE human colon cancer tissue was performed with SDHB Antibody at 2 ug/ml overnight at 4oC. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer, followed by HRP-conjugated secondary antibody and DAB detection. Positive SDHB staining is observed in the tumor cells with a predominantly cytoplasmic pattern. This SDHB Antibody demonstrates localization of the Complex II iron-sulfur subunit in human colon cancer tissue.



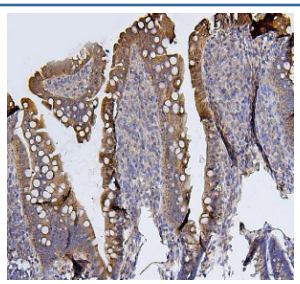
SDHB Antibody Human Lung Cancer IHC. IHC staining of FFPE human lung cancer tissue was performed with SDHB Antibody at 2 ug/ml overnight at 4oC. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer, followed by HRP-conjugated secondary antibody and DAB detection. Positive SDHB staining is observed in tumor cells with a predominantly cytoplasmic pattern. This SDHB Antibody demonstrates localization of the Complex II iron-sulfur subunit in human lung cancer tissue.



SDHB Antibody Human Breast Cancer IHC. IHC staining of FFPE human breast cancer tissue was performed with SDHB Antibody at 2 ug/ml overnight at 4oC. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer, followed by HRP-conjugated secondary antibody and DAB detection. Positive SDHB staining is observed in tumor cells with a predominantly cytoplasmic pattern. This SDHB Antibody demonstrates localization of the Complex II iron-sulfur subunit in human breast cancer tissue.



SDHB Antibody Mouse Small Intestine IHC. IHC staining of FFPE mouse small intestine tissue was performed with SDHB Antibody at 2 ug/ml overnight at 4oC. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer, followed by HRP-conjugated secondary antibody and DAB detection. Positive SDHB staining is observed prominently in the intestinal epithelium with a predominantly cytoplasmic pattern. This SDHB Antibody demonstrates localization of the Complex II iron-sulfur subunit in mouse small intestine tissue.



SDHB Antibody Rat Small Intestine IHC. IHC staining of FFPE rat small intestine tissue was performed with SDHB Antibody at 2 ug/ml overnight at 4oC. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer, followed by HRP-conjugated secondary antibody and DAB detection. Positive SDHB staining is observed prominently in the intestinal epithelium with a predominantly cytoplasmic pattern. This SDHB Antibody demonstrates localization of the Complex II iron-sulfur subunit in rat small intestine tissue.

Description

SDHB Antibody / Complex II Iron-Sulfur Subunit Antibody detects SDHB, an essential component of succinate dehydrogenase, or mitochondrial respiratory Complex II. SDHB is encoded by the nuclear SDHB gene and forms the iron-sulfur subunit of the four-component succinate dehydrogenase complex located in the inner mitochondrial membrane. Complex II has the distinctive role of participating in both the tricarboxylic acid (TCA) cycle and the mitochondrial electron transport chain, linking cellular carbon metabolism directly to oxidative phosphorylation.

Succinate dehydrogenase catalyzes the oxidation of succinate to fumarate during the TCA cycle. Electrons generated during this reaction are transferred through flavin adenine dinucleotide in the SDHA catalytic subunit and subsequently through iron-sulfur clusters contained within SDHB. SDHB then facilitates electron transfer toward ubiquinone through the membrane-associated SDHC and SDHD subunits. Unlike several other respiratory chain complexes, Complex II does not directly pump protons across the inner mitochondrial membrane.

The iron-sulfur centers of SDHB are essential for efficient electron transfer through Complex II. Proper assembly and function of SDHB therefore contribute to mitochondrial respiration, cellular energy production and maintenance of metabolic homeostasis. Impaired succinate dehydrogenase activity can alter mitochondrial electron transport and lead to accumulation of succinate. Because succinate participates in metabolic signaling as well as intermediary metabolism, disruption of Complex II can have effects extending beyond ATP production.

SDHB has particular importance in cancer and mitochondrial disease research. Loss-of-function alterations affecting SDHB can impair succinate dehydrogenase activity and cause intracellular succinate accumulation. Elevated succinate can influence oxygen-sensing pathways and cellular transcriptional programs by inhibiting alpha-ketoglutarate-dependent enzymes. These metabolic changes have contributed to the classification of succinate as an oncometabolite in the context of SDH-deficient tumors.

Germline and somatic alterations affecting SDHB have been investigated extensively in pheochromocytoma, paraganglioma and several other tumor types. Loss of SDHB protein expression by immunohistochemical analysis can also serve as an indicator of dysfunction within the succinate dehydrogenase complex. Beyond oncology, SDHB and other Complex II components are studied in mitochondrial disorders, oxidative stress, metabolic regulation and mechanisms controlling cellular respiration.

NSJ Bioreagents offers SDHB Antibody reagents for investigating the expression and localization of this mitochondrial respiratory chain component. A Complex II Iron-Sulfur Subunit Antibody can support research into mitochondrial respiration, TCA cycle metabolism, electron transport, SDH-deficient tumors and the broader biological consequences of altered succinate dehydrogenase function.

Researchers studying SDHB in mitochondrial respiration and energy metabolism can explore our Mitochondria Marker Antibody page for additional targets involved in mitochondrial function, oxidative phosphorylation and cellular metabolism.

Application Notes

Optimal dilution of the SDHB Antibody / Complex II Iron-Sulfur Subunit Antibody should be determined by the researcher.

Immunogen

A recombinant human protein corresponding to amino acids A29-V280 was used as the immunogen for the SDHB antibody.

Storage

After reconstitution, the SDHB antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

SDHB antibody, Complex II Iron-Sulfur Subunit antibody, Succinate Dehydrogenase B antibody, Succinate Dehydrogenase Iron-Sulfur Subunit antibody, Iron-Sulfur Subunit of Complex II antibody, SDH2 antibody, IP antibody

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