

SDHA (D-4): sc-166947



The Power to Question

BACKGROUND

In aerobic respiration reactions, succinate dehydrogenase (SDH) catalyzes the oxidation of succinate and ubiquinone to fumarate and ubiquinol. Four subunits comprise the SDH protein complex: a flavochrome subunit (SDHA), an iron-sulfur protein (SDHB) and two membrane-bound subunits (SDHC and SDHD) anchored to the inner mitochondrial membrane. Mutations to these subunits cause mitochondrial dysfunction, corresponding to several distinct disorders. Mutations in the membrane bound components may cause hereditary paraganglioma, while SDHA mutations are associated with juvenile encephalopathy as well as Leigh syndrome, a severe neurological disorder. Inactivating mutations in SDHB correlate with inherited, but not necessarily sporadic, cases of pheochromocytoma.

REFERENCES

- Spencer, M.E., et al. 1974. Proteins of the inner membrane of *Escherichia coli*: identification of succinate dehydrogenase by polyacrylamide gel electrophoresis with SDH amber mutants. *J. Bacteriol.* 117: 947-953.
- Wolf, P., et al. 1975. Histochemical investigations on the presence of acetylcholinesterase and succinic dehydrogenase in fetal human spinal cord and brain stem at different stages of development. *Eur. Neurol.* 13: 31-46.

CHROMOSOMAL LOCATION

Genetic locus: SDHA (human) mapping to 5p15.33; Sdha (mouse) mapping to 13 C1.

SOURCE

SDHA (D-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 461-664 at the C-terminus of succinate dehydrogenase flavoprotein subunit of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

SDHA (D-4) is recommended for detection of precursor and mature SDHA of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for SDHA siRNA (h): sc-61834, SDHA siRNA (m): sc-61835, SDHA shRNA Plasmid (h): sc-61834-SH, SDHA shRNA Plasmid (m): sc-61835-SH, SDHA shRNA (h) Lentiviral Particles: sc-61834-V and SDHA shRNA (m) Lentiviral Particles: sc-61835-V.

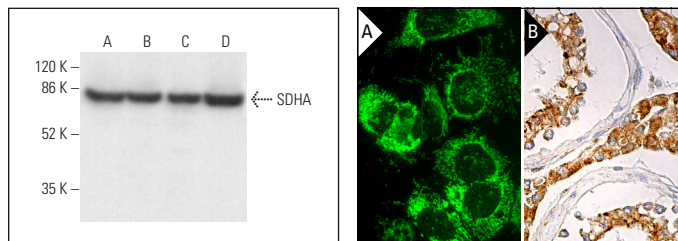
Molecular Weight of SDHA: 70 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, RAW 264.7 whole cell lysate: sc-2211 or Neuro-2A whole cell lysate: sc-364185.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



SDHA (D-4): sc-166947. Western blot analysis of SDHA expression in HeLa (A), RAW 264.7 (B), C2C12 (C) and Neuro-2A (D) whole cell lysates.

SDHA (D-4): sc-166947. Immunofluorescence staining of formalin-fixed Hep G2 cells showing mitochondrial localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic staining of cells in seminiferous ducts and Leydig cells (B).

SELECT PRODUCT CITATIONS

- Samluk, L., et al. 2019. Cytosolic translational responses differ under conditions of severe short-term and long-term mitochondrial stress. *Mol. Biol. Cell* 30: 1864-1877.
- Ogura, Y., et al. 2020. Ketogenic diet feeding improves aerobic metabolism property in extensor digitorum longus muscle of sedentary male rats. *PLoS ONE* 15: e0241382.
- Sanchez-Martin, C., et al. 2021. Honokiol bis-dichloroacetate is a selective allosteric inhibitor of the mitochondrial chaperone TRAP1. *Antioxid. Redox Signal.* 34: 505-516.
- Le Vasseur, M., et al. 2021. Genome-wide CRISPRi screening identifies OCIAD1 as a prohibitin client and regulatory determinant of mitochondrial Complex III assembly in human cells. *Elife* 10: e67624.
- Carrer, A., et al. 2021. Defining the molecular mechanisms of the mitochondrial permeability transition through genetic manipulation of F-ATP synthase. *Nat. Commun.* 12: 4835.
- Mathieu, C., et al. 2021. Synthesis and antiproliferative activity of 6BrCaQ-TPP conjugates for targeting the mitochondrial heat shock protein TRAP1. *Eur. J. Med. Chem.* 229: 114052.
- Chojnacka, K.J., et al. 2022. Ovarian carcinoma immunoreactive antigen-like protein 2 (OCIAD2) is a novel complex III specific assembly factor in mitochondria. *Mol. Biol. Cell.* E-published.
- Triveri, A., et al. 2022. Protein allostery and ligand design: computational design meets experiments to discover novel chemical probes. *J. Mol. Biol.* E-published.

RESEARCH USE

For research use only, not for use in diagnostic procedures.