

# NDUFS4 (T-18): sc-70193

## BACKGROUND

Complex I (also known as NADH dehydrogenase) of the electron transport chain (respiratory chain) is an enzymatic complex that catalyzes the transfer of electrons from NADH to ubiquinone. Free energy from the reaction is conserved in the transfer of protons into the intermembrane space to create an electrochemical proton gradient, a driving force for ATP synthesis. Complex I is a complicated, multi-protein, L-shaped complex composed of at least 45 different subunits and located in the mitochondrial inner membrane. NDUFS4 (NADH dehydrogenase (ubiquinone) Fe-S protein 4), also known as AQQD or CI-18 (complex I-18 kDa protein), belongs to the complex I NDUFS4 subunit family. NDUFS4 localizes to the matrix side of the inner membrane of the mitochondrion and functions as an accessory subunit of complex I. Mutations in the gene encoding NDUFS4 can result in complex I mitochondrial respiratory chain deficiency. Patients with this deficiency may exhibit cardiomyopathy, myopathy, liver failure and neurological disorders.

## REFERENCES

1. Papa, S., et al. 1996. The nuclear-encoded 18 kDa (IP) AQQD subunit of bovine heart complex I is phosphorylated by the mitochondrial cAMP-dependent protein kinase. *FEBS Lett.* 379: 299-301.
2. Online Mendelian Inheritance in Man, OMIM™. 1998. Johns Hopkins University, Baltimore, MD. MIM Number: 602694. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Budde, S.M., et al. 2000. Combined enzymatic complex I and III deficiency associated with mutations in the nuclear encoded NDUFS4 gene. *Biochem. Biophys. Res. Commun.* 275: 63-68.
4. Scacco, S., et al. 2006. Mutations in structural genes of complex I associated with neurological diseases. *Ital. J. Biochem.* 55: 254-262.
5. Piccoli, C., et al. 2006. cAMP controls oxygen metabolism in mammalian cells. *FEBS Lett.* 580: 4539-4543.
6. Iuso, A., et al. 2006. Dysfunctions of cellular oxidative metabolism in patients with mutations in the NDUFS1 and NDUFS4 genes of complex I. *J. Biol. Chem.* 281: 10374-10380.

## CHROMOSOMAL LOCATION

Genetic locus: NDUFS4 (human) mapping to 5q11.2; Ndufs4 (mouse) mapping to 13 D2.2.

## SOURCE

NDUFS4 (T-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of NDUFS4 of human origin.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-70193 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

NDUFS4 (T-18) is recommended for detection of NDUFS4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

NDUFS4 (T-18) is also recommended for detection of NDUFS4 in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for NDUFS4 siRNA (h): sc-75892, NDUFS4 siRNA (m): sc-75893, NDUFS4 shRNA Plasmid (h): sc-75892-SH, NDUFS4 shRNA Plasmid (m): sc-75893-SH, NDUFS4 shRNA (h) Lentiviral Particles: sc-75892-V and NDUFS4 shRNA (m) Lentiviral Particles: sc-75893-V.

Molecular Weight of NDUFS4: 18 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## RESEARCH USE

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


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Try **NDUFS4 (A-7): sc-514002** or **NDUFS4 (1-E-4): sc-100567**, our highly recommended monoclonal alternatives to NDUFS4 (T-18).