SANTA CRUZ BIOTECHNOLOGY, INC.

ND1 (C-18): sc-20493

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

NADH:ubiquinone oxidoreductase (complex I) is an extremely complicated multiprotein complex located in the inner mitochondrial membrane. Human complex I is important for energy metabolism because its main function is to transport electrons from NADH to ubiquinone, which is accompanied by translocation of protons from the mitochondrial matrix to the intermembrane space. Human complex I appears to consist of 41 subunits. A small number of complex I subunits are the products of mitochondrial genes (subunits 1-7), while the remainder are nuclear encoded and imported from the cytoplasm. NADH dehydrogenase subunit 1 (ND1) binds rotenone and rotenone analogs and might be involved in electron transfer to ubiquinone. Mutations in the ND1 gene may be implicated in several disorders, including Leber hereditary optic neuropathy, Alzheimer disease, and Parkinson disease.

CHROMOSOMAL LOCATION

Genetic locus: ND1 (human) mapping to MT; ND1 (mouse) mapping to MT.

SOURCE

ND1 (C-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ND1 of human origin.

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-20493 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

RESEARCH USE

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

APPLICATIONS

ND1 (C-18) is recommended for detection of NADH-ubiquinone oxidoreductase chain 1 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), 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).

ND1 (C-18) is also recommended for detection of NADH-ubiquinone oxidoreductase chain 1 in additional species, including equine, canine, bovine, porcine and avian.

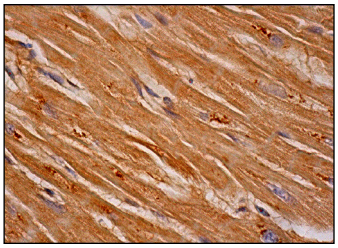
Molecular Weight of ND1: 36 kDa.

Positive Controls: mouse heart extract: sc-2254, mouse brain extract: sc-2253 or human heart extract: sc-363763.

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. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



ND1 (C-18): sc-20493. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes.

SELECT PRODUCT CITATIONS

1. García-Ruiz, I., et al. 2010. Mitochondrial complex I subunits are decreased in murine nonalcoholic fatty liver disease: implication of peroxynitrite. J. Proteome Res. 9: 2450-2459.
2. Zamorano-León, J.J., et al. 2010. A proteomic approach to determine changes in proteins involved in the myocardial metabolism in left ventricles of spontaneously hypertensive rats. Cell. Physiol. Biochem. 25: 347-358.
3. Solís-Muñoz, P., et al. 2011. Melatonin improves mitochondrial respiratory chain activity and liver morphology in ob/ob mice. J. Pineal Res. 51: 113-123.
4. Valenti, D., et al. 2011. Deficit of complex I activity in human skin fibroblasts with chromosome 21 trisomy and overproduction of reactive oxygen species by mitochondria: involvement of the cAMP/PKA signalling pathway. Biochem. J. 435: 679-688.
5. Wan, X., et al. 2012. Defects of mtDNA replication impaired mitochondrial biogenesis during *Trypanosoma cruzi* infection in human cardiomyocytes and chagasic patients: the role of Nrf1/2 and antioxidant response. J. Am. Heart Assoc. 1: e003855.