

SCO1 (D-1): sc-398001



The Power to Question

BACKGROUND

The SCO1 and SCO2 protein homologs belong to the SCO1/2 family of proteins. SCO1 and SCO2 both localize to the mitochondrion and are inner membrane proteins crucial for copper insertion or transport to the active site of cytochrome c oxidase (COX). COX is a crucial component in energy production because it functions as the terminal enzyme in the respiratory chain. SCO1 is predominantly expressed in highly oxidative phosphorylation tissues such as brain, heart and muscle, while SCO2 is ubiquitously expressed. Defects in the gene encoding for SCO1 may cause cytochrome c oxidase deficiency, a heterogeneous disorder. Defects in the gene encoding for SCO2 may cause cardioencephalomyopathy with cytochrome c oxidase deficiency, a fatal infantile disorder characterized by hypertrophic cardiomyopathy, lactic acidosis and gliosis.

REFERENCES

- Jaksch, M., et al. 2001. Cytochrome c oxidase deficiency due to mutations in SCO2, encoding a mitochondrial copper-binding protein, is rescued by copper in human myoblasts. *Hum. Mol. Genet.* 10: 3025-3035.
- Balatri, E., et al. 2003. Solution structure of SCO1: a thioredoxin-like protein involved in cytochrome c oxidase assembly. *Structure* 11: 1431-1443.

CHROMOSOMAL LOCATION

Genetic locus: SCO1 (human) mapping to 17p13.1; Sco1 (mouse) mapping to 11 B3.

SOURCE

SCO1 (D-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 183-210 within an internal region of SCO1 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.

SCO1 (D-1) is available conjugated to agarose (sc-398001 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398001 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398001 PE), fluorescein (sc-398001 FITC), Alexa Fluor® 488 (sc-398001 AF488), Alexa Fluor® 546 (sc-398001 AF546), Alexa Fluor® 594 (sc-398001 AF594) or Alexa Fluor® 647 (sc-398001 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398001 AF680) or Alexa Fluor® 790 (sc-398001 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398001 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

APPLICATIONS

CO1 (D-1) is recommended for detection of SCO1 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 SCO1 siRNA (h): sc-61505, SCO1 siRNA (m): sc-61506, SCO1 shRNA Plasmid (h): sc-61505-SH, SCO1 shRNA Plasmid (m): sc-61506-SH, SCO1 shRNA (h) Lentiviral Particles: sc-61505-V and SCO1 shRNA (m) Lentiviral Particles: sc-61506-V.

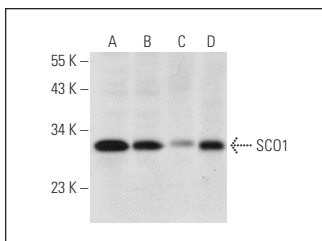
Molecular Weight of SCO1: 29 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, HeLa whole cell lysate: sc-2200 or human liver extract: sc-363766.

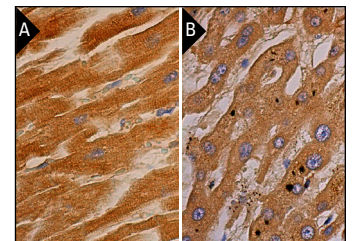
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



SCO1 (D-1): sc-398001. Western blot analysis of SCO1 expression in Hep G2 (A), HeLa (B) and IMR-32 (C) whole cell lysates and human liver tissue extract (D).



SCO1 (D-1): sc-398001. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes (B).

SELECT PRODUCT CITATIONS

- Wei, X.B., et al. 2017. Synthesis of cytochrome c oxidase 1 (SCO1) inhibits Insulin sensitivity by decreasing copper levels in adipocytes. *Biochem. Biophys. Res. Commun.* 491: 814-820.

RESEARCH USE

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