

SCO2 (G-14): sc-49110

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.
- Hornig, Y.C., et al. 2004. Specific copper transfer from the COX17 metallo-chaperone to both SCO1 and COX11 in the assembly of yeast cytochrome c oxidase. *J. Biol. Chem.* 279: 35334-35340.
- Leary, S.C., et al. 2004. Human SCO1 and SCO2 have independent, cooperative functions in copper delivery to cytochrome c oxidase. *Hum. Mol. Genet.* 13: 1839-1848.
- Williams, J.C., et al. 2005. Crystal structure of human SCO1: implications for redox signaling by a mitochondrial cytochrome c oxidase assembly protein. *J. Biol. Chem.* 280: 15202-15211.

CHROMOSOMAL LOCATION

Genetic locus: SCO2 (human) mapping to 22q13.33.

SOURCE

SCO2 (G-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of SCO2 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-49110 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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

APPLICATIONS

SCO2 (G-14) is recommended for detection of SCO2 of human origin by Western Blotting (starting dilution 1:200, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for SCO2 siRNA (h): sc-61507, SCO2 shRNA Plasmid (h): sc-61507-SH and SCO2 shRNA (h) Lentiviral Particles: sc-61507-V.

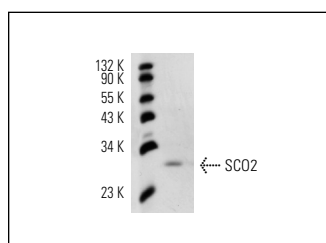
Molecular Weight of SCO2: 26 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



SCO2 (G-14): sc-49110. Western blot analysis of SCO2 expression in Hep G2 whole cell lysate.

SELECT PRODUCT CITATIONS

- Qi, Z., et al. 2011. Exercise training attenuates oxidative stress and decreases p53 protein content in skeletal muscle of type 2 diabetic Goto-Kakizaki rats. *Free Radic. Biol. Med.* 50: 794-800.
- Madan, E., et al. 2013. SCO2 induces p53-mediated apoptosis by Thr845 phosphorylation of ASK-1 and dissociation of the ASK-1-Trx complex. *Mol. Cell. Biol.* 33: 1285-1302.

RESEARCH USE

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