SANTA CRUZ BIOTECHNOLOGY, INC.

SCOT (A-23): sc-133988

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

SCOT, also known as OXCT1 (3-oxoacid CoA transferase 1) or OXCT, is a 520 amino acid protein that localizes to the mitochondrial matrix and belongs to the 3-oxoacid CoA-transferase family. Expressed abundantly in heart and also present in brain, muscle and kidney, SCOT exists as a homodimer that catalyzes the conversion of succinyl-CoA and a 3-oxo acid to succinate and a 3-oxoacyl-CoA, a reaction that is essential for ketone body catabolism. Defects in the gene encoding SCOT are associated with ketoacidosis, a build up of ketones in the blood that can lead to diabetic coma and, if untreated, death. The gene encoding SCOT maps to human chromosome 5, which contains 181 million base pairs and comprises nearly 6% of the human genome. Deletion of the p arm of chromosome 5 leads to Cri du chat syndrome, while deletion of the q arm or of chromosome 5 altogether is common in therapy-related acute myelogenous leukemias and myelodysplastic syndrome.

REFERENCES

1. Pérez-Cerdá, C., et al. 1992. A new case of succinyl-CoA: acetoacetate transferase deficiency. J. Inherit. Metab. Dis. 15: 371-373.
2. Mitchell, G.A., et al. 1995. Medical aspects of ketone body metabolism. Clin. Invest. Med. 18: 193-216.
3. Kassovska-Bratinova, S., et al. 1996. Succinyl-CoA: 3-oxoacid-CoA transferase (SCOT): human cDNA cloning, human chromosomal mapping to 5p13, and mutation detection in a SCOT-deficient patient. Am. J. Hum. Genet. 59: 519-528.
4. Niezen-Koning, K.E., et al. 1997. Succinyl-CoA:acetoacetate transferase deficiency: identification of a new patient with a neonatal onset and review of the literature. Eur. J. Pediatr. 156: 870-873.
5. Song, X.Q., et al. 1998. Succinyl-CoA:3-ketoacid CoA transferase (SCOT) deficiency: two pathogenic mutations, V133E and C456F, in Japanese siblings. Hum. Mutat. 12: 83-88.

CHROMOSOMAL LOCATION

Genetic locus: OXCT1 (human) mapping to 5p13.1; Oxct1 (mouse) mapping to 15 A1.

SOURCE

SCOT (A-23) is an affinity purified rabbit polyclonal antibody raised against synthetic SCOT peptide of human origin.

PRODUCT

Each vial contains 50 µg IgG in 500 µl PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

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

SCOT (A-23) is recommended for detection of SCOT of mouse, rat and 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for SCOT siRNA (h): sc-91720, SCOT siRNA (m): sc-153266, SCOT shRNA Plasmid (h): sc-91720-SH, SCOT shRNA Plasmid (m): sc-153266-SH, SCOT shRNA (h) Lentiviral Particles: sc-91720-V and SCOT shRNA (m) Lentiviral Particles: sc-153266-V.

Molecular Weight (predicted) of SCOT: 56 kDa.

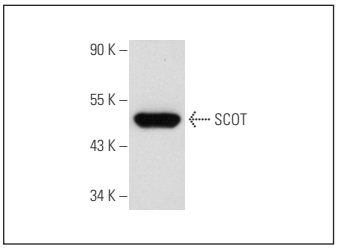
Molecular Weight (observed) of SCOT: 50 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, mouse heart extract: sc-2254 or Hep G2 cell lysate: sc-2227.

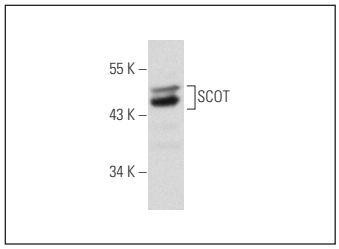
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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).

DATA



SCOT (A-23): sc-133988. Western blot analysis of SCOT expression in mouse heart tissue extract.



SCOT (A-23): sc-133988. Western blot analysis of SCOT expression in HeLa whole cell lysate.

SELECT PRODUCT CITATIONS

1. Chiavarina, B., et al. 2011. Pyruvate kinase expression (PKM1 and PKM2) in cancer-associated fibroblasts drives stromal nutrient production and tumor growth. Cancer Biol. Ther. 12: 1101-1113.
2. Sanchez-Alvarez, R., et al. 2013. Ethanol exposure induces the cancer-associated fibroblast phenotype and lethal tumor metabolism: implications for breast cancer prevention. Cell Cycle 12: 289-301.

PROTOCOLS

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