

MCT4 (C-17): sc-14930

BACKGROUND

Monocarboxylates, such as lactate and pyruvate, play an integral role in cellular metabolism. Lactic acid is produced in large quantities as a result of glycolysis, which provides the majority of ATP to cells under normal physiological conditions. However, accumulation of lactic acid leads to a decrease in intracellular pH and cessation of glycolysis. In order for glycolysis to continue at a high rate, lactic acid must be transported out of the cell. This transport process is carried out by a family of monocarboxylate transporters (MCTs), which function as proton symports and are stereoselective for L-lactate. The MCT family consists of at least 8 members, MCT1-8, which contain between 10-12 transmembrane-helical (TM) domains, with the amino and carboxy termini located in the cytoplasm. MCT1 is widely expressed and is the major form of MCTs in tumor cells and erythrocytes. MCT2 is highly expressed in liver and testis, while MCT3 and MCT4 are predominantly expressed in skeletal muscle.

CHROMOSOMAL LOCATION

Genetic locus: SLC16A3 (human) mapping to 17q25.3; Slc16a3 (mouse) mapping to 11 E2.

SOURCE

MCT4 (C-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of MCT4 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-14930 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

MCT4 (C-17) is recommended for detection of MCT4 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)], 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).

MCT4 (C-17) is also recommended for detection of MCT4 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for MCT4 siRNA (h2): sc-45892, MCT4 siRNA (m): sc-40120, MCT4 shRNA Plasmid (h2): sc-45892-SH, MCT4 shRNA Plasmid (m): sc-40120-SH, MCT4 shRNA (h2) Lentiviral Particles: sc-45892-V and MCT4 shRNA (m) Lentiviral Particles: sc-40120-V.

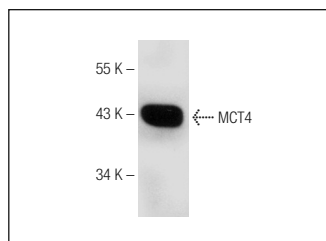
Molecular Weight of MCT4: 43 kDa.

Positive Controls: mouse skeletal muscle extract: sc-364250 or HeLa whole cell lysate: sc-2200.

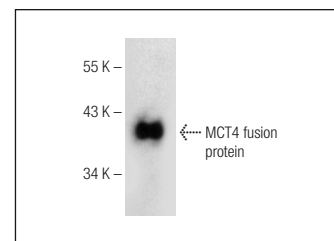
RECOMMENDED SECONDARY REAGENTS

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



MCT4 (C-17): sc-14930. Western blot analysis of MCT4 expression in mouse skeletal muscle tissue extract.



MCT4 (C-17): sc-14930. Western blot analysis of human recombinant MCT4 fusion protein.

SELECT PRODUCT CITATIONS

- Akerud, H., et al. 2009. Lactate distribution in culture medium of human myometrial biopsies incubated under different conditions. *Am. J. Physiol. Endocrinol. Metab.* 297: E1414-E1419.
- Nguyen, T.T. and Bonanno, J.A. 2011. Bicarbonate, NBCe1, NHE, and carbonic anhydrase activity enhance lactate-H⁺ transport in bovine corneal endothelium. *Invest. Ophthalmol. Vis. Sci.* 52: 8086-8093.
- Nguyen, T.T. and Bonanno, J.A. 2012. Lactate-H⁺ transport is a significant component of the *in vivo* corneal endothelial pump. *Invest. Ophthalmol. Vis. Sci.* 53: 2020-2029.

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.


 MONOS
Satisfaction
Guaranteed

Try **MCT4 (D-1): sc-376140** or **MCT4 (F-10): sc-376101**, our highly recommended monoclonal alternatives to MCT4 (C-17). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **MCT4 (D-1): sc-376140**.