SANTA CRUZ BIOTECHNOLOGY, INC.

MCT5 (C-17): sc-14934

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 eight members, MCT 1-8, 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 MCT in tumor cells and erythrocytes. MCT2 is highly ex-pressed in liver and testis, while MCT3 and MCT4 are predominantly expressed in skeletal muscle.

CHROMOSOMAL LOCATION

Genetic locus: SLC16A4 (human) mapping to 1p13.3; Slc16a4 (mouse) mapping to 3 F2.3.

SOURCE

MCT5 (C-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of MCT5 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-14934 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

MCT5 (C-17) is recommended for detection of MCT5 of human origin and Slc16a4 of mouse and rat 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).

MCT5 (C-17) is also recommended for detection of MCT5 of human origin and Slc16a4 of mouse and rat origin in additional species, including equine.

Suitable for use as control antibody for MCT5 siRNA (h): sc-45893, SLC16A4 siRNA (m): sc-153492, MCT5 shRNA Plasmid (h): sc-45893-SH, SLC16A4 shRNA Plasmid (m): sc-153492-SH, MCT5 shRNA (h) Lentiviral Particles: sc-45893-V and SLC16A4 shRNA (m) Lentiviral Particles: sc-153492-V

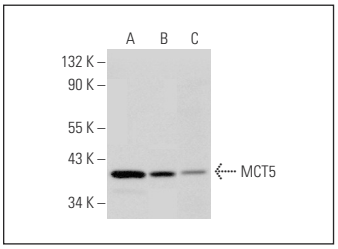
Molecular Weight of MCT5: 54 kDa.

Positive Controls: WI-38 whole cell lysate: sc-364260, C6 whole cell lysate: sc-364373 or mouse prostate extract: sc-364249.

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



MCT5 (C-17): sc-14934. Western blot analysis of MCT5 expression in WI-38 (**A**) and C6 (**B**) whole cell lysates and mouse prostate tissue extract (**C**).

SELECT PRODUCT CITATIONS

1. Bickham, D.C., et al. 2006. The effects of short-term sprint training on MCT expression in moderately endurance-trained runners. Eur. J. Appl. Physiol. 96: 636-643.
2. Mohr, M., et al. 2007. Effect of two different intense training regimens on skeletal muscle ion transport proteins and fatigue development. Am. J. Physiol. Regul. Integr. Comp. Physiol. 292: R1594-R1602.
3. Wetzel, P., et al. 2007. Carbonic anhydrase XIV in skeletal muscle: subcellular localization and function from wild-type and knockout mice. Am. J. Physiol., Cell Physiol. 293: C358-C366.
4. Scheibe, R.J., et al. 2008. Carbonic anhydrases IV and IX: subcellular localization and functional role in mouse skeletal muscle. Am. J. Physiol., Cell Physiol. 294: C402-C412.
5. Hallerdei, J., et al. 2010. T tubules and surface membranes provide equally effective pathways of carbonic anhydrase-facilitated lactic acid transport in skeletal muscle. PLoS ONE 5: e15137.

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.