SANTA CRUZ BIOTECHNOLOGY, INC.

MCT9 (T-14): sc-104986

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, thus, to a 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. MCT9 (monocarboxylate transporter 9), also known as SLC16A9 (solute carrier family 16, member 9 (monocarboxylic acid transporter 9)) or C10orf36, is a 509 amino acid multi-pass membrane protein that belongs to the major facilitator superfamily. Like other MCT proteins, MCT9 functions as a monocarboxylate transporter that catalyzes the rapid proton-linked transport of monocarboxylates across the plasma membrane.

REFERENCES

1. Halestrap, A.P. and Price, N.T. 1999. The proton-linked monocarboxylate transporter (MCT) family: structure, function and regulation. Biochem. J. 343: 281-299.
2. Juel, C. and Halestrap, A.P. 1999. Lactate transport in skeletal muscle-role and regulation of the monocarboxylate transporter. J. Physiol. 517: 633-642.
3. Halestrap, A.P. and Meredith, D. 2004. The SLC16 gene family-from monocarboxylate transporters (MCTs) to aromatic amino acid transporters and beyond. Pflugers Arch. 447: 619-628.
4. Koho, N.M., Hyyppä, S. and Pösö, A.R. 2006. Monocarboxylate transporters (MCT) as lactate carriers in equine muscle and red blood cells. Equine Vet. J. Suppl. 36: 354-358.
5. Bonen, A., Heynen, M. and Hatta, H. 2006. Distribution of monocarboxylate transporters MCT1-MCT8 in rat tissues and human skeletal muscle. Appl. Physiol. Nutr. Metab. 31: 31-39.
6. Morris, M.E. and Felmlee, M.A. 2008. Overview of the proton-coupled MCT (SLC16A) family of transporters: characterization, function and role in the transport of the drug of abuse γ-hydroxybutyric acid. AAPS J. 10: 311-321.
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CHROMOSOMAL LOCATION

Genetic locus: SLC16A9 (human) mapping to 10q21.2.

SOURCE

MCT9 (T-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of MCT9 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-104986 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MCT9 (T-14) is recommended for detection of MCT9 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).

MCT9 (T-14) is also recommended for detection of MCT9 in additional species, including bovine and porcine.

Suitable for use as control antibody for MCT9 siRNA (h): sc-90831, MCT9 shRNA Plasmid (h): sc-90831-SH and MCT9 shRNA (h) Lentiviral Particles: sc-90831-V.

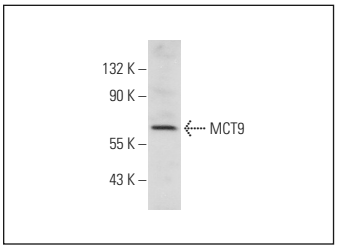
Molecular Weight of MCT9: 56 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

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



MCT9 (T-14): sc-104986. Western blot analysis of MCT9 expression in Jurkat whole cell lysate.

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.

PROTOCOLS

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