

MCT7/Slc16a6 (D-17): sc-51323

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. MCT7, known as Slc16a6 in mouse and rat, catalyzes the transport of various monocarboxylates across the plasma membrane and is thought to have unique tissue distribution compared to other MCT family members.

REFERENCES

- Price, N.T., et al. 1998. Cloning and sequencing of four new mammalian monocarboxylate transporter (MCT) homologues confirms the existence of a transporter family with an ancient past. *Biochem. J.* 329: 321-328.
- Online Mendelian Inheritance in Man, OMIM™. 1999. Johns Hopkins University, Baltimore, MD. MIM Number: 603880. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Yokel, R.A., et al. 2002. Aluminum citrate uptake by immortalized brain endothelial cells: implications for its blood-brain barrier transport. *Brain Res.* 930: 101-110.
- Boyd, LM., et al. 2005. Osmolarity regulates gene expression in intervertebral disc cells determined by gene array and real-time quantitative RT-PCR. *Ann. Biomed. Eng.* 33: 1071-1077.
- Bonen, A., et al. 2006. Distribution of monocarboxylate transporters MCT1-MCT8 in rat tissues and human skeletal muscle. *Appl. Physiol. Nutr. Metab.* 31: 31-39.

CHROMOSOMAL LOCATION

Genetic locus: SLC16A6 (human) mapping to 17q24.2; Slc16a6 (mouse) mapping to 11 E1.

SOURCE

MCT7/Slc16a6 (D-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of MCT7 of human origin.

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.

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-51323 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MCT7/Slc16a6 (D-17) is recommended for detection of MCT7 of human origin and Slc16a6 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

MCT7/Slc16a6 (D-17) is also recommended for detection of MCT7 in additional species, including equine.

Suitable for use as control antibody for MCT7 siRNA (h): sc-106899, Slc16a6 siRNA (m): sc-153494, MCT7 shRNA Plasmid (h): sc-106899-SH, Slc16a6 shRNA Plasmid (m): sc-153494-SH, MCT7 shRNA (h) Lentiviral Particles: sc-106899-V and Slc16a6 shRNA (m) Lentiviral Particles: sc-153494-V.

Molecular Weight of MCT7: 65 kDa.

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) 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.

RESEARCH USE

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