

MCT14 (K-13): sc-107734

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. MCT14 (monocarboxylate transporter 14), also known as SLC16A14 (solute carrier family 16, member 14), is a 510 amino acid multi-pass membrane protein that belongs to the MCT family and functions as a proton-linked monocarboxylate transporter, effectively catalyzing the rapid transport of monocarboxylates across the membrane. Multiple isoforms of MCT14 exist due to alternative splicing events.

REFERENCES

- Halestrap, A.P. and Price, N.T. 1999. The proton-linked monocarboxylate transporter (MCT) family: structure, function and regulation. *Biochem. J.* 343: 281-299.
- 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.
- Koho, N.M., et al. 2006. Monocarboxylate transporters (MCT) as lactate carriers in equine muscle and red blood cells. *Equine Vet. J. Suppl.* 354-358.
- Morris, M.E. and Felmler, 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.
- Hashimoto, T. and Brooks, G.A. 2008. Mitochondrial lactate oxidation complex and an adaptive role for lactate production. *Med. Sci. Sports Exerc.* 40: 486-494.
- Meredith, D. and Christian, H.C. 2008. The SLC16 monocarboxylate transporter family. *Xenobiotica* 38: 1072-1106.

CHROMOSOMAL LOCATION

Genetic locus: SLC16A14 (human) mapping to 2q36.3.

SOURCE

MCT14 (K-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of MCT14 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-107734 P, (100 μ g 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

MCT14 (K-13) is recommended for detection of MCT14 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

Suitable for use as control antibody for MCT14 siRNA (h): sc-94568, MCT14 shRNA Plasmid (h): sc-94568-SH and MCT14 shRNA (h) Lentiviral Particles: sc-94568-V.

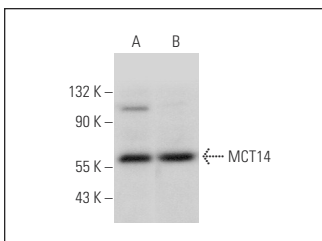
Molecular Weight of MCT14: 56 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409 or U-698-M whole cell lysate: sc-364799.

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



MCT14 (K-13): sc-107734. Western blot analysis of MCT14 expression in IMR-32 (A) and U-698-M (B) whole cell lysates.

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.