

# MCT11 (L-13): sc-107728

## 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. Proteins belonging to the MCT family contain between 10-12 transmembrane-helical domains, with the amino and carboxy-termini located in the cytoplasm. MCT11 (monocarboxylate transporter 11), also known as SLC16A11 (solute carrier family 16 member 11), is a 471 proton-linked monocarboxylate transporter that catalyzes the rapid transport of monocarboxylates across the plasma membrane.

## 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.
- Juel, C. and Halestrap, A.P. 1999. Lactate transport in skeletal muscle-role and regulation of the monocarboxylate transporter. *J. Physiol.* 517: 633-642.
- Enerson, B.E. and Drewes, L.R. 2003. Molecular features, regulation, and function of monocarboxylate transporters: implications for drug delivery. *J. Pharm. Sci.* 92: 1531-1544.
- 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.
- Pierre, K. and Pellerin, L. 2005. Monocarboxylate transporters in the central nervous system: distribution, regulation and function. *J. Neurochem.* 94: 1-14.
- Lam, W.K., Felmlee, M.A. and Morris, M.E. 2010. Monocarboxylate Transporter (MCT)-mediated transport of  $\gamma$ -hydroxybutyric acid in human intestinal Caco-2 cells. *Drug Metab. Dispos.* 38: 441-447.
- Nagai, A., Takebe, K., Nio-Kobayashi, J., Takahashi-Iwanaga, H. and Iwanaga, T. 2010. Cellular expression of the monocarboxylate transporter (MCT) family in the placenta of mice. *Placenta* 31: 126-133.

## CHROMOSOMAL LOCATION

Genetic locus: SLC16A11 (human) mapping to 17p13.1.

## SOURCE

MCT11 (L-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of MCT11 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.

## PRODUCT

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

Blocking peptide available for competition studies, sc-107728 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

MCT11 (L-13) is recommended for detection of MCT11 of human 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).

MCT11 (L-13) is also recommended for detection of MCT11 in additional species, including equine, canine and porcine.

Suitable for use as control antibody for MCT11 siRNA (h): sc-93713, MCT11 shRNA Plasmid (h): sc-93713-SH and MCT11 shRNA (h) Lentiviral Particles: sc-93713-V.

Molecular Weight of MCT11: 48 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **MCT11 (G-4): sc-515145**, our highly recommended monoclonal alternative to MCT11 (L-13).