

# MCT4 (G-9): sc-376139

## 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, MCT1-8, 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 expressed in liver and testis, while MCT3 and MCT4 are predominantly expressed in skeletal muscle.

## CHROMOSOMAL LOCATION

Genetic locus: SLC16A3 (human) mapping to 17q25.3; Slc16a3 (mouse) mapping to 11 E2.

## SOURCE

MCT4 (G-9) is a mouse monoclonal antibody raised against amino acids 376-465 mapping within a C-terminal cytoplasmic domain of MCT4 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

MCT4 (G-9) is recommended for detection of MCT4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (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 MCT4 siRNA (h2): sc-45892, MCT4 siRNA (m): sc-40120, MCT4 shRNA Plasmid (h2): sc-45892-SH, MCT4 shRNA Plasmid (m): sc-40120-SH, MCT4 shRNA (h2) Lentiviral Particles: sc-45892-V and MCT4 shRNA (m) Lentiviral Particles: sc-40120-V.

Molecular Weight of MCT4: 43 kDa.

Positive Controls: PC-3 cell lysate: sc-2220, SJRH30 cell lysate: sc-2287 or Neuro-2A whole cell lysate: sc-364185.

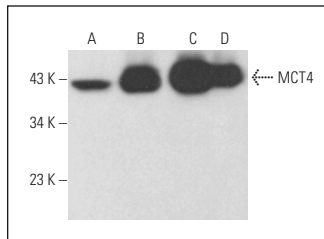
## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

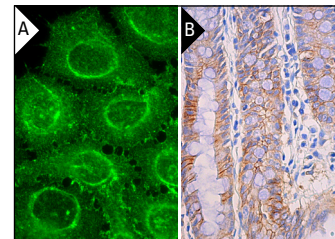
## RESEARCH USE

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

## DATA



MCT4 (G-9): sc-376139. Western blot analysis of MCT4 expression in PC-3 (A), SJRH30 (B), BC<sub>3</sub>H1 (C) and Neuro-2A (D) whole cell lysates.



MCT4 (G-9): sc-376139. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane and cytoskeletal localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human rectum tissue showing membrane and cytoplasmic staining of glandular cells (B).

## SELECT PRODUCT CITATIONS

- Ziegler, K., et al. 2016. Butyric acid increases transepithelial transport of ferulic acid through upregulation of the monocarboxylate transporters SLC16A1 (MCT1) and SLC16A3 (MCT4). *Arch. Biochem. Biophys.* 599: 3-12.
- Van Ryment, E., et al. 2017. Chronic exposure to short-chain fatty acids modulates transport and metabolism of microbiome-derived phenolics in human intestinal cells. *J. Nutr. Biochem.* 39: 156-168.
- Kendrick, A.A., et al. 2017. CD147: a small molecule transporter ancillary protein at the crossroad of multiple hallmarks of cancer and metabolic reprogramming. *Oncotarget* 8: 6742-6762.
- Wu, Q., et al. 2021. Downregulation of caveolin-1 promotes murine breast cancer cell line progression by highly glycosylated CD147. *Anticancer Drugs* 32: 626-634.
- Hu, X., et al. 2021. Blocking MCT4 SUMOylation inhibits the growth of breast cancer cells. *Mol. Carcinog.* 60: 702-714.
- Okubo, A., et al. 2021. CD147 is essential for the development of psoriasis via the induction of Th17 cell differentiation. *Int. J. Mol. Sci.* 23: 177.
- Duan, X., et al. 2022. MCT4/lactate promotes PD-L1 glycosylation in triple-negative breast cancer cells. *J. Oncol.* 2022: 3659714.

## PROTOCOLS

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



See **MCT4 (D-1): sc-376140** for MCT4 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor<sup>®</sup> 488, 546, 594, 647, 680 and 790.