



## MCT6 (K-17): sc-51319

### 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. MCT6 is highly expressed in the kidneys and is thought to have a specificity for bumetanide, a loop diuretic involved in the treatment of edema. The high substrate specificity of MCT6 suggests a possible role in therapeutic drug transport and trafficking across the plasma membrane.

### 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 (Pt. 2): 321-328.
- Hadjiagapiou, C., et al. 2000. Mechanism(s) of butyrate transport in Caco-2 cells: role of monocarboxylate transporter 1. *Am. J. Physiol. Gastrointest. Liver Physiol.* 279: G775-780.
- Murakami, Y., et al. 2005. Functional characterization of human monocarboxylate transporter 6 (slc16a5). *Drug Metab. Dispos.* 33: 1845-1851.
- 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.
- Visser, W.E., et al. 2007. Thyroid hormone transport by monocarboxylate transporters. *Best Pract. Res. Clin. Endocrinol. Metab.* 21: 223-236.

### CHROMOSOMAL LOCATION

Genetic locus: SLC16A5 (human) mapping to 17q25.1.

### SOURCE

MCT6 (K-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of MCT6 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-51319 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### STORAGE

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

### APPLICATIONS

MCT6 (K-17) is recommended for detection of MCT6 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).

Suitable for use as control antibody for MCT6 siRNA (h): sc-106212, MCT6 shRNA Plasmid (h): sc-106212-SH and MCT6 shRNA (h) Lentiviral Particles: sc-106212-V.

Molecular Weight of MCT6: 58 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.