

# MCT13 (S-12): sc-109324

## 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. MCT13 (monocarboxylate transporter 13), also known as SLC16A13 (solute carrier family 16 member 13), is a 426 amino acid multi-pass membrane protein that belongs to the MCT transport family. Functioning as a proton-linked monocarboxylate transporter, MCT13 catalyzes the rapid transports of molecules, such as lactate, across the plasma membrane.

## REFERENCES

- 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.* 36: 354-358.
- Hirai, T., et al. 2007. PPAR $\alpha$  agonists positively and negatively regulate the expression of several nutrient/drug transporters in mouse small intestine. *Biol. Pharm. Bull.* 30: 2185-2190.
- 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  $\gamma$ -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.

## CHROMOSOMAL LOCATION

Genetic locus: SLC16A13 (human) mapping to 17p13.1; Slc16a13 (mouse) mapping to 11 B3.

## SOURCE

MCT13 (S-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of MCT13 of human origin.

## 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-109324 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

MCT13 (S-12) is recommended for detection of MCT13 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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).

MCT13 (S-12) is also recommended for detection of MCT13 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for MCT13 siRNA (h): sc-93687, MCT13 siRNA (m): sc-149326, MCT13 shRNA Plasmid (h): sc-93687-SH, MCT13 shRNA Plasmid (m): sc-149326-SH, MCT13 shRNA (h) Lentiviral Particles: sc-93687-V and MCT13 shRNA (m) Lentiviral Particles: sc-149326-V.

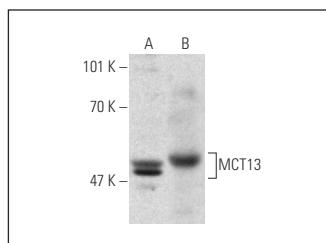
Molecular Weight of MCT13: 45 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, SK-BR-3 cell lysate: sc-2218 or mouse pancreas extract: sc-364244.

## 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<sup>TM</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>TM</sup> 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<sup>TM</sup> Mounting Medium: sc-24941.

## DATA



MCT13 (S-12): sc-109324. Western blot analysis of MCT13 expression in K-562 whole cell lysate (A) and mouse pancreas tissue extract (B).

## RESEARCH USE

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

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Try **MCT13 (D-12): sc-377128**, our highly recommended monoclonal alternative to MCT13 (S-12).