SANTA CRUZ BIOTECHNOLOGY, INC.

MCT2 (B-10): sc-271093

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.

REFERENCES

1. Halestrap, A.P., et al. 1997. Lactate transport in heart in relation to myocardial ischemia. Am. J. Cardiol. 80: 17A-25A.
2. Gerhart, D.Z., et al. 1997. Expression of monocarboxylate transporter MCT1 by brain endothelium and glia in adult and suckling rats. Am. J. Physiol. 273: E207-E213.
3. Lin, R.Y., et al. 1998. Human monocarboxylate transporter 2 (MCT2) is a high affinity pyruvate transporter. J. Biol. Chem. 273: 28959-28965.
4. 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: 321-328.
5. Juel, C., et al. 1999. Lactate transport in skeletal muscle—role and regulation of the monocarboxylate transporter. J. Physiol. 517: 633-642.
6. Halestrap, A.P., et al. 1999. The proton-linked monocarboxylate transporter (MCT) family: structure, function and regulation. Biochem. J. 343: 281-299.
7. Bonen, A. 2000. Lactate transporters (MCT proteins) in heart and skeletal muscles. Med. Sci. Sports Exerc. 32: 778-789.

CHROMOSOMAL LOCATION

Genetic locus: Slc16a7 (mouse) mapping to 10 D3.

SOURCE

MCT2 (B-10) is a mouse monoclonal antibody raised against amino acids 391-480 mapping at the C-terminus of MCT2 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

MCT2 (B-10) is recommended for detection of MCT2 of mouse 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MCT2 siRNA (m): sc-40116, MCT2 shRNA Plasmid (m): sc-40116-SH and MCT2 shRNA (m) Lentiviral Particles: sc-40116-V.

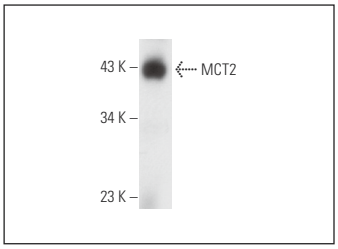
Molecular Weight of MCT2: 40 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, mouse testis extract: sc-2405 or LADMAC whole cell lysate: sc-364189.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



MCT2 (B-10): sc-271093. Western blot analysis of MCT2 expression in mouse testis tissue extract.

SELECT PRODUCT CITATIONS

1. Shin, B.C., et al. 2018. Neural deletion of glucose transporter isoform 3 creates distinct postnatal and adult neurobehavioral phenotypes. J. Neurosci. 38: 9579-9599.
2. Ding, R., et al. 2020. Redistribution of monocarboxylate 1 and 4 in hippocampus and spatial memory impairment induced by long-term ketamine administration. Front. Behav. Neurosci. 14: 60.

RESEARCH USE

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