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.

REFERENCE


CHROMOSOMAL LOCATION

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

SOURCE

MCT4 (F-10) 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 IgG1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MCT4 (F-10) is available conjugated to agarose (sc-376101 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376101 HRP), 200 µg/ml, for WB, IHCP and ELISA; to either phycoerythrin (sc-376101 PE), fluorescein (sc-376101 FITC), Alexa Fluor® 488 (sc-376101 AF488), Alexa Fluor® 546 (sc-376101 AF546), Alexa Fluor® 594 (sc-376101 AF594) or Alexa Fluor® 647 (sc-376101 AF647), 200 µg/ml, for WB (RGB), IF, HIC(P) and FCM; and to either Alexa Fluor® 680 (sc-376101 AF680) or Alexa Fluor® 790 (sc-376101 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

MCT4 (F-10) 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).


Molecular Weight of MCT4: 43 kDa.


DATA

SELECT PRODUCT CITATIONS


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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.