Anti-SLC16A3 / MCT 4 Antibody [PSH06-91]

HA722766

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human, Monkey
Applications:	WB, IF-Cell, IHC-P, FC
Molecular Wt:	Predicted band size: 50 kDa
Clone number:	PSH06-91

Description: Monocarboxylate transporter 4 (MCT4) also known as solute carrier family 16 member 3 is a protein that in humans is encoded by the SLC16A3 gene. Northern and western blotting and EST database analyses showed MCT4 to be widely expressed and especially so in glycolytic tissues such as white skeletal muscle fibers, astrocytes, white blood cells, chondrocytes, and some mammalian cell lines. Because of this, it has been proposed that the properties of MCT4 might be especially appropriate for export of lactate derived from glycolysis. MCT4 exhibits a lower affinity for most substrates and inhibitors than MCT1, with Km and Ki values some 5–10-fold higher. The high Km for pyruvate may be especially significant as this avoids loss of pyruvate from the cell which, were it to occur, would prevent removal of the reduced form of nicotinamide adenine dinucleotide (NADH) produced in glycolysis by reduction of pyruvate to lactate. MCT4 can be upregulated by HIF-1α and AMPK.

Immunogen: Recombinant protein within human SLC16A3 aa 385-465.

Positive control: HeLa cell lysate, HepG2 cell lysate, HCT 116 cell lysate, NCI-H441 cell lysate, COS-1 cell lysate, HeLa, human placenta tissue, human rectum tissue, human skeletal muscle tissue.

Subcellular location: Cell membrane, Basolateral cell membrane.

Database links: SwissProt: O15427 Human

Recommended Dilutions:

WB	1:20,000
IF-Cell	1:100
IHC-P	1:1,000
FC	1:1,000

Storage Buffer: PBS (pH7.4), 0.1% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.

Storage Instruction: Shipped at 4℃. Store at +4℃ short term (1-2 weeks). It is recommended to aliquot into single-use upon delivery. Store at -20℃ long term.

Purity: Protein A affinity purified.

Images

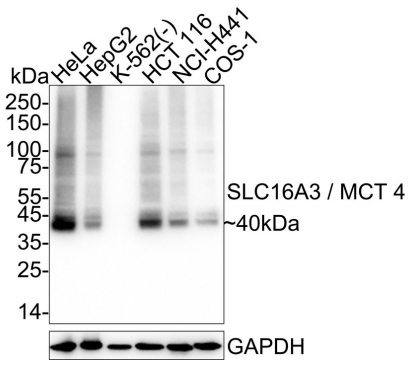

Fig1: Western blot analysis of SLC16A3 / MCT 4 on different lysates with Rabbit anti-SLC16A3 / MCT 4 antibody (HA722766) at 1/20,000 dilution.

Lane 1: HeLa cell lysate
Lane 2: HepG2 cell lysate
Lane 3: K-562 cell lysate (negative)
Lane 4: HCT 116 cell lysate
Lane 5: NCI-H441 cell lysate
Lane 6: COS-1 cell lysate

Lysates/proteins at 20 µg/Lane.

Predicted band size: 50 kDa
Observed band size: 40 kDa

Exposure time: 6 seconds; ECL: K1801;

4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (HA722766) at 1/20,000 dilution was used in 5% NFDM/TBST at 4℃ overnight. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1/50,000 dilution was used for 1 hour at room temperature.

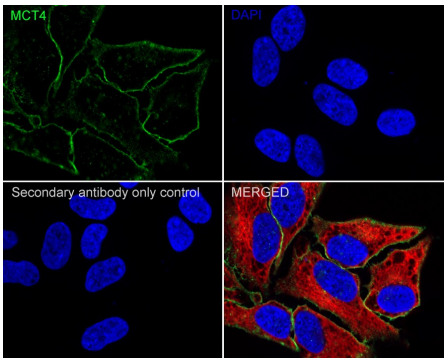

Fig2: Immunocytochemistry analysis of HeLa cells labeling SLC16A3 / MCT 4 with Rabbit anti-SLC16A3 / MCT 4 antibody (HA722766) at 1/100 dilution.

Cells were fixed in 4% paraformaldehyde for 20 minutes at room temperature, permeabilized with 0.1% Triton X-100 in PBS for 5 minutes at room temperature, then blocked with 1% BSA in 10% negative goat serum for 1 hour at room temperature. Cells were then incubated with Rabbit anti-SLC16A3 / MCT 4 antibody (HA722766) at 1/100 dilution in 1% BSA in PBST overnight at 4 ℃. Goat Anti-Rabbit IgG H&L (iFluor™ 488, HA1121) was used as the secondary antibody at 1/1,000 dilution. PBS instead of the primary antibody was used as the secondary antibody only control. Nuclear DNA was labelled in blue with DAPI.

Beta tubulin (M1305-2, red) was stained at 1/100 dilution overnight at +4℃. Goat Anti-Mouse IgG H&L (iFluor™ 594, HA1126) was used as the secondary antibody at 1/1,000 dilution.

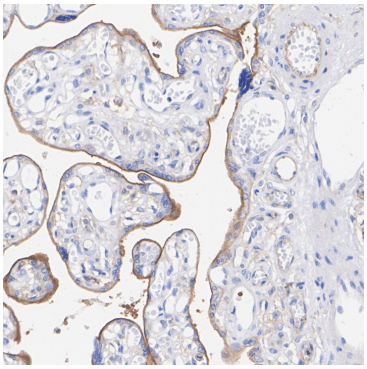

Fig3: Immunohistochemical analysis of paraffin-embedded human placenta tissue with Rabbit anti-SLC16A3 / MCT 4 antibody (HA722766) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA722766) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

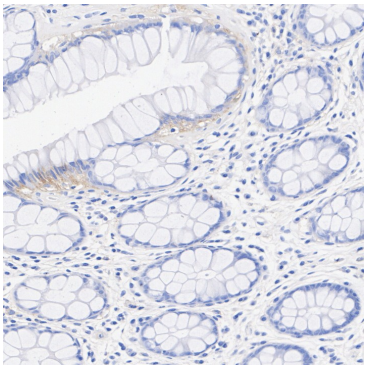

Fig4: Immunohistochemical analysis of paraffin-embedded human rectum tissue with Rabbit anti-SLC16A3 / MCT 4 antibody (HA722766) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA722766) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

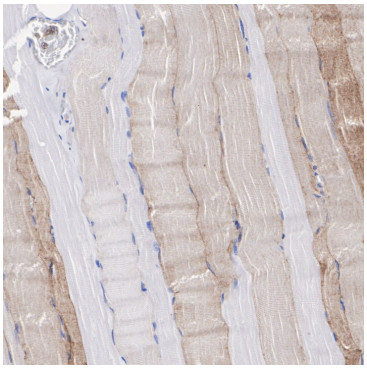

Fig5: Immunohistochemical analysis of paraffin-embedded human skeletal muscle tissue with Rabbit anti-SLC16A3 / MCT 4 antibody (HA722766) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA722766) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

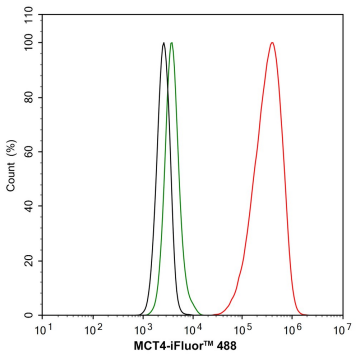

Fig6: Flow cytometric analysis of HeLa cells labeling SLC16A3 / MCT 4.

Cells were fixed and permeabilized. Then stained with the primary antibody (HA722766, 1/1,000) (red) compared with Rabbit IgG Isotype Control (green). After incubation of the primary antibody at +4℃ for an hour, the cells were stained with a iFluor™ 488 conjugate-Goat anti-Rabbit IgG Secondary antibody (HA1121) at 1/1,000 dilution for 30 minutes at +4℃. Unlabelled sample was used as a control (cells without incubation with primary antibody; black).

Background References

1. Monsorno K et al. Loss of microglial MCT4 leads to defective synaptic pruning and anxiety-like behavior in mice. Nat Commun. 2023 Sep
2. Babl N et al. MCT4 blockade increases the efficacy of immune checkpoint blockade. J Immunother Cancer. 2023 Oct