

Monocarboxylate Transporter 2 (MCT2) Antibodies

Cat. MCT21-P	Rat MCT2 Control peptide # 1	SIZE: 100 ug
Cat. MCT21-S	Rabbit Anti-Rat MCT2 antiserum # 1	SIZE: 100 ul
Cat. MCT21-A	Rabbit Anti-Rat MCT2 IgG # 1 (aff pure)	SIZE: 100 ug

Monocarboxylate such as lactate and pyruvate play an important role in cellular metabolism. Lactic acid is produced as the end product of glycolysis. Some tissues, such as white skeletal muscle and, red blood cells, use this pathway to generate most of their ATP under normal physiological conditions. Lactic acid, produced during normal glycolysis, must be transported out of cells to sustain maintain high rate of glycolysis. Failure to export lactic acid leads to accumulation of cellular lactic acid followed by an increase in pH and inhibition of glycolysis. Lactic acid transport is mediated by a group of proton-linked membrane transporters called **monocarboxylic acid transporters (MCTs)**. At least 9 MCT-related proteins (MCT1-9) have been identified in mammals that are expressed in a tissue specific manner.

MCT2/MOT2 (mouse 484 aa, rat 489 aa, human 478 aa, chromosome 12q13) is less widely distributed than MCT. It is associated with tissues that demonstrate a high uptake affinity for lactate and pyruvate such as the kidney and liver (for gluconeogenesis) and neurons (for oxidation). It may function in transporting lactate from intestine and erythrocytes. MCT1 is most closely related to MCT1 (~55% identity, whereas homolog with other MCT1-MCT8 isoforms is less (~35-53%). Both N and C-termini are predicted to be cytoplasmic.

Source of Antigen and Antibodies

Antigen	15-aa peptide of rat MCT2 (1) ; (Gene Accession #Q63344) Designated (MCT21-P or control peptide). conjugated to KLH
Location	~ within the cytoplasmic, C-terminus
Ab Host/type	Rabbit, polyclonal unpurified antiserum (MCT21-S) and Polyclonal IgG, purified over antigen-agarose (Cat # MCT21-A)
2-Ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
-ve control	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control

Form & Storage of Peptide and Antibodies

Antiserum (unpurified, undiluted)

100 ul/vial solution contains 0.05% sodium azide	50 ul/vial lyophilized powder
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Reconstitute powder 50 ul or 100 ul PBS

Affinity pure IgG

100 ug/100ul solution	50 ug/50 ul lyophilized powder
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Buffer: PBS+0.1% BSA+0.05% azide
Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide

100 ug/100 ul	50 ug/50 ul
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solution	lyophilized powder
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Buffer: PBS pH 7.5, contains 0.05% sodium azide
Reconstitute powder in PBS at 1 mg/ml.

Storage

Short-term: unopened, undiluted liquid vials for less than a week at 4oC.

Long-term: at -20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at -20oC or below.

Shipping: 4oC for solutions and room temp for lyophilized items.

Recommended Usage

Western Blotting 1-5 ug/ml for affinity pure using Chemiluminescence technique.

ELISA (1:10K-1:100K; using 50-100 ng of control peptide/well).

Histochemistry & Immunofluorescence: Not tested. We recommend the use of affinity purified antibody at 5-10 ug/ml in paraformaldehyde fixed tissues.

Specificity & Cross-reactivity

Rat MCT21-P sequence is 93% conserved in mouse, 66% in hamster MCT2. No significant sequence homology exists with either human MCT2 or other MCTs. For human MCT2, we recommend the use of antibody cat # MCT22-S. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (see detailed protocol at: www.4adi.com/data/abblock.html).

General References: (1) Jackson VN et al (1997) Biochem. J. 324, 447-453; Dao L et al (1998) J. Biol. Chem. 273, 28959-28965; Koehler-Stec EM et al (1998) Am. J. Physiol. 275, E516-E524; Price NT et al (1998) Biochem. J. 329, 321-328 (review); Halestrap AP and Price NT (1999) Biochem J. 343, 281-299 (review)

(2) Citations of ADI's Antibodies (see web site for updated list)

Brauchi S 2004 IHC	Am J Physiol Cell Physiol, Nov 2004 rat testes, paraffin section
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*This product is for in vitro research use only.

Related material available from ADI

Antibodies to MCT1-8; NBC1-3; NHE1-5, AE1-3; NCX, NKCC, NCC, AE1-3, OATs, OCTs, etc

MCT21-S-A-P	50126A
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