ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Monocarboxylate Transporter 5 (MCT5) Antibodies

Cat. MCT55-P	Human MCT5 Control peptide # 1	**SIZE**: 100 ug
Cat. MCT55-S	**Rabbit** Anti-Human MCT5 antiserum # 1	**SIZE**: 100 ul
Cat. MCT55-A	**Rabbit** Anti-Human MCT5 IgG # 1 (affinity 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. All tissues become dependent on this pathway during abnormal conditions such as hypoxia and ischaemia. 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. Some tissues, such as brain, heart, and red skeletal muscle, readily oxidize lactic acid, and must import lactic acid into the cells. 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.

MCT5/SLC16A4 (mouse 468-aa, human 487-aa, chromosome 1p13.1) shares 25% sequence homology with MCT1, but it has much shorter C-terminus than other MCTs. MCT5 has an Alu insertion even in the 3'-UTR and a truncated C-terminus. High expression of MCT5 has been observed in placenta. According to **new nomenclature**, the old MCT4 has now been reclassified as MCT5. This antibody has previously been listed as MCT42-S. Please consult our web site and Halestrap AP (1999) Biochem J. 343, 281-299 (review) for a detailed nomenclature.

Source of Antigen and Antibodies

Antigen	A 19-aa peptide of **human MCT5** (protein accession #, refs 1) ; **Designated (MCT55-P or control peptide)** conjugated to KLH; Epitope ~**Epitope location**~ C-terminal, Cytoplasmic domain #4
Ab Host/type	Rabbit, Polyclonal antiserum # HO22-S and IgG, purified over antigen-agarose (Cat # HO22-A)
2-Ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
-ve control IgG	Cat # 20009-1, Rabbit (non-immune) Serum IgG, purified, suitable for ELISA, Western, IHC as –ve control

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)
100ul solution lyophilized powder
Supplied 0.05% azide, **Reconstitute** powder in 100 ul PBS

Affinity pure IgG
100 ug/100ul solution lyophilized powder
Supplied in **Buffer**: PBS+0.1% BSA
Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide
100 ug/100 ul solution lyophilized powder
Supplied in Buffer: PBS pH 7.5,
Reconstitute powder in PBS at 1 mg/ml.

Storage

Short-term: unopened, undiluted liquid vials at -20OC and powder at 4oC or -20oC..

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 powder

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

Human MCT55-P sequence is 64% conserved in mouse MCT5. No significant sequence homology exists with other MCTs. Antibody crossreactivity in various species has not been studied. 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.

General References: (1) Price NT et al (1998) Biochem. J. 329, 321-328 (review); Halestrap AP and Price NT (1999) Biochem J. 343, 281-299 (review)

*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

Western Blot recycling kit (Use the same blot to probe with multiple antibodies NBC1-3)

ReadyBlot brain and Kidney Explorer (study distribution of proteins in pre-made protein

MCT55-S-A-P 71206A

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