ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Carnitine Palmitoyl Transferase-2 (CPT-2) Antibodies

Cat. # CPT21-S	Rabbit Anti-Mouse CPT-2 antiserum #1	**SIZE**: 100 ul
Cat. # CPT21-A	Rabbit Anti-Mouse CPT-2 IgG #1 (Aff pure)	**SIZE**: 100 ug
Cat. # CPT21-P	Mouse CPT-2 Control/blocking peptide	**SIZE**: 100 ug

In cells, excess of metabolic fuel is converted into fatty acids in cytosol and oxidized later in mitochondria to generate ATP and acetyl-CoA. In fatty acid synthesis, catalytic formation of malonyl-CoA (precursor for long-chain fatty acyl-CoA, LCFA-CoA) from acetyl-CoA by **Acetyl-CoA carboxylase** (**ACC-1**) is the rate limiting step. The translocation of LCFA-CoA from cytosol to mitochondria is catalyzed by two **carnitine palmitoyl transferases (CPT-1** & **CPT-2**) and regulated by **ACC-2,** the rate limiting step of mitochondrial fatty acid β-oxidation. Activities of ACC-1 and 2 are regulated by their phosphorylation by 5'-AMP-activated protein kinase **(AMPK)**. Diabetes deranges AMPK master-switch and represses the ACC-1 gene-expression and stimulates excessive fatty acid oxidation which in turn interferes with glucose metabolism.

Mitochondrial oxidation of LC-FCA is initiated by the sequential action of CPT-1, which is located in the outer membrane, and CPT-2, which is located in the inner membrane together with a carnitine-acylcarnitine translocase. **CPT-2 (mouse/rat/human 658-aa,** ~74 kDa, chromosome 1p32, ~20% identity with CPT1) is a ubiquitous malonyl-CoA-*insensitive* transferase localized in the inner mitochondrial membrane. It catalyzes the re-synthesis of acyl-CoA from acyl-carnitines. CPT-2 deficiency leads to the most commonly inherited, lipid myopathy in adults characterized by exercise-induced pain, stiffness, and myoglobinuria. The aa sequences of the two isoforms are ~61% identical.

Source of Antigen and Antibodies

Antigen	16-aa peptide from **mouse CPT-2L Gene Accession # P52825(1)**; **Designation (#CPT21-P, control/blocking peptide**) conjugated to KLH
Location	~C-terminus
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (#**CPT21**-S) and IgG, purified over antigen-agarose (Cat # **CPT21**-A)
2-Ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified, undiluted)

100 ul/vial solution — 50 ul/vial lyophilized powder

contains 0.05% sodium azide

Reconstitute powder 50 ul or 100 ul PBS

Affinity pure IgG

100 ug/100ul solution — 50 ug/50 ul lyophilized powder

Buffer: PBS+0.1% BSA+0.05% azide

Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide

100 ug/100 ul solution — 50 ug/50 ul lyophilized powder

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 powder.

Recommended Usage

Western Blotting (1:1K-5K for neat serum and 1-10 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 pure antibody at 2-20 ug/ml.

Specificity & Cross-reactivity

The mouse CPT21-P peptide is 93% conserved in rat and 86% in human CPT-2. No significant sequence homology of CPT21-P is seen with CPT-1 or any other protein. Antibody reactivity in various species is not established. The CPT21-P 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:web site).

General References: (1) Gelb BD (1993) Genomics 18, 651-655; Finnochiaro G (1991) PNAS 88, 661-665; Bonnefont JP (1996) Am. J. Hum. Genet. 58, 971-978; Britton CH (1995) PNAS 92, 1984-1988

**This product is for In vitro research use only.*

Related materials available from ADI

Antibodies: ACC-1, ACC2, CPT-1 and CPT2, AMPK1 & 2.

CPT21-S-A-P 70808A

Alpha Diagnostic Intl Inc., 6203 Woodlake Center Dr, San Antonio, TX 78244, USA; **Email**: service@4adi.com
☎ (800) 786-5777; (210) 561-9515; **Fax**: (210) 561-9544; **Web Site**: www.4adi.com