

Product Specification Sheet

**Carnitine Palmitoyl Transferase-2 (CPT-2) Antibodies**

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

<b>Antigen</b>	16-aa peptide from <b>mouse CPT-2L Gene Accession # P52825(1); Designation (#CPT21-P, control/blocking peptide) conjugated to KLH</b>
<b>Location</b>	~C-terminus
<b>Ab Host/type</b>	Rabbit, Polyclonal unpurified antiserum (#CPT21-S) and IgG, purified over antigen-agarose (Cat # CPT21-A)
<b>2-Ab</b>	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 contains 0.05% sodium azide  
 50 ul/vial lyophilized powder  
**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; Finnochiario 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

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