ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Acetyl-CoA Carboxylase-2 (ACC-2) Antibodies

Cat. # ACC21-S	Rabbit Anti-Rat ACC-2, antiserum	**SIZE**: 100 ul
Cat. # ACC21-A	Rabbit Anti-Rat ACC-2 IgG# 2 (Aff pure)	**SIZE**: 100 ug
Cat. # ACC21-P	Rat ACC-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 □-oxidation.

ACC-2 (rat 2456-aa, human 2483-aa, ~**280** kDa, chromosome 12q24.1), also known as ACC-beta, is predominantly present in heart and skeletal muscle and to a lesser extent in liver. An additional ACC-2 isoform (270 kDa) is present in liver. In contrast to ACC-1, which is cytosolic and catalyzes only fatty acid synthesis, ACC-2 co-localizes with CPT-1 in the 'contact sites' of the mitochondrial membranes and regulates mitochondrial fatty acid oxidation as well by inhibiting CPT-1 by its product malonyl-CoA. ACC-2 contains an unique 114-aa long N-terminus peptide, accounting in part, for its regulatory role in fatty acid oxidation. ACC2 deficient mice accumulate 10-30 fold less malonyl-CoA in heart and muscle and show 50% less fat in the adipose tissue.

Source of Antigen and Antibodies

Antigen	20-aa peptide of rat ACC2 (gene accession NP_446374 refs 1) ; **Designated (ACC21-P or control/blocking peptide).** **Epitope location** ~ N-terminus of rat ACC2
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (ACC21-S) and IgG, purified over antigen-agarose (Cat # ACC21-A) supplied in PBS+0.1% BSA+0.05% azide
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

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 rat ACC21-P peptide is 75% conserved in mouse and 60% in human ACC2. No significant sequence homology of ACC21-P is seen with ACC-1 or any other protein. Antibody reactivity in various species is not known. The ACC21-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 the web site).

General References: (1) Abe K et al (1998) BBA 1398, 347-352; Widemer J et al (1997) Biochem. J. 316, 915-922; Abu-Elheiga et al. (1997) J. Biol. Chem. 272, 10699; Abu-Elheiga et al. (2000) PNAS 97, 1444; Lee et al. (2001) J. Biol. Chem 276, 2576;; Hoppel et al. (2001) ABB 392,321; Fraser & Zammit (1998) Biochem. J. 329, 225.Stapleton et al. (1996) J. Biol. Chem. 271, 611; Mitchelhill et al. (1997) J. Biol. Chem. 272, 24475

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

Related materials available from ADI

ACC21-S-A-P	71208S

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