Accoa Carboxylase 2 (ACLY) Antibody – Rabbit Polyclonal

PRODUCT OVERVIEW

Product Name	AcCoA Carboxylase 2 (Acly), Polyclonal Antibody
Full Product Name	AcCoA Carboxylase 2 (ACC-2, Acetyl Coenzyme A Carboxylase 2)
Product Gene Name	anti-Acly antibody
Product Synonym Names	Anti -AcCoA Carboxylase 2 (ACC-2, Acetyl Coenzyme A Carboxylase 2)
Clonality	Polyclonal
Isotype	IgG
Host	Rabbit
Species Reactivity	Rat
Form/Format	Supplied as a liquid, neat serum, 0.1% sodium azide, 40% glycerol.
Purity/Purification	Serum Serum
Specificity	Recognizes AcCoA Carboxylase 2. No significant sequence homology is seen with ACC-1 or any other protein. Species Sequence Homology
Preparation and Storage	May be stored at 4 degree C for short-term only. For long-term storage, store at -20 degree C. Aliquots are stable for at least 12 months at -20 degree C. For maximum recovery of product, centrifuge the original vial after thawing and prior to removing the cap. Further dilutions can be made in assay buffer.
Molecular Weight	120,636 Da
Chromosome Location	Chromosome: 10; NC_005109.3 (88185495..88236092, complement). Location: 10q32.1
3D Structure	ModBase 3D Structure for P16638
Immunogen	Synthetic peptide consisting of 20aa sequence mapping near the N-terminus of rat ACC-2.
Product Categories/Family for anti-Acly antibody	Antibodies; Abs to CoEnzyme A
Applications Tested/Suitable for anti-Acly antibody	ELISA (EL/EIA), Western Blot (WB)
Application Notes for anti-Acly antibody	Suitable for use in ELISA and Western Blot. Dilution: Western Blot: 1:1000-1:5000 ELISA: 1:10,000-1:100,000 using 50-100ng of control peptide/well.

Related Product Information for anti-Acly antibody	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 b-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. ACC-2 (rat 2456aa, human 2483aa, ~280kD, 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 (270kD) 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 114aa 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.
Other Notes	Small volumes of anti-Acly antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for Acly purchase	MBS613161 is an antibody targeting Acly. Also known as AcCoA Carboxylase 2 (ACC-2, Acetyl Coenzyme A Carboxylase 2). Reactive in Rat. Host: Rabbit.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for Acly. It may not necessarily be applicable to this product.

NCBI GI #	161760632
NCBI GeneID	24159
NCBI Accession #	NP_001104565.1
UniProt Primary Accession #	P16638
UniProt Secondary Accession #	Q497C7; Q8VIQ1
UniProt Related Accession #	P16638
GenBank Nucleotide #	NM_001111095.1
NCBI Official Full Name	ATP-citrate synthase isoform 2
NCBI Official Synonym Full Names	ATP citrate lyase
NCBI Official Symbol	Acly
NCBI Official Synonym Symbols	ACL; Clatp
UniProt Protein Name	ATP-citrate synthase
UniProt Synonym Protein Names	ATP-citrate (pro-S-)-lyase; Citrate cleavage enzyme
Protein Family	ATP-citrate synthase
UniProt Gene Name	Acly
UniProt Entry Name	ACLY_RAT
NCBI Protein Information	ATP-citrate synthase; citrate cleavage enzyme; ATP-citrate (pro-S-)-lyase
NCBI Summary for Acly	catalyzes the synthesis of cytosolic acetyl-CoA; plays a role in lipid and cholesterol metabolism [RGD, Feb 2006]

UniProt Comments for Acly	ACLY: ATP citrate-lyase is the primary enzyme responsible for the synthesis of cytosolic acetyl-CoA in many tissues. Has a central role in de novo lipid synthesis. In nervous tissue it may be involved in the biosynthesis of acetylcholine. Homotetramer. 2 isoforms of the human protein are produced by alternative splicing. Protein type: Carbohydrate Metabolism - citrate (TCA) cycle; Lyase; EC 2.3.3.8; Transferase Cellular Component: nucleoplasm; mitochondrion; membrane; cytoplasm; plasma membrane; nucleus Molecular Function: ATP citrate synthase activity; metal ion binding; lyase activity; cofactor binding; succinate-CoA ligase (ADP-forming) activity; ATP binding Biological Process: acetyl-CoA metabolic process; lipid biosynthetic process; acetyl-CoA biosynthetic process; citrate metabolic process; cellular carbohydrate metabolic process; lipid metabolic process; fatty acid biosynthetic process
Research Articles on Acly	**1.** Differences between human and rodent pancreatic islets: low pyruvate carboxylase, atp citrate lyase, and pyruvate carboxylation and high glucose-stimulated acetoacetate in human pancreatic islets.
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