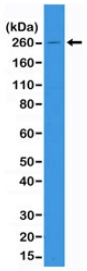
ACC1 Antibody / Acetyl-CoA Carboxylase 1 Antibody - Lipogenesis Enzyme [clone RM232] (R20259)

Catalog No.	Formulation	Size
R20259-0.1ML	Antibody in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	100 ul

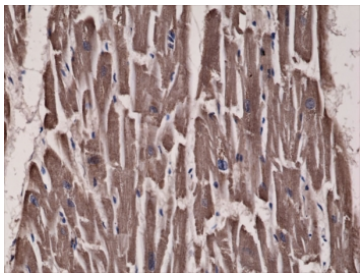
Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Predicted Reactivity	Mouse, Rat
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	RM232
Purity	Protein A purified from animal origin-free supernatant
UniProt	Q13085
Localization	Cytoplasmic
Applications	Immunohistochemistry (FFPE) : 1:300-1:500 (1) Western Blot : 1:1000-1:2000
Limitations	This ACC Antibody / Acetyl-CoA Carboxylase 1 Antibody - Lipogenesis Enzyme is available for research use only.



ACC1 Antibody for WB. Western blot analysis of Acetyl-CoA carboxylase 1 (ACACA) expression in human A431 cell lysate using ACC1 Antibody - Lipogenesis Enzyme (clone RM232). A band is detected at approximately 260 kDa, consistent with the predicted molecular weight of Acetyl-CoA carboxylase 1 (ACC1). This high molecular weight band represents the full-length cytosolic enzyme and may reflect regulatory phosphorylation states associated with metabolic signaling and lipogenic activity.



ACC Antibody Human Heart IHC. Immunohistochemistry analysis of Acetyl-CoA carboxylase 1 (ACACA) expression in FFPE human heart tissue using ACC1 Antibody - Lipogenesis Enzyme (clone RM232). Cytoplasmic HRP-DAB brown staining is observed in cardiac muscle cells, highlighting metabolic enzyme expression within cardiomyocytes, while nuclei are counterstained blue. The staining pattern is consistent with the cytosolic localization of ACC1 and reflects the metabolic activity of cardiac tissue.

Description

Acetyl-CoA carboxylase 1 (ACACA), commonly referred to as ACC1, is a cytosolic, biotin-dependent enzyme that catalyzes the conversion of acetyl-CoA to malonyl-CoA, representing the rate-limiting step in de novo fatty acid synthesis. As a central regulator of lipogenesis, ACC1 controls the production of fatty acids required for membrane biogenesis, energy storage, and lipid signaling. ACC Antibody enables detection of Acetyl-CoA carboxylase 1 in research applications focused on metabolic regulation, lipid biosynthesis, and cellular growth.

ACC antibody, also referred to as ACC1 antibody or ACACA antibody in the literature, recognizes a key metabolic enzyme that functions as a critical control point in anabolic metabolism. By generating malonyl-CoA, ACC1 drives fatty acid synthesis while also indirectly influencing cellular energy balance through regulation of lipid availability. In metabolically active tissues and proliferating cells, ACC1 expression and activity are tightly linked to increased lipogenic demand, making it a widely studied marker of metabolic reprogramming.

A defining feature of ACC1 biology is its regulation by phosphorylation through AMP-activated protein kinase (AMPK), which inhibits enzyme activity under low-energy conditions. This phosphorylation-dependent control allows ACC1 to act as a metabolic switch, rapidly suppressing lipid synthesis when cellular energy is limited. As a result, ACC antibody detection is frequently used to monitor metabolic signaling pathways, particularly those involving AMPK and nutrient sensing mechanisms.

ACC1 is commonly upregulated in cancer cells and other proliferative systems, where enhanced fatty acid synthesis supports membrane production, signaling lipid generation, and tumor growth. Increased ACC1 expression has been associated with metabolic adaptation in oncogenic pathways, reinforcing its importance as a functional marker in cancer metabolism studies. In contrast to ACC2, which regulates fatty acid oxidation at the mitochondrial interface, ACC1 operates within the cytoplasm to promote lipid biosynthesis, providing a clear functional distinction between these closely related enzymes.

Beyond its role in lipid synthesis, ACC1 contributes to broader metabolic network integration by linking carbohydrate metabolism, energy sensing, and lipid production. Its activity reflects cellular nutrient status and is influenced by hormonal and signaling inputs, including insulin and growth factor pathways. These characteristics make ACC1 a valuable target for studying coordinated metabolic regulation across physiological and disease contexts.

This ACC1 Antibody (clone RM232) targets Acetyl-CoA carboxylase 1 in research applications requiring detection of a central lipogenic enzyme, making it well suited for studies of fatty acid synthesis, metabolic signaling, and cellular energy homeostasis.

This antibody is part of the ACACA antibody collection, where additional Acetyl-CoA Carboxylase 1 antibodies can be explored.

Application Notes

The stated application concentrations are suggested starting points. Titration of the ACC Antibody / Acetyl-CoA Carboxylase 1 Antibody - Lipogenesis Enzyme may be required due to differences in protocols and secondary/substrate sensitivity.

1. A pH6 Citrate buffer or pH9 Tris/EDTA buffer HIER step is recommended for testing of FFPE tissue sections.

Immunogen

A peptide corresponding to human Acetyl CoA Carboxylase 1 was used as the immunogen for this recombinant ACC1 antibody.

Storage

Store the recombinant ACC1 antibody at -20oC (with glycerol) or aliquot and store at -20oC (without glycerol).

Alternate Names

ACC1 antibody, ACACA antibody, acetyl-CoA carboxylase 1 antibody, ACC antibody, lipogenesis enzyme antibody, fatty acid synthesis enzyme antibody