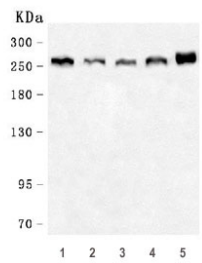
ACACA Antibody for WB / Acetyl-CoA Carboxylase 1 Western Blot Antibody (RQ7316)

Catalog No.	Formulation	Size
RQ7316	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q13085
Applications	Western blot: 0.5-1ug/ml
Limitations	This ACACA Antibody for WB / Acetyl-CoA Carboxylase 1 Western Blot Antibody is available for research use only.



ACACA Antibody for WB. Western blot analysis of ACACA / Acetyl-CoA carboxylase 1 expression in multiple species lysates using ACACA Antibody for WB. Lane 1: human HeLa cell lysate, Lane 2: human A549 cell lysate, Lane 3: rat brain lysate, Lane 4: mouse brain lysate, Lane 5: mouse NIH 3T3 cell lysate. A band is detected at approximately 260 kDa, consistent with the predicted molecular weight of Acetyl-CoA carboxylase 1 (ACACA). This high molecular weight band reflects the full-length cytosolic enzyme, which is known to undergo regulatory phosphorylation and may exhibit minor mobility variation depending on metabolic state.

Description

Acetyl-CoA carboxylase 1 (ACACA), also known as ACC1, is a large cytosolic enzyme that catalyzes the ATP-dependent conversion of acetyl-CoA to malonyl-CoA, representing the rate-limiting step in de novo fatty acid synthesis. As a central regulator of lipogenesis, ACACA integrates metabolic signals related to nutrient availability, energy status, and hormonal regulation. Because of its high molecular weight and extensive post-translational regulation, ACACA is most commonly

analyzed by western blot to assess protein expression, enzymatic regulation, and signaling pathway activity. ACACA Antibody for WB enables detection of ACC1 in denatured protein lysates, supporting detailed analysis of lipid metabolism pathways.

ACACA antibody, also referred to as Acetyl-CoA carboxylase 1 antibody or ACC1 antibody in the literature, recognizes a high molecular weight cytosolic enzyme that typically migrates at approximately 260 kDa under reducing SDS-PAGE conditions. In western blot applications, ACACA is often detected as a prominent band corresponding to the full-length enzyme, with additional bands or mobility shifts that may reflect phosphorylation, partial proteolysis, or conformational changes. This ACACA Antibody for WB is particularly useful for resolving these banding patterns, allowing interpretation of enzyme regulation and protein integrity across experimental conditions.

Western blot analysis of ACACA is especially informative in the context of metabolic signaling pathways. Phosphorylation of ACC1 by AMP-activated protein kinase (AMPK) results in enzymatic inhibition and can produce detectable mobility shifts or changes in band intensity, providing a functional readout of metabolic state. As a result, ACACA western blot detection is widely used to monitor lipogenic activity, nutrient signaling, and cellular responses to metabolic stress.

Because of its large size and susceptibility to proteolytic cleavage, ACACA may also appear as lower molecular weight fragments in western blot, particularly under suboptimal sample preparation conditions. These fragments can represent biologically relevant processing or experimental degradation, making careful interpretation of banding patterns important. Optimization of lysis conditions, protease inhibition, and electrophoresis parameters is therefore critical for accurate detection of full-length ACC1.

The expression level and phosphorylation status of ACACA vary across tissues and experimental models, reflecting differences in lipid synthesis activity and metabolic demand. Western blot detection of ACACA supports quantitative and qualitative analysis of enzyme regulation in studies of obesity, cancer metabolism, and metabolic disease.

This antibody targets ACACA in research applications requiring reliable western blot detection of a central metabolic enzyme, making it well suited for studies of fatty acid synthesis, metabolic signaling, and cellular energy regulation.

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

Application Notes

Optimal dilution of the ACACA Antibody for WB / Acetyl-CoA Carboxylase 1 Western Blot Antibody should be determined by the researcher.

Immunogen

Amino acids DSIIHMTQHISPTQRAEVIR were used as the immunogen for the ACACA antibody.

Storage

After reconstitution, the ACACA antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

ACACA antibody, ACC1 antibody, Acetyl-CoA carboxylase antibody, fatty acid synthesis enzyme antibody, lipogenesis marker antibody

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