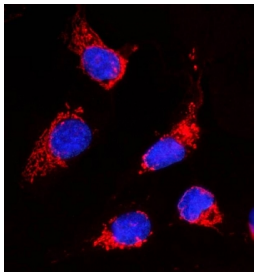
Acetyl-CoA Carboxylase 1 Antibody for IF / ACACA Immunofluorescence Antibody (RQ7317)

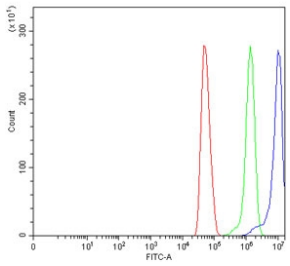
Catalog No.	Formulation	Size
RQ7317	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

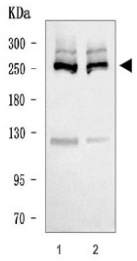
Availability	1-3 business days
Species Reactivity	Human
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q13085
Localization	Cytoplasmic
Applications	Western Blot : 0.5-1ug/ml Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells Direct ELISA : 0.1-0.5ug/ml
Limitations	This Acetyl-CoA Carboxylase 1 Antibody for IF / ACACA Immunofluorescence Antibody is available for research use only.



Acetyl-CoA Carboxylase 1 Antibody for IF. Immunofluorescence analysis of ACACA expression in FFPE human U-2 OS cells using Acetyl-CoA Carboxylase 1 Antibody for IF shows strong cytoplasmic staining (red) with a diffuse to punctate distribution consistent with metabolic enzyme localization, while nuclei are counterstained with DAPI (blue). Heat-induced epitope retrieval was performed using pH 6 citrate buffer.



Flow cytometry testing of human U-251 cells with Acetyl CoA Carboxylase 1 antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= Acetyl CoA Carboxylase 1 antibody.



Western blot testing of human 1) HeLa and 2) Jurkat cell lysate with Acetyl CoA Carboxylase 1 antibody. Observed molecular weight ~260 kDa.

Description

Acetyl-CoA carboxylase 1 (ACACA) is a cytosolic enzyme that catalyzes the conversion of acetyl-CoA to malonyl-CoA, representing the rate-limiting step in fatty acid synthesis. As a central regulator of lipogenesis, ACACA is highly expressed in metabolically active cells and is dynamically regulated in response to nutrient availability and energy status. In immunofluorescence applications, ACACA is detected predominantly within the cytoplasm, where it forms a diffuse to finely punctate staining pattern associated with lipid synthesis complexes and regions of active metabolic flux. Acetyl-CoA Carboxylase 1 Antibody for IF enables visualization of these cytoplasmic distribution patterns in fixed cells, providing insight into the spatial organization of lipid metabolism.

Acetyl-CoA carboxylase 1 antibody, also referred to as ACACA antibody or ACC1 antibody in the literature, recognizes a cytoplasmic enzyme whose localization and organization can vary depending on metabolic conditions. In immunofluorescence imaging, ACACA signal may appear uniformly cytoplasmic or enriched in discrete punctate structures, reflecting association with enzymatic complexes involved in fatty acid biosynthesis. This Acetyl-CoA Carboxylase 1 Antibody for IF supports high-resolution analysis of these patterns, enabling comparison of enzyme distribution across cell types and experimental conditions.

Immunofluorescence detection of ACACA is particularly valuable for studying metabolic reprogramming, where increased lipogenic activity is often accompanied by elevated protein expression and changes in subcellular organization. In proliferative or cancer-associated contexts, enhanced cytoplasmic fluorescence intensity and redistribution of ACACA may reflect increased fatty acid synthesis demand. These imaging-based observations complement biochemical assays and provide spatial context for metabolic regulation.

ACACA activity is tightly controlled by post-translational modifications, most notably phosphorylation by AMP-activated protein kinase (AMPK), which inhibits enzymatic function and can influence protein organization within the cytoplasm. As a result, immunofluorescence analysis of ACACA can provide indirect insight into metabolic signaling states, particularly when combined with co-staining of pathway components or organelle markers. Co-localization with lipid droplets, endoplasmic reticulum-associated regions, or other metabolic enzymes may further define functional compartments of lipogenesis.

The predominantly cytoplasmic localization of ACACA allows clear distinction from nuclear and membrane-associated proteins in immunofluorescence imaging, producing well-defined signal patterns that are readily interpretable. This makes ACACA a valuable target for IF-based studies focused on metabolic enzyme localization, lipid biosynthesis pathways, and intracellular organization of energy metabolism.

This antibody targets Acetyl-CoA carboxylase 1 in research applications requiring precise immunofluorescence detection of a key lipogenic enzyme, making it well suited for studies of fatty acid synthesis, metabolic signaling, and spatial regulation of cellular metabolism.

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 Acetyl-CoA Carboxylase 1 Antibody for IF / ACACA Immunofluorescence Antibody should be determined by the researcher.

Immunogen

Recombinant human protein (amino acids D31-R2336) was used as the immunogen for the Acetyl CoA Carboxylase 1 antibody.

Storage

After reconstitution, the Acetyl CoA Carboxylase 1 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 IF antibody, ACC1 immunofluorescence antibody, Acetyl-CoA carboxylase 1 IF antibody, lipogenesis IF antibody, cytoplasmic metabolic enzyme IF antibody