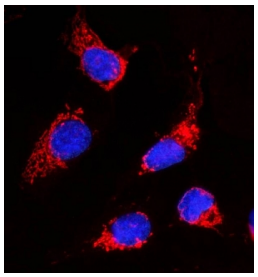
Acetyl CoA Carboxylase 1 Antibody / ACACA (RQ7317)

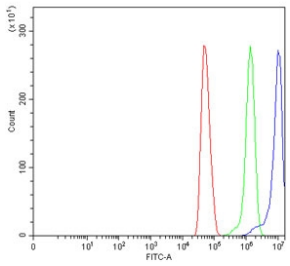
Catalog No.	Formulation	Size
RQ7317	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

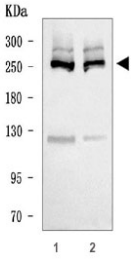
Availability	1-3 business days
Species Reactivity	Human
Format	Antigen affinity purified
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q13085
Localization	Cytoplasmic
Applications	Western Blot : 0.5-1ug/ml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



Immunofluorescent staining of FFPE human U-2 OS cells with Acetyl CoA Carboxylase 1 antibody (red) and DAPI nuclear stain (blue). HIER: steam section in pH6 citrate buffer for 20 min.



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 antibody detects ACACA, a biotin-dependent enzyme that catalyzes the conversion of acetyl-CoA to malonyl-CoA, the committed step in fatty acid biosynthesis. ACACA is highly expressed in lipogenic tissues such as liver, adipose tissue, and mammary gland, where it regulates lipid metabolism and energy homeostasis. By controlling malonyl-CoA levels, this enzyme also indirectly influences fatty acid oxidation, since malonyl-CoA acts as an inhibitor of carnitine palmitoyltransferase 1. The balance between synthesis and oxidation of fatty acids is tightly regulated, and ACACA serves as a key metabolic checkpoint.

Research with Acetyl CoA Carboxylase 1 antibody has revealed the enzyme's role in metabolic disorders. Elevated expression or activity of ACACA has been linked to obesity, insulin resistance, and type 2 diabetes, where excess lipid synthesis contributes to metabolic imbalance. Conversely, pharmacological inhibition of ACACA is under investigation as a therapeutic strategy for reducing hepatic steatosis and dyslipidemia. In oncology, cancer cells often upregulate ACACA to meet the increased demand for fatty acids, making this enzyme a potential target in tumor metabolism research.

Clone-based validation demonstrates that antibodies against ACACA can be applied in multiple assays including western blot, immunohistochemistry, and immunofluorescence. These reagents allow scientists to monitor changes in ACACA expression under different physiological and pathological conditions. They also provide a way to study how post-translational modifications, such as phosphorylation by AMP-activated protein kinase, regulate ACACA activity in response to cellular energy status.

NSJ Bioreagents offers this Acetyl CoA Carboxylase 1 antibody as a dependable research tool for studying lipid metabolism, metabolic disease, and cancer biology. Alternate names include ACACA antibody, ACC1 antibody, ACCA antibody, acetyl-Coenzyme A carboxylase alpha antibody, and acetyl-CoA carboxylase alpha antibody.

Application Notes

Optimal dilution of the Acetyl CoA Carboxylase 1 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.