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ACACA Recombinant Rabbit mAb

Catalog # AP100291

Product Information

Application	WB, IHC-P, IHC-F, IF, IP, E
Primary Accession	Q13085
Other Accession	Q13085
Reactivity	Rat, Human, Mouse
Host	Rabbit
Clonality	Recombinant
Calculated MW	265554
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Contains 1 ATP-grasp domain.Contains 1 biotin carboxylation domain.Contains 1 biotinyl-binding domain.Contains 1 carboxyltransferase domain.
SUBUNIT	Monomer, homodimer, and homotetramer. Can form filamentous polymers. Interacts in its inactive phosphorylated form with the BRCT domains of BRCA1 which prevents ACACA dephosphorylation and inhibits lipid synthesis. Interacts with MID1IP1; interaction with MID1IP1 promotes oligomerization and increases its activity.
Post-translational modifications	Phosphorylation on Ser-1263 is required for interaction with BRCA1.
DISEASE	Defects in ACACA are a cause of acetyl-CoA carboxylase 1 deficiency (ACACAD) [MIM:613933]; also known as ACAC deficiency or ACC deficiency. An inborn error of de novo fatty acid synthesis associated with severe brain damage, persistent myopathy and poor growth.
Background Descriptions	Acetyl-CoA carboxylase (ACC) is a complex multifunctional enzyme system. ACC is a biotin-containing enzyme which catalyzes the carboxylation of acetyl-CoA to malonyl-CoA, the rate-limiting step in fatty acid synthesis. There are two ACC forms, alpha and beta, encoded by two different genes. ACC-alpha is highly enriched in lipogenic tissues. The enzyme is under long term control at the transcriptional and translational levels and under short term regulation by the phosphorylation/dephosphorylation of targeted serine residues and by allosteric transformation by citrate or palmitoyl-CoA. Multiple alternatively spliced transcript variants divergent in the 5' sequence and encoding distinct isoforms have been found for this gene. [provided by RefSeq, Jul 2008],

Additional Information

Gene ID	31
Other Names	ACACbeta; ACC-beta; ACC2; ACCB; ACCbeta; HACC275; A530025K05Rik; Acac; Acc1; Gm738; ACACA_HUMAN; ACACA; Acetyl-Coenzyme A carboxylase alpha (ACC-alpha); 6.4.1.2; ACCA; ACACA_MOUSE; ACC-alpha; Acetyl-CoA carboxylase

	265; ACACA_RAT; acetyl-CoA carboxylase alpha; acetyl-Coenzyme A carboxylase alpha; acetyl-CoA carboxylase 1
Dilution	IHC-P=1:50-200,IHC-F=1:50-200,WB=1:500-2000,IF=1:50-200,ELISA=1:5000-10000,IP=1:50-200
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	ACACA (HGNC:84)
Synonyms	ACAC, ACC1, ACCA
Function	Cytosolic enzyme that catalyzes the carboxylation of acetyl- CoA to malonyl-CoA, the first and rate-limiting step of de novo fatty acid biosynthesis (PubMed:20457939, PubMed:20952656, PubMed:29899443). This is a 2 steps reaction starting with the ATP-dependent carboxylation of the biotin carried by the biotin carboxyl carrier (BCC) domain followed by the transfer of the carboxyl group from carboxylated biotin to acetyl-CoA (PubMed:20457939, PubMed:20952656, PubMed:29899443).
Cellular Location	Cytoplasm, cytosol {ECO:0000250|UniProtKB:Q5SWU9}
Tissue Location	Expressed in brain, placenta, skeletal muscle, renal, pancreatic and adipose tissues; expressed at low level in pulmonary tissue; not detected in the liver

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