

Product name:	ACCα (phospho Ser80) Rabbit Polyclonal Antibody
Cat number:	ABN04199
Conjugate:	Unconjugated
Size:	100μL
Clone:	Polyclonal
Concentration:	1mg/ml
Host:	Rabbit
Isotype:	IgG
Immunogen:	The antiserum was produced against synthesized peptide derived from human Acetyl-CoA Carboxylase around the phosphorylation site of Ser80. AA range:46-95
Reactivity:	Human,Mouse,Rat
Applications:	WB 1:500-1:2000,IHC 1:100-1:300,ICC/IF 1:50-1:200,ELISA 1:5000-1:10000
Molecular Weight:	280kDa
Purification:	Affinity purification
Form:	Liquid
Buffer:	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% New type preservative N.
Storage:	Store at 4°C short term. Aliquot and store at -20°C for 12 months. Avoid freeze/thaw cycles.

Background:

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], catalytic activity: $\text{ATP} + \text{acetyl-CoA} + \text{HCO}_3^- = \text{ADP} + \text{phosphate} + \text{malonyl-CoA}$, catalytic activity: $\text{ATP} + \text{biotin-carboxyl-carrier protein} + \text{CO}_2 = \text{ADP} + \text{phosphate} + \text{carboxybiotin-carboxyl-carrier protein}$, cofactor: Binds 2 manganese ions per subunit, cofactor: Biotin, disease: Defects in ACACA are a cause of ACACA deficiency [MIM:200350]; also called ACAC or ACC deficiency. ACACA deficiency is an inborn error of de novo fatty acid synthesis. The disorder is associated with severe brain damage, persistent myopathy and poor growth, enzyme regulation: By phosphorylation, function: Catalyzes the rate-limiting reaction in the biogenesis of long-chain fatty acids. Carries out three functions: biotin carboxyl carrier protein, biotin carboxylase and carboxyltransferase, online information: Acetyl-CoA carboxylase entry, pathway: Lipid metabolism; malonyl-CoA biosynthesis; malonyl-CoA from acetyl-CoA: step 1/1, PTM: Phosphorylation on Ser-1263 is required for interaction with BRCA1, similarity: Contains 1 ATP-grasp domain, similarity: Contains 1 biotin carboxylation domain, similarity: Contains 1 biotinyl-binding domain, similarity: Contains 1 carboxyltransferase domain, subunit: Interacts in its inactive phosphorylated form with the BRCT domains of BRCA1 which prevents ACACA dephosphorylation and inhibits lipid synthesis, tissue specificity: Expressed in brain, placental, skeletal muscle, renal, pancreatic and adipose tissues; expressed at low level in pulmonary tissue; not detected in the liver.