SANTA CRUZ BIOTECHNOLOGY, INC.

ACCα (D-5): sc-137104

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Acetyl-CoA carboxylase (ACC) is a complex multifunctional enzyme system which catalyzes the carboxylation of acetyl-CoA to malonyl-CoA, the rate-limiting step in fatty acid synthesis. Exercise diminishes the activity of acetyl-CoA carboxylase in human muscle. ACCα (ACC1) is the rate-limiting enzyme in the biogenesis of long-chain fatty acids, and ACCβ (ACC2) may control mitochondrial fatty acid oxidation. These two isoforms of ACC control the amount of fatty acids in the cells. The catalytic function of ACCα is regulated by phosphorylation (inactive) and dephosphorylation (active) of targeted serine residues and by allosteric transformation by citrate or palmitoyl-CoA, which serve as the enzyme's short-term regulatory mechanism. The gene encoding ACCα maps to human chromosome 17q12 and encodes a form of ACC, which is the major ACC in lipogenic tissues. The catalytic core of ACCβ is homologous to that of the ACCα, except for an additional peptide of about 150 amino acids at the N-terminus.

CHROMOSOMAL LOCATION

Genetic locus: ACACA (human) mapping to 17q12.

SOURCE

ACCα (D-5) is a mouse monoclonal antibody raised against amino acids 1-76 mapping at the N-terminus of ACCα of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ACCα (D-5) is available conjugated to agarose (sc-137104 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-137104 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137104 PE), fluorescein (sc-137104 FITC), Alexa Fluor® 488 (sc-137104 AF488), Alexa Fluor® 546 (sc-137104 AF546), Alexa Fluor® 594 (sc-137104 AF594) or Alexa Fluor® 647 (sc-137104 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-137104 AF680) or Alexa Fluor® 790 (sc-137104 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

ACCα (D-5) is recommended for detection of ACCα of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ACCα siRNA (h): sc-40312, ACCα shRNA Plasmid (h): sc-40312-SH and ACCα shRNA (h) Lentiviral Particles: sc-40312-V.

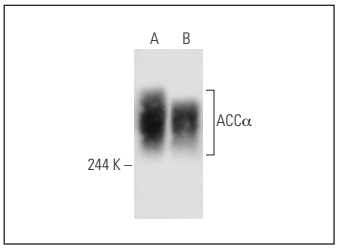
Molecular Weight of ACCα: 265 kDa.

Positive Controls: DU 145 cell lysate: sc-2268 or Jurkat whole cell lysate: sc-2204.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



ACCα (D-5): sc-137104. Western blot analysis of ACCα expression in DU 145 (**A**) and Jurkat (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Liao, C.C., et al. 2013. Prevention of diet-induced hyperlipidemia and obesity by caffeic acid in C57BL/6 mice through regulation of hepatic lipogenesis gene expression. J. Agric. Food Chem. 61: 11082-11088.
2. Liao, C.C., et al. 2014. The inhibition of oleic acid induced hepatic lipogenesis and the promotion of lipolysis by caffeic acid via up-regulation of AMP-activated kinase. J. Sci. Food Agric. 94: 1154-1162.
3. Zhang, Y., et al. 2015. Resveratrol improves hepatic steatosis by inducing autophagy through the cAMP signaling pathway. Mol. Nutr. Food Res. 59: 1443-1457.
4. Huang, L., et al. 2018. Inhibition of protein arginine methyltransferase 5 enhances hepatic mitochondrial biogenesis. J. Biol. Chem. 293: 10884-10894.
5. Song, H.M., et al. 2018. Carnosic acid protects mice from high-fat diet-induced NAFLD by regulating MARCKS. Int. J. Mol. Med. 42: 193-207.
6. Balusamy, S.R., et al. 2018. Anti-proliferative activity of *Origanum vulgare* inhibited lipogenesis and induced mitochondrial mediated apoptosis in human stomach cancer cell lines. Biomed. Pharmacother. 108: 1835-1844.
7. Ferretti, A.C., et al. 2019. Metformin and glucose starvation decrease the migratory ability of hepatocellular carcinoma cells: targeting AMPK activation to control migration. Sci. Rep. 9: 2815.
8. Li, R., et al. 2019. Cardioprotective roles of Sestrin1 and Sestrin2 against doxorubicin cardiotoxicity. Am. J. Physiol. Heart Circ. Physiol. 317: H39-H48.
9. Wang, X., et al. 2019. MDG-1, an *Ophiopogon* polysaccharide, restrains process of non-alcoholic fatty liver disease via modulating the gut-liver axis. Int. J. Biol. Macromol. 141: 1013-1021.

RESEARCH USE

For research use only, not for use in diagnostic procedures.