SANTA CRUZ BIOTECHNOLOGY, INC.

# p-ACCα (Ser 78/Ser 80)-R: sc-30447-R

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*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 17 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.

## REFERENCES


1. Kim, K.H. 1997. Regulation of mammalian acetyl-coenzyme A carboxylase. Annu. Rev. Nutr. 17: 77-99.
2. Dean, D., et al. 2000. Exercise diminishes the activity of acetyl-CoA carboxylase in human muscle. Diabetes 49: 1295-1300.


## CHROMOSOMAL LOCATION

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

## SOURCE

p-ACCα (Ser 78/Ser 80)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 78 and Ser 80 phosphorylated ACCα of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-30447 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

p-ACCα (Ser 78/Ser 80)-R is recommended for detection of Ser 78 and Ser 80 dually phosphorylated ACCα of human and rat origin by Western Blotting (starting dilution 1:200, 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.

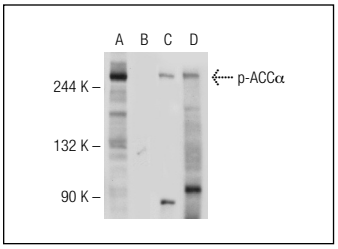
Molecular Weight of p-ACCα: 265 kDa.

Positive Controls: rat heart extract: sc-2393, DU 145 cell lysate: sc-2268 or K-562 whole cell lysate: sc-2203.

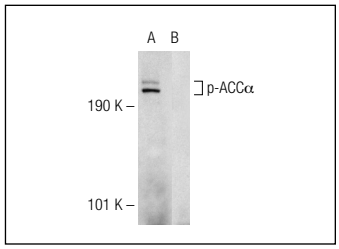
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA




Western blot analysis of ACCα phosphorylation in untreated (**A**, **C**), and lambda protein phosphatase (sc-200312A) treated (**B**, **D**) K-562 whole cell lysates. Antibodies tested include p-ACCα (Ser 78/Ser 80)-R: sc-30447-R (**A**, **C**) and ACCα (D-5): sc-137104 (**B**, **D**).




Western blot analysis of ACCα phosphorylation in untreated (**A**) and lambda protein phosphatase (sc-200312A) treated (**B**) rat heart tissue extracts. Antibody tested is p-ACCα (Ser 78/Ser 80): sc-30447 (**A**,**B**).

## SELECT PRODUCT CITATIONS


1. Chen, L., et al. 2011. Cadmium induction of reactive oxygen species activates the mTOR pathway, leading to neuronal cell death. Free Radic. Biol. Med. 50: 624-632.


## STORAGE

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

## RESEARCH USE

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

## PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.


MONOS Satisfaction Guaranteed

Try **p-ACCα (F-2): sc-271965**, our highly recommended monoclonal alternative to p-ACCα (Ser 78/Ser 80).