SANTA CRUZ BIOTECHNOLOGY, INC.

# ACCβ (H-7): sc-390344

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) is thought to control mitochondrial fatty acid oxidation. These two isoforms of ACC control the amount of fatty acids in the cells. ACC-β is thought to control fatty acid oxidation by means of the ability of malonyl-CoA to inhibit carnitine-palmitoyl-CoA transferase I, the rate-limiting step in fatty acid uptake and oxidation by mitochondria. The gene encoding ACCβ maps to human chromosome 12q24.11 and encodes a mitochondiral protein exressed in heart and skeletal muscle. 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. Ha, J., et al. 1996. Cloning of human acetyl-CoA carboxylase-β and its unique features. Proc. Natl. Acad. Sci. USA 93: 11466-11470.
2. Kim, K.H. 1997. Regulation of mammalian acetyl-coenzyme A carboxylase. Annu. Rev. Nutr. 17: 77-99.
3. Dean, D., et al. 2000. Exercise diminishes the activity of acetyl-CoA carboxylase in human muscle. Diabetes 49: 1295-1300.
4. Abu-Elheiga, L., et al. 2000. The subcellular localization of acetyl-CoA carboxylase 2. Proc. Natl. Acad. Sci. USA 97: 1444-1449.


## CHROMOSOMAL LOCATION

Genetic locus: ACACB (human) mapping to 12q24.11; Acacb (mouse) mapping to 5 F.

## SOURCE

ACCβ (H-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 87-106 near the N-terminus of ACCβ of rat 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.

ACCβ (H-7) is available conjugated to agarose (sc-390344 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390344 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390344 PE), fluorescein (sc-390344 FITC), Alexa Fluor® 488 (sc-390344 AF488), Alexa Fluor® 546 (sc-390344 AF546), Alexa Fluor® 594 (sc-390344 AF594) or Alexa Fluor® 647 (sc-390344 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390344 AF680) or Alexa Fluor® 790 (sc-390344 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-390344 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).



## APPLICATIONS

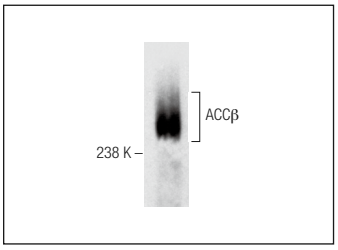
ACCβ (H-7) is recommended for detection of ACCβ of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ACCβ siRNA (h): sc-43597, ACCβ siRNA (m): sc-140800, ACCβ shRNA Plasmid (h): sc-43597-SH, ACCβ shRNA Plasmid (m): sc-140800-SH, ACCβ shRNA (h) Lentiviral Particles: sc-43597-V and ACCβ shRNA (m) Lentiviral Particles: sc-140800-V.

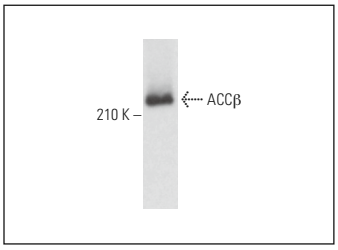
Molecular Weight of ACCβ: 275-280 kDa.

Positive Controls: rat liver extract: sc-2395 or PC-12 cell lysate: sc-2250.

## DATA




ACCβ (H-7): sc-390344. Western blot analysis of ACCβ expression in rat liver tissue extract.




ACCβ (H-7): sc-390344. Western blot analysis of ACCβ expression in PC-12 whole cell lysate.

## SELECT PRODUCT CITATIONS


1. Qi, N., et al. 2017. Therapeutic hexapeptide (PGPIPN) prevents and cures alcoholic fatty liver disease by affecting the expressions of genes related with lipid metabolism and oxidative stress. Oncotarget 8: 88079-88093.
2. Seidu, T., et al. 2021. DHT causes liver steatosis via transcriptional regulation of SCAP in normal weight female mice. J. Endocrinol. 250: 49-65.
3. Chen, J., et al. 2022. PFKP alleviates glucose starvation-induced metabolic stress in lung cancer cells via AMPK-ACC2 dependent fatty acid oxidation. Cell Discov. 8: 52.
4. Sudharma, A.A., et al. 2023. Atrophic remodeling of the heart during Vitamin D deficiency and insufficiency in a rat model. J. Nutr. Biochem. 119: 109382.


## 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.