SANTA CRUZ BIOTECHNOLOGY, INC.

ACAD-8 (D-5): sc-390038

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

ACAD-8 (Acyl-CoA dehydrogenase family member 8), also known as Isobutyryl-CoA dehydrogenase (IBD) or activator-recruited cofactor 42 kDa component (ARC42), consists of an N-terminal α-helical domain, a β-sheet domain and another α-helical domain at the C-terminal. The ACAD family of enzymes are involved in the catabolism of fatty acids and amino acids. They provide a major source of energy for the heart and skeletal muscle. ACAD-8 is a mitochondrial flavoprotein involved in valine degradation. It is responsible for converting isobutyryl-CoA to methacrylyl-CoA. ACAD-8 localizes to the mitochondrial matrix and exists as a homotetramer. Deficiency of ACAD-8 results in carnitine deficiency, dilated cardiomyopathy, and formula feeding intolerance. The excretion of isobutyryl-glycine in urine is a sign of an ACAD-8 related defect.

REFERENCES

1. Roe, C.R., et al. 1999. Isolated isobutyryl-CoA dehydrogenase deficiency: an unrecognized defect in human valine metabolism. Mol. Genet. Metab. 65: 264-271.
2. Näär, A.M., et al. 1999. Composite co-activator ARC mediates chromatin-directed transcriptional activation. Nature 398: 828-832.
3. Nguyen, T.V., et al. 2002. Identification of isobutyryl-CoA dehydrogenase and its deficiency in humans. Mol. Genet. Metab. 77: 68-79.
4. Zhang, J., et al. 2002. Cloning and functional characterization of ACAD-9, a novel member of human acyl-CoA dehydrogenase family. Biochem. Biophys. Res. Commun. 297: 1033-1042.
5. Sass, J.O., et al. 2004. Isobutyryl-CoA dehydrogenase deficiency: isobutyrylglycinuria and ACAD8 gene mutations in two infants. J. Inherit. Metab. Dis. 27: 741-745.

CHROMOSOMAL LOCATION

Genetic locus: ACAD8 (human) mapping to 11q25.

SOURCE

ACAD-8 (D-5) is a mouse monoclonal antibody raised against amino acids 251-415 mapping at the C-terminus of ACAD-8 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ACAD-8 (D-5) is available conjugated to agarose (sc-390038 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-390038 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390038 PE), fluorescein (sc-390038 FITC), Alexa Fluor® 488 (sc-390038 AF488), Alexa Fluor® 546 (sc-390038 AF546), Alexa Fluor® 594 (sc-390038 AF594) or Alexa Fluor® 647 (sc-390038 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390038 AF680) or Alexa Fluor® 790 (sc-390038 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

ACAD-8 (D-5) is recommended for detection of ACAD-8 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 ACAD-8 siRNA (h): sc-61932, ACAD-8 shRNA Plasmid (h): sc-61932-SH and ACAD-8 shRNA (h) Lentiviral Particles: sc-61932-V.

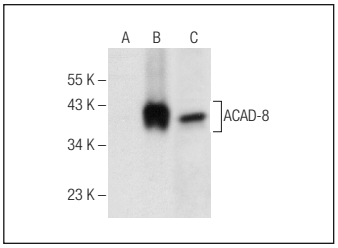
Molecular Weight of ACAD-8: 43 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, NCI-H929 whole cell lysate: sc-364786 or ACAD-8 (h): 293 Lysate: sc-110621.

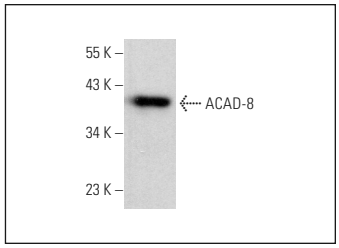
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



ACAD-8 (D-5): sc-390038. Western blot analysis of ACAD-8 expression in non-transfected 293: sc-110760 (**A**), human ACAD-8 transfected 293: sc-110621 (**B**) and HL-60 (**C**) whole cell lysates.



ACAD-8 (D-5): sc-390038. Western blot analysis of ACAD-8 expression in NCI-H929 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Park, S., et al. 2022. Transcription factors TEAD2 and E2A globally repress acetyl-CoA synthesis to promote tumorigenesis. Mol. Cell 82: 4246-4261.e11.

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.