

# ACAD-8 (G-20): sc-66709

## 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  $\alpha$ -helical domain, a  $\beta$ -sheet domain and another  $\alpha$ -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., Cederbaum, S.D., Roe, D.S., Mardach, R., Galindo, A. and Sweetman, L. 1999. Isolated isobutyryl-CoA dehydrogenase deficiency: an unrecognized defect in human valine metabolism. *Mol. Genet. Metab.* 65: 264-271.
2. Näär, A.M., Beaurang, P.A., Zhou, S., Abraham, S., Solomon, W. and Tjian, R. 1999. Composite co-activator ARC mediates chromatin-directed transcriptional activation. *Nature* 398: 828-832.
3. Nguyen, T.V., Andresen, B.S., Corydon, T.J., Ghisla, S., Abd-El Razik, N., Mohsen, A.W., Cederbaum, S.D., Roe, D.S., Roe, C.R., Lench, N.J. and Vockley, J. 2002. Identification of isobutyryl-CoA dehydrogenase and its deficiency in humans. *Mol. Genet. Metab.* 77: 68-79.
4. Zhang, J., Zhang, W., Zou, D., Chen, G., Wan, T., Zhang, M. and Cao, X. 2002. Cloning and functional characterization of ACAD-9, a novel member of human acyl-CoA dehydrogenase family. *Biochem. Biophys. Res. Commun.* 297: 1033-1042.

## CHROMOSOMAL LOCATION

Genetic locus: ACAD8 (human) mapping to 11q25; Acad8 (mouse) mapping to 9 A4.

## SOURCE

ACAD-8 (G-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of ACAD-8 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-66709 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

ACAD-8 (G-20) is recommended for detection of ACAD-8 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

ACAD-8 (G-20) is also recommended for detection of ACAD-8 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for ACAD-8 siRNA (h): sc-61932 and ACAD-8 siRNA (m): sc-61933; and as shRNA Plasmid control antibody for ACAD-8 shRNA Plasmid (h): sc-61932-SH and ACAD-8 shRNA Plasmid (m): sc-61933-SH.

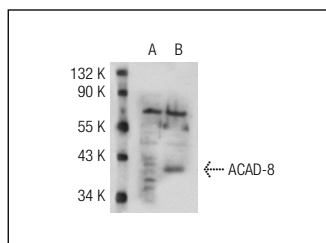
Molecular Weight of ACAD-8: 43 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, M1 whole cell lysate: sc-364782 or ACAD-8 (h): 293 Lysate: sc-110621.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



ACAD-8 (G-20): sc-66709. Western blot analysis of ACAD-8 expression in non-transfected: sc-110760 (A) and human ACAD-8 transfected: sc-110621 (B) 293 whole cell lysates.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.