SANTA CRUZ BIOTECHNOLOGY, INC.

ACSS1 (A-10): sc-373847

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

ACSS1 (acyl-CoA synthetase short-chain family member 1), also known as ACAS2L or AceCS2L, is a 689 amino acid protein that localizes to the mitochondrial matrix and belongs to the ATP-dependent AMP-binding enzyme family. Functioning primarily as a cardiac enzyme, ACSS1 catalyzes the ATP-dependent conversion of acetate and CoA (coenzyme A) to acetyl-CoA, which is then utilized for the oxidation of acetate within the tricarboxylic acid cycle. ACSS1 is expressed as two alternatively spliced isoforms and is encoded by a gene which maps to chromosome 20. Comprising approximately 2% of the human genome, chromosome 20 contains nearly 63 million bases that encode over 600 genes, some of which are associated with Creutzfeldt-Jakob disease, amyotrophic lateral sclerosis, spinal muscular atrophy, ring chromosome 20 epilepsy syndrome and Alagille syndrome.

REFERENCES

1. Prusiner, S.B. 1998. The prion diseases. Brain Pathol. 8: 499-513.
2. Collins, S., et al. 2001. Gerstmann-Sträussler-Scheinker syndrome, fatal familial insomnia and kuru: a review of these less common human transmissible spongiform encephalopathies. J. Clin. Neurosci. 8: 387-397.
3. Masullo, C., et al. 2001. Does PRNP gene control the clinical and pathological phenotype of human spongiform transmissible encephalopathies? Clin. Neuropathol. 20: 19-25.
4. Fujino, T., et al. 2001. Acetyl-CoA synthetase 2, a mitochondrial matrix enzyme involved in the oxidation of acetate. J. Biol. Chem. 276: 11420-11426.
5. Nakajima, D., et al. 2002. Construction of expression-ready cDNA clones for KIAA genes: manual curation of 330 KIAA cDNA clones. DNA Res. 9: 99-106.
6. Joó, J.G., et al. 2006. Trisomy 20 mosaicism and nonmosaic trisomy 20: a report of 2 cases. J. Reprod. Med. 51: 209-212.
7. Ville, D., et al. 2006. Early pattern of epilepsy in the ring chromosome 20 syndrome. Epilepsia 47: 543-549.

CHROMOSOMAL LOCATION

Genetic locus: ACSS1 (human) mapping to 20p11.21; Acss1 (mouse) mapping to 2 G3.

SOURCE

ACSS1 (A-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 547-577 within an internal region of ACSS1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-373847 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

ACSS1 (A-10) is recommended for detection of ACSS1 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).

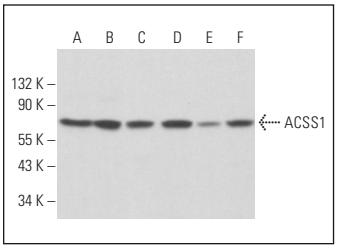
ACSS1 (A-10) is also recommended for detection of ACSS1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for ACSS1 siRNA (h): sc-72439, ACSS1 siRNA (m): sc-140834, ACSS1 shRNA Plasmid (h): sc-72439-SH, ACSS1 shRNA Plasmid (m): sc-140834-SH, ACSS1 shRNA (h) Lentiviral Particles: sc-72439-V and ACSS1 shRNA (m) Lentiviral Particles: sc-140834-V.

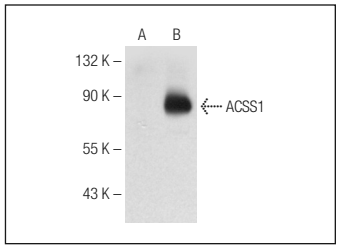
Molecular Weight of ACSS1: 75 kDa.

Positive Controls: F9 cell lysate: sc-2245, TF-1 cell lysate: sc-2412 or ACSS1 (m2): 293T Lysate: sc-126384.

DATA



ACSS1 (A-10): sc-373847. Western blot analysis of ACSS1 expression in Jurkat (**A**), TF-1 (**B**), HL-60 (**C**), F9 (**D**), A-10 (**E**) and KNRK (**F**) whole cell lysates.



ACSS1 (A-10): sc-373847. Western blot analysis of ACSS1 expression in non-transfected: sc-117752 (**A**) and mouse ACSS1 transfected: sc-126384 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Zhou, J., et al. 2016. Maternal sodium butyrate supplement elevates the lipolysis in adipose tissue and leads to lipid accumulation in offspring liver of weaning-age rats. Lipids Health Dis. 15: 119.
2. Fan, G., et al. 2017. Effects of zinc α2 glycoprotein on lipid metabolism of liver in high-fat diet-induced obese mice. Horm. Metab. Res. 49: 793-800.
3. Fan, G., et al. 2021. Zinc-α2-glycoprotein promotes skeletal muscle lipid metabolism in cold-stressed mice. Endocr. J. 68: 53-62.

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.