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ACSS2 Antibody

Rabbit mAb
Catalog # AP90993

Product Information

Application	WB, IF, ICC
Primary Accession	Q9NR19
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Other Names	ACSS2; ACSA; ACAS2; AceCS; MYH7B; Acetyl CoA synthetase;
Isotype	Rabbit IgG
Host	Rabbit
Calculated MW	78580

Additional Information

Dilution	WB 1:500~1:2000 ICC/IF 1:50~1:200
Purification	Affinity-chromatography
Immunogen	A synthesized peptide derived from human ACSS2
Description	Activates acetate so that it can be used for lipid synthesis or for energy generation. Cytoplasmic acetyl-CoA synthetase (AceCS1) catalyzes the conversion of acetate and CoA to acetyl-CoA. Acetyl-CoA synthesized by AceCS1 is used for fatty acid and lipid biosynthesis. Studies suggest that this enzyme is regulated by sterol regulatory element-binding proteins.
Storage Condition and Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.

Protein Information

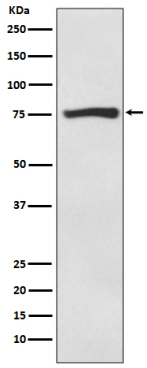
Name	ACSS2
Synonyms	ACAS2
Function	Catalyzes the synthesis of acetyl-CoA from short-chain fatty acids (PubMed:10843999, PubMed:28003429, PubMed:28552616, PubMed:38369012, PubMed:39561764). Acetate is the preferred substrate (PubMed:10843999, PubMed:28003429, PubMed:38369012, PubMed:39561764). Can also utilize propionate with a much lower affinity (PubMed:38369012). Catalyzes the conversion of lactate into lactoyl-CoA (PubMed:39561764). Does not catalyze the conversion of butyrate or crotonate to their corresponding acyl-CoAs (PubMed:38369012). Nuclear ACSS2 promotes glucose deprivation-induced lysosomal biogenesis and autophagy, tumor cell survival and brain tumorigenesis (PubMed:28552616). Glucose deprivation results in AMPK-mediated phosphorylation of ACSS2 leading to its translocation to the nucleus where it binds to TFEB and locally

produces acetyl-CoA for histone acetylation in the promoter regions of TFEB target genes thereby activating their transcription (PubMed:28552616). The regulation of genes associated with autophagy and lysosomal activity through ACSS2 is important for brain tumorigenesis and tumor survival (PubMed:28552616). Acts as a chromatin-bound transcriptional coactivator that up-regulates histone acetylation and expression of neuronal genes (By similarity). Can be recruited to the loci of memory-related neuronal genes to maintain a local acetyl-CoA pool, providing the substrate for histone acetylation and promoting the expression of specific genes, which is essential for maintaining long-term spatial memory (By similarity).

Cellular Location

Cytoplasm, cytosol. Cytoplasm {ECO:0000250|UniProtKB:Q9QXG4}. Nucleus Note=Glucose deprivation results in its AMPK-dependent phosphorylation and subsequent nuclear translocation (PubMed:28552616). Phosphorylation at Ser-659, leads to exposure of its nuclear localization signal which is required for its interaction with KPNA1 and subsequent translocation to the nucleus (PubMed:28552616). Found in the cytoplasm in undifferentiated neurons and upon differentiation, translocates to nucleus (By similarity). {ECO:0000250|UniProtKB:Q9QXG4, ECO:0000269|PubMed:28552616}

Images



Western blot analysis of ACSS2 expression in HepG2 cell lysate.

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