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# ACSS2 Antibody (N-term) Blocking Peptide

**Synthetic peptide**
**Catalog # BP9606a**

## Specification

### ACSS2 Antibody (N-term) Blocking Peptide - Product Information

Primary Accession Q9NR19

### ACSS2 Antibody (N-term) Blocking Peptide - Additional Information

**Gene ID** 55902

**Other Names**
Acetyl-coenzyme A synthetase, cytoplasmic, Acetate--CoA ligase, Acetyl-CoA synthetase, ACS, AceCS, Acyl-CoA synthetase short-chain family member 2, Acyl-activating enzyme, ACSS2, ACAS2

**Format**
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

**Storage**
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

**Precautions**
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

### ACSS2 Antibody (N-term) Blocking Peptide - Protein Information

**Name** ACSS2

**Synonyms** ACAS2

**Function**
Catalyzes the synthesis of acetyl-CoA from short-chain fatty acids (PubMed:<a href="http://www.uniprot.org/citations/10843999" target="_blank">10843999</a>, PubMed:<a href="http://www.uniprot.org/citations/28003429" target="_blank">28003429</a>, PubMed:<a href="http://www.uniprot.org/citations/28552616" target="_blank">28552616</a>). Acetate is the preferred substrate (PubMed:<a href="http://www.uniprot.org/citations/10843999" target="_blank">10843999</a>, PubMed:<a href="http://www.uniprot.org/citations/28003429" target="_blank">28003429</a>). Can also utilize propionate with a much lower affinity (By similarity). Nuclear ACSS2 promotes glucose deprivation-induced lysosomal biogenesis and autophagy, tumor cell survival and brain tumorigenesis (PubMed:<a href="http://www.uniprot.org/citations/28552616" target="_blank">28552616</a>). 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:<a href="http://www.uniprot.org/citations/28552616" target="_blank">28552616</a>). The regulation of genes associated with autophagy and lysosomal activity through ACSS2 is important

for brain tumorigenesis and tumor survival (PubMed:<a href="http://www.uniprot.org/citations/28552616" target="_blank">28552616</a>). 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}

## ACSS2 Antibody (N-term) Blocking Peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Blocking Peptides

## ACSS2 Antibody (N-term) Blocking Peptide - Images

## ACSS2 Antibody (N-term) Blocking Peptide - Background

ACSS2 is a cytosolic enzyme that catalyzes the activation of acetate for use in lipid synthesis and energy generation. The protein acts as a monomer and produces acetyl-CoA from acetate in a reaction that requires ATP.

## ACSS2 Antibody (N-term) Blocking Peptide - References

Yun, M., et al. J. Nucl. Med. 50(8):1222-1228(2009)Lu, Y., et al. J. Lipid Res. 49(12):2582-2589(2008)Sugiyama, N., et al. Mol. Cell Proteomics 6(6):1103-1109(2007)