

#### KD-Validated Anti-ACSS2 Rabbit Monoclonal Antibody Rabbit monoclonal antibody Catalog # AGI2350

### Specification

### **KD-Validated Anti-ACSS2 Rabbit Monoclonal Antibody - Product Information**

Application	WB, FC
Primary Accession	<u>Q9NR19</u>
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Isotype	Rabbit IgG
Calculated MW	Predicted, 79 kDa ; Observed, 78 kDa KDa
Gene Name	ACSS2
Aliases	ACSS2; Acyl-CoA Synthetase Short Chain
	Family Member 2; ACS; DJ1161H23.1;
	ACAS2; ACSA; Acetyl-Coenzyme A
	Synthetase 2 (ADP Forming);
	Acetyl-Coenzyme A Synthetase,
	Cytoplasmic; Acetyl-CoA Synthetase 1;
	Acyl-Activating Enzyme; PropionateCoA
	Ligase; EC 6.2.1.1; AceCS1; AceCS; ACECS;
	Acyl-CoA Synthetase Short-Chain Family
	Member 2; Cytoplasmic Acetyl-Coenzyme A
	Synthetase; Acetyl-CoA Synthetase;
	AcetateCoA Ligase; Acetate Thiokinase;
	Acetate-CoA Ligase; EC 6.2.1.17; EC 6.2.1
Immunogen	A synthesized peptide derived from human ACSS2

#### **KD-Validated Anti-ACSS2 Rabbit Monoclonal Antibody - Additional Information**

Gene ID 55902 Other Names Acetyl-coenzyme A synthetase, cytoplasmic, 6.2.1.1, Acetate--CoA ligase, Acetyl-CoA synthetase, ACS, AceCS, Acetyl-CoA synthetase 1, ACSS2, ACAS2

#### KD-Validated Anti-ACSS2 Rabbit Monoclonal Antibody - 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>, PubMed:<a href="http://www.uniprot.org/citations/28552616" target="\_blank">28552616</a>, PubMed:<a href="http://www.uniprot.org/citations/28552616" target="\_blank">28552616</a>, PubMed:<a href="http://www.uniprot.org/citations/28552616" target="\_blank">28552616</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}

# KD-Validated Anti-ACSS2 Rabbit Monoclonal Antibody - Protocols

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

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- <u>Cell Culture</u>

# KD-Validated Anti-ACSS2 Rabbit Monoclonal Antibody - Images





Western blotting analysis using anti-ACSS2 antibody (Cat#69177). Total cell lysates (45 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-ACSS2 antibody (Cat#69177, 1:2,500) and HRP-conjugated goat anti-rabbit secondary antibody (Cat#201, 1: 20,000) respectively. Image was developed using FeQ<sup>™</sup> ECL Substrate Kit (Cat#226). ACSS2, acyl-CoA synthetase short chain family member 2.



Western blotting analysis using anti-ACSS2 antibody (Cat#69177). ACSS2 expression in wild type (WT) and ACSS2 shRNA knockdown (KD) HeLa cells with 30  $\mu$ g of total cell lysates.  $\beta$ -Tubulin serves as a loading control. The blot was incubated with anti-ACSS2 antibody (Cat#69177, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody (Cat#201, 1:20,000) respectively. Image was developed using FeQ<sup>TM</sup> ECL Substrate Kit (Cat#226).



Flow cytometric analysis of ACSS2 expression in HepG2 cells using ACSS2 antibody (Cat#69177, 1:2,000). Green, isotype control; red, ACSS2.