

ACSS1 Protein, Human (P.pastoris, His)

Cat. No.:	HY-P71851
Synonyms:	ACAS2L; Acetate CoA ligase 2; Acetate--CoA ligase 2
Species:	Human
Source:	P. pastoris
Accession:	Q9NUB1 (38A-689K)
Gene ID:	84532
Molecular Weight:	Approximately 73.6 kDa

PROPERTIES

AA Sequence

```

A S G P S G S A P A      V A A A A A Q P G S      Y P A L S A Q A A R      E P A A F W G P L A
R D T L V W D T P Y      H T V W D C D F S T      G K I G W F L G G Q      L N V S V N C L D Q
H V R K S P E S V A      L I W E R D E P G T      E V R I T Y R E L L      E T T C R L A N T L
K R H G V H R G D R      V A I Y M P V S P L      A V A A M L A C A R      I G A V H T V I F A
G F S A E S L A G R      I N D A K C K V V I      T F N Q G L R G G R      V V E L K K I V D E
A V K H C P T V Q H      V L V A H R T D N K      V H M G D L D V P L      E Q E M A K E D P V
C A P E S M G S E D      M L F M L Y T S G S      T G M P K G I V H T      Q A G Y L L Y A A L
T H K L V F D H Q P      G D I F G C V A D I      G W I T G H S Y V V      Y G P L C N G A T S
V L F E S T P V Y P      N A G R Y W E T V E      R L K I N Q F Y G A      P T A V R L L L K Y
G D A W V K K Y D R      S S L R T L G S V G      E P I N C E A W E W      L H R V V G D S R C
T L V D T W W Q T E      T G G I C I A P R P      S E E G A E I L P A      M A M R P F F G I V
P V L M D E K G S V      V E G S N V S G A L      C I S Q A W P G M A      R T I Y G D H Q R F
V D A Y F K A Y P G      Y Y F T G D G A Y R      T E G G Y Y Q I T G      R M D D V I N I S G
H R L G T A E I E D      A I A D H P A V P E      S A V I G Y P H D I      K G E A A F A F I V
V K D S A G D S D V      V V Q E L K S M V A      T K I A K Y A V P D      E I L V V K R L P K
T R S G K V M R R L      L R K I I T S E A Q      E L G D T T T L E D      P S I I A E I L S V
Y Q K C K D K Q A A      A K
  
```

Biological Activity The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.

Appearance Lyophilized powder.

Formulation Lyophilized after extensive dialysis against solution in Tris-based buffer, 50% glycerol.

Endotoxin Level <1 EU/μg, determined by LAL method.

Reconstitution It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH₂O.

Storage & Stability Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.

Shipping

Room temperature in continental US; may vary elsewhere.

DESCRIPTION**Background**

Acyl-CoA short-chain synthetases (ACSS1, ACSS2, ACSS3) are the only known mammalian enzymes that can convert free acetate into acetyl-CoA. ACSS1 and ACSS2 predominantly utilize acetate as substrate, whereas ACSS3 preferentially uses propionate. The activity of these enzymes is regulated, in part, by acetylation and deacetylation of specific lysine sites. Acetylation inactivates both ACSS1 and ACSS2, whereas deacetylation reactivates them. ACSS1 is a mitochondrial matrix enzyme that is strongly expressed in heart, skeletal muscle and brown adipose tissue. This isoform primarily generates acetyl-CoA that will enter the citric acid cycle for energy derivation via oxidation to CO₂^[1].

REFERENCES

[1]. Moffett JR, et, al. Acetate Revisited: A Key Biomolecule at the Nexus of Metabolism, Epigenetics and Oncogenesis-Part 1: Acetyl-CoA, Acetogenesis and Acyl-CoA Short-Chain Synthetases. *Front Physiol.* 2020 Nov 12;11:580167.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA