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Datasheet for ABIN3130449
ACSS2 Protein (AA 1-701) (Strep Tag)

Overview

Quantity:	1 mg
Target:	ACSS2
Protein Characteristics:	AA 1-701
Origin:	Mouse
Source:	Tobacco (<i>Nicotiana tabacum</i>)
Protein Type:	Recombinant
Purification tag / Conjugate:	This ACSS2 protein is labelled with Strep Tag.
Application:	ELISA, Western Blotting (WB), SDS-PAGE (SDS)

Product Details

Sequence: MGLPEERRKS GSGSRAREET GAEGRVRGWS PPPEVRRSAH VPSLQRYREL HRRSVEEPRE
FWGNIAKEYF WKTACGPFL QYNFDVTKGK IFTEWMKGAT TNICYNVLDR NVHEKKLGDGK
VAFYWEGNEP GETTKITYRE LLVQVCQFSN VLRKQGIQKG DRVAIYMPMI LELVVAMLAC
ARLGALHSIV FAGFSAESLC ERILDSSCCL LITTDIFYRG EKLVLKELA DESLEKCREK
GFPVRCCIVV KHLGRAELGM NDSPSQSPPV KRPCPDVQIC WNEGVDLWWH ELMQQAGDEC
EPEWCDAEDP LFILYTSGST GKPKGVVHTI GGYMLYVATT FKVYVDFHPE DVFWCTADIG
WITGHSYVTY GPLANGATSV LFEGIPTYPD EGRLWSIVDK YKVTKFYTAP TAIRMLMKFG
DDPVTKHSRA SLQVLGTVGE PINPEAWLWY HRVVGSRQCP IVDTFWQTET GGHMLTPLPG
ATPMKPGSAS FPFVGVAPAI LNESGEELEG EAEGYLVFKQ PWPVIMRTVY GNHTRFETTY
FKKFPGYVYTD GDGCRDQDG YYWITGRIDD MLNVSGHLLS TAEVESALVE HEAVAEAAVV
GHPHPVKGEC LYCFVTLCDG HTFSPTLTEE LKKQIREKIG PIATPDYIQN APGLPKTRSG
KIMRRVLRKI AQNDHDLGDT STVADPSVIN HLFHRCLTT Q

Sequence without tag. The proposed Strep-Tag is based on experience s with the expression system, a different complexity of the protein could make another tag necessary. In case you have a special request, please contact us.

Characteristics:

Key Benefits:

- Made in Germany - from design to production - by highly experienced protein experts.
- Protein expressed with ALiCE® and purified by multi-step, protein-specific process to ensure correct folding and modification.
- These proteins are normally active (enzymatically functional) as our customers have reported (not tested by us and not guaranteed).
- State-of-the-art algorithm used for plasmid design (Gene synthesis).

This protein is a **made-to-order protein** and will be made for the first time for your order. Our experts in the lab will ensure that you receive a correctly folded protein.

The big advantage of ordering our **made-to-order proteins** in comparison to ordering custom made proteins from other companies is that there is no financial obligation in case the protein cannot be expressed or purified.

Expression System:

- ALiCE®, our Almost Living Cell-Free Expression System is based on a lysate obtained from *Nicotiana tabacum* c.v.. This contains all the protein expression machinery needed to produce even the most difficult-to-express proteins, including those that require post-translational modifications.
- During lysate production, the cell wall and other cellular components that are not required for protein production are removed, leaving only the protein production machinery and the mitochondria to drive the reaction. During our lysate completion steps, the additional components needed for protein production (amino acids, cofactors, etc.) are added to produce something that functions like a cell, but without the constraints of a living system - all that's needed is the DNA that codes for the desired protein!

Concentration:

- The concentration of our recombinant proteins is measured using the absorbance at 280nm.
- The protein's absorbance will be measured in several dilutions and is measured against its specific reference buffer.
- We use the Expasy's protparam tool to determine the absorption coefficient of each protein.

Purification:

Two step purification of proteins expressed in Almost Living Cell-Free Expression System (ALiCE®):

Product Details

1. In a first purification step, the protein is purified from the cleared cell lysate using StrepTag capture material. Eluate fractions are analyzed by SDS-PAGE.
2. Protein containing fractions of the best purification are subjected to second purification step through size exclusion chromatography. Eluate fractions are analyzed by SDS-PAGE and Western blot.

Purity: $\geq 80\%$ as determined by SDS PAGE, Size Exclusion Chromatography and Western Blot.

Endotoxin Level: Low Endotoxin less than 1 EU/mg (< 0.1 ng/mg)

Grade: Crystallography grade

Target Details

Target: ACSS2

Alternative Name: Acss2 ([ACSS2 Products](#))

Background: Acetyl-coenzyme A synthetase, cytoplasmic (EC 6.2.1.1) (Acetate--CoA ligase) (Acetyl-CoA synthetase) (ACS) (AceCS) (Acetyl-CoA synthetase 1) (AceCS1) (Acyl-CoA synthetase short-chain family member 2) (Acyl-activating enzyme) (Propionate--CoA ligase) (EC 6.2.1.17),FUNCTION: Catalyzes the synthesis of acetyl-CoA from short-chain fatty acids (PubMed:11150295, PubMed:16790548, PubMed:28562591). Acetate is the preferred substrate but can also utilize propionate with a much lower affinity (PubMed:11150295). Nuclear ACSS2 promotes glucose deprivation-induced lysosomal biogenesis and autophagy, tumor cell survival and brain tumorigenesis (By similarity). 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 (By similarity). The regulation of genes associated with autophagy and lysosomal activity through ACSS2 is important for brain tumorigenesis and tumor survival (By similarity). Acts as a chromatin-bound transcriptional coactivator that up-regulates histone acetylation and expression of neuronal genes (PubMed:28562591). 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 (PubMed:28562591). {ECO:0000250|UniProtKB:Q9NR19, ECO:0000269|PubMed:11150295, ECO:0000269|PubMed:16790548, ECO:0000269|PubMed:28562591}.

Molecular Weight: 78.9 kDa

UniProt: [Q9QXG4](#)

Application Details

Application Notes: In addition to the applications listed above we expect the protein to work for functional studies as well. As the protein has not been tested for functional studies yet we cannot offer a guarantee though.

Comment: ALiCE®, our Almost Living Cell-Free Expression System is based on a lysate obtained from *Nicotiana tabacum* c.v.. This contains all the protein expression machinery needed to produce even the most difficult-to-express proteins, including those that require post-translational modifications.

During lysate production, the cell wall and other cellular components that are not required for protein production are removed, leaving only the protein production machinery and the mitochondria to drive the reaction. During our lysate completion steps, the additional components needed for protein production (amino acids, cofactors, etc.) are added to produce something that functions like a cell, but without the constraints of a living system - all that's needed is the DNA that codes for the desired protein!

Restrictions: For Research Use only

Handling

Format: Liquid

Buffer: The buffer composition is at the discretion of the manufacturer. If you have a special request, please contact us.

Handling Advice: Avoid repeated freeze-thaw cycles.

Storage: -80 °C

Storage Comment: Store at -80°C.

Expiry Date: Unlimited (if stored properly)
