Datasheet for ABIN3076725

Sestrin 2 Protein (SESN2) (AA 1-480) (Strep Tag)

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Overview

Quantity:	1 mg
Target:	Sestrin 2 (SESN2)
Protein Characteristics:	AA 1-480
Origin:	Human
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This Sestrin 2 protein is labelled with Strep Tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS), ELISA

Product Details

Sequence:	MIVADSECRA ELKDYLRFAP GGVGDSGPGE EQRESRARRG PRGPSAFIPV EEVLREGAES LEQHLGLEAL MSSGRVDNLA VVMGLHPDYF TSFWRLHYLL LHTDGPLASS WRHYIAIMAA ARHQCSYLVG SHMAEFLQTG GDPEWLLGLH RAPEKLRKLS EINKLLAHRP WLITKEHIQA LLKTGEHTWS LAELIQALVL LTHCHSLSSF VFGCGILPEG DADGSPAPQA PTPPSEQSSP PSRDPLNNSG GFESARDVEA LMERMQQLQE SLLRDEGTSQ EEMESRFELE KSESLLVTPS ADILEPSPHP DMLCFVEDPT FGYEDFTRRG AQAPPTFRAQ DYTWEDHGYS LIQRLYPEGG QLLDEKFQAA YSLTYNTIAM HSGVDTSVLR RAIWNYIHCV FGIRYDDYDY GEVNQLLERN LKVYIKTVAC YPEKTTRRMY NLFWRHFRHS EKVHVNLLLL EARMQAALLY ALRAITRYMT **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®): 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.

Product Details

Purity:	>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:	Sestrin 2 (SESN2)
Alternative Name:	SESN2 (SESN2 Products)
Background:	Sestrin-2 (EC 1.11.1.-) (Hypoxia-induced gene),FUNCTION: Functions as an intracellular leucine sensor that negatively regulates the mTORC1 signaling pathway through the GATOR complex (PubMed:18692468, PubMed:25263562, PubMed:25457612, PubMed:26449471, PubMed:26612684, PubMed:26586190, PubMed:31586034, PubMed:35114100, PubMed:35831510, PubMed:36528027). In absence of leucine, binds the GATOR subcomplex GATOR2 and prevents mTORC1 signaling (PubMed:18692468, PubMed:25263562, PubMed:25457612, PubMed:26449471, PubMed:26612684, PubMed:26586190, PubMed:31586034, PubMed:35114100, PubMed:35831510, PubMed:36528027). Binding of leucine to SESN2 disrupts its interaction with GATOR2 thereby activating the TORC1 signaling pathway (PubMed:26449471, PubMed:26586190, PubMed:35114100, PubMed:35831510, PubMed:36528027). This stress-inducible metabolic regulator also plays a role in protection against oxidative and genotoxic stresses. May negatively regulate protein translation in response to endoplasmic reticulum stress, via mTORC1 (PubMed:24947615). May positively regulate the transcription by NFE2L2 of genes involved in the response to oxidative stress by facilitating the SQSTM1-mediated autophagic degradation of KEAP1 (PubMed:23274085). May also mediate TP53 inhibition of TORC1 signaling upon genotoxic stress (PubMed:18692468). Moreover, may prevent the accumulation of reactive oxygen species (ROS) through the alkylhydroperoxide reductase activity born by the N-terminal domain of the protein (PubMed:26612684). Was originally reported to contribute to oxidative stress resistance by reducing PRDX1 (PubMed:15105503). However, this could not be confirmed (PubMed:19113821). {ECO:0000269|PubMed:15105503, ECO:0000269|PubMed:18692468, ECO:0000269|PubMed:19113821, ECO:0000269|PubMed:23274085, ECO:0000269|PubMed:24947615, ECO:0000269|PubMed:25263562, ECO:0000269|PubMed:25457612, ECO:0000269|PubMed:26449471, ECO:0000269|PubMed:26586190, ECO:0000269|PubMed:26612684, ECO:0000269|PubMed:35114100, ECO:0000269|PubMed:35831510, ECO:0000269|PubMed:36528027}.

Target Details

Molecular Weight:	54.5 kDa
UniProt:	P58004

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)

Image 1. „Crystallography Grade“ protein due to multi-step, protein-specific purification process

