



[Go to Product page](#)

Datasheet for ABIN3096113  
**TSC1 Protein (AA 1-1164) (Strep Tag)**

### Overview

Quantity:	1 mg
Target:	TSC1
Protein Characteristics:	AA 1-1164
Origin:	Human
Source:	Tobacco ( <i>Nicotiana tabacum</i> )
Protein Type:	Recombinant
Purification tag / Conjugate:	This TSC1 protein is labelled with Strep Tag.
Application:	ELISA, Western Blotting (WB), SDS-PAGE (SDS)

### Product Details

Sequence: MAQQANVGEL LAMLDSPMLG VRDDVTAVFK ENLNDRGPM LVNTLVVYYL ETSSQPALHI  
LTTLQEPHDK HLLDRINEYV GKAATRLSIL SLLGHVIRLQ PSWKHKLSQA PLLPSLLKCL  
KMDTDVVVLT TGVLVLITML PMIPQSGKQH LLDFFDIFGR LSSWCLKKPG HVAEYVLVHL  
HASVYALFHR LYGMYP CNFV SFLRSHYSMK ENLETFEEVV KPMMEHVRIH PELVTGSKDH  
ELDPRRWKRL ETHDVVIECA KISLDPTAS YEDGYSVSHQ ISARFPHRSA DVTTSYADT  
QNSYGCATST PYSTSRLMLL NMPGQLPQTL SSPSTRLITE PPQATLWSPS MVCGMTTPTT  
SPGNVPPDLS HPYSKVFGTT AGGKGTPLGT PATSPPPAPL CHSDDYVHIS LPQATVTPPR  
KEERMDSARP CLHRQHLLN DRGSEPPGS KGSVTLSDLP GFLGLDASEE DSIEKDKEEA  
AISRELSEIT TAEAEVPR GGFDSPFYRD SLPQSQRKTH SAASSSQGAS VNPEPLHSSL  
DKLGPDTPKQ AFTPIDLPCG SADESPAGDR ECQTSLETSI FTPSPCKIPP PTRVGFSGSQ  
PPPYDHLFEV ALPKTAHFV IRKTEELLK AKGNTEEDGV PSTSPMEVLD RLIQQGADAH  
SKELNKLPLP SKSVDWTHFG GSPPSDEIRT LRDQLLLLHN QLLYERFKRQ QHALRNRRLL

RKVIKAAALE EHNAAMKDQL KLQEKDIQMW KVS LQKEQAR YNQLQEQRDT MVTKLHSQIR  
QLQHDREEFY NQSQELQTKL EDCRNMIAEL RIELKKANNK VCHTELLLSQ VSQKLSNSES  
VQQQMEFLNR QLLVLGEVNE LYLEQLQNKH SDTTKEVEMM KAAAYRKELEK NRSHVLQQTQ  
RLDTSQKRIL ELESHLAKKD HLLLEQKKYL EDVKLQARGQ LQAAESRYEA QKRITQVFEL  
EILDLYGRLE KDGLLKKLEE EKAEAAEAAE ERLDCCNDGC SDSMVGHNNEE ASGHNGETKT  
PRPSSARGSS GSRGGGGSSS SSELSTPEK PPHQRAGPFS SRWETTMGEA SASIPTTVGS  
LPSSKSFLGM KARELFRNKS ESQCDEGMT SSLSESLKTE LGKDLGVEAK IPLNLDGPHP  
SPPTPDSVGQ LHIMDYNETH HEHS

**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!

## Product Details

---

### 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.

---

### 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)

## Target Details

---

### Target:

TSC1

---

### Alternative Name:

TSC1 ([TSC1 Products](#))

---

### Background:

Hamartin (Tuberous sclerosis 1 protein),FUNCTION: Non-catalytic component of the TSC-TBC complex, a multiprotein complex that acts as a negative regulator of the canonical mTORC1 complex, an evolutionarily conserved central nutrient sensor that stimulates anabolic reactions and macromolecule biosynthesis to promote cellular biomass generation and growth (PubMed:12172553, PubMed:12906785, PubMed:12271141, PubMed:28215400, PubMed:15340059, PubMed:24529379). The TSC-TBC complex acts as a GTPase-activating protein (GAP) for the small GTPase RHEB, a direct activator of the protein kinase activity of mTORC1 (PubMed:12906785, PubMed:15340059, PubMed:24529379). In absence of nutrients, the TSC-TBC complex inhibits mTORC1, thereby preventing phosphorylation of ribosomal protein S6 kinase (RPS6KB1 and RPS6KB2) and EIF4EBP1 (4E-BP1) by the mTORC1 signaling (PubMed:12271141, PubMed:24529379, PubMed:28215400). The TSC-TBC complex is inactivated in response to nutrients, relieving inhibition of mTORC1 (PubMed:12172553, PubMed:24529379). Within the TSC-TBC complex, TSC1 stabilizes TSC2 and prevents TSC2 self-aggregation (PubMed:10585443, PubMed:28215400). Acts as a tumor suppressor (PubMed:9242607). Involved in microtubule-mediated protein transport via its ability to regulate

## Target Details

---

mTORC1 signaling (By similarity). Also acts as a co-chaperone for HSP90AA1 facilitating HSP90AA1 chaperoning of protein clients such as kinases, TSC2 and glucocorticoid receptor NR3C1 (PubMed:29127155). Increases ATP binding to HSP90AA1 and inhibits HSP90AA1 ATPase activity (PubMed:29127155). Competes with the activating co-chaperone AHSA1 for binding to HSP90AA1, thereby providing a reciprocal regulatory mechanism for chaperoning of client proteins (PubMed:29127155). Recruits TSC2 to HSP90AA1 and stabilizes TSC2 by preventing the interaction between TSC2 and ubiquitin ligase HERC1 (PubMed:16464865, PubMed:29127155). {ECO:0000250|UniProtKB:Q9Z136, ECO:0000269|PubMed:10585443, ECO:0000269|PubMed:12172553, ECO:0000269|PubMed:12271141, ECO:0000269|PubMed:12906785, ECO:0000269|PubMed:15340059, ECO:0000269|PubMed:16464865, ECO:0000269|PubMed:24529379, ECO:0000269|PubMed:28215400, ECO:0000269|PubMed:29127155, ECO:0000269|PubMed:9242607}.

---

Molecular Weight: 129.8 kDa

---

UniProt: [Q92574](#)

---

Pathways: [RTK Signaling](#), [AMPK Signaling](#), [Regulation of Cell Size](#), [Tube Formation](#)

## 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)