



Datasheet for ABIN3095379

## SH2B1 Protein (AA 1-756) (Strep Tag)



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### 1 Image

#### Overview

Quantity:	1 mg
Target:	SH2B1
Protein Characteristics:	AA 1-756
Origin:	Human
Source:	Tobacco ( <i>Nicotiana tabacum</i> )
Protein Type:	Recombinant
Purification tag / Conjugate:	This SH2B1 protein is labelled with Strep Tag.
Application:	ELISA, Western Blotting (WB), SDS-PAGE (SDS)

#### Product Details

Sequence: MNGAPSPEDG ASPSSPLPP PPPPSWREFC ESHARAAALD FARRFRLYLA SHPQYAGPGA  
EAAFRRFAE LFLQHFEAEV ARASGSLSP ILAPLSPGAE ISPHDLSLES CRVGGPLAVL  
GPSRSSDLA GPLPSSVSSS STTSSKPKLK KRFSLSRVGR SVRGSVRGIL QWRGTVDPPS  
SAGPLETSSG PPVLGGNSNS NSSGGAGTVG RGLVSDGTSP GERWTHRFRER LRLSRGGGAL  
KDGAGMVQRE ELLSFMGAEE AAPDPAGVGR GGGVAGPPSG GGGQPQWQKC RLLLRSEGE  
GGGRLEFFV PPKASRPRLS IPCSSITDVR TTTALEMPDR ENTFVVKVEG PSEYIMETVD  
AQHVKAWSVD IQECLSPGPC PATSPRPMTL PLAPGTSFLT RENTDSLELS CLNHSESLPS  
QDLLLGPSES NDRLSQGAYG GLSDRPSASI SPSSASIAAS HFDSMELLPP ELPPRIPIEE  
GPPTGTVHPL SAPYPLDTP ETATGSFLFQ GEPEGGEGDQ PLSGYPWFHG MLSRLKAAQL  
VLTGGTGSYG VFLVRQSETR RGEYVLTFFN QGKAKHLRLS LNEEGQCRVQ HLWFQSIFDM  
LEHFRVHIP LESGGSSDVV LVSYPSSQR QQEPTTSHDP PQPPEPPSWT DPPQPGAEEA  
SRAPEVAAAA AAAAKERQEK EKAGGGGVE ELVPVVELVP VVELEEAIAP GSEAQGAGSG

GDAGVPPMVQ LQQSPLGGDG EEGGHPRAIN NQYSFV

**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.**

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### 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

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## Product Details

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(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.

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

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

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Grade: Crystallography grade

## Target Details

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Target: SH2B1

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Alternative Name: SH2B1 ([SH2B1 Products](#))

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Background: SH2B adapter protein 1 (Pro-rich, PH and SH2 domain-containing signaling mediator) (PSM) (SH2 domain-containing protein 1B),FUNCTION: Adapter protein for several members of the tyrosine kinase receptor family. Involved in multiple signaling pathways mediated by Janus kinase (JAK) and receptor tyrosine kinases, including the receptors of insulin (INS), insulin-like growth factor I (IGF1), nerve growth factor (NGF), brain-derived neurotrophic factor (BDNF), glial cell line-derived neurotrophic factor (GDNF), platelet-derived growth factor (PDGF) and fibroblast growth factors (FGFs). In growth hormone (GH) signaling, autophosphorylated ('Tyr-813') JAK2 recruits SH2B1, which in turn is phosphorylated by JAK2 on tyrosine residues. These phosphotyrosines form potential binding sites for other signaling proteins. GH also promotes serine/threonine phosphorylation of SH2B1 and these phosphorylated residues may serve to recruit other proteins to the GHR-JAK2-SH2B1 complexes, such as RAC1. In leptin (LEP) signaling, binds to and potentiates the activation of JAK2 by globally enhancing downstream pathways. In response to leptin, binds simultaneously to both, JAK2 and IRS1 or IRS2, thus mediating formation of a complex of JAK2, SH2B1 and IRS1 or IRS2. Mediates tyrosine phosphorylation of IRS1 and IRS2, resulting in activation of the PI 3-kinase pathway. Acts as a positive regulator of NGF-mediated activation of the Akt/Forkhead pathway, prolongs NGF-induced phosphorylation of AKT1 on 'Ser-473' and AKT1 enzymatic activity. Enhances the kinase activity of the cytokine receptor-associated tyrosine kinase JAK2 and of other receptor tyrosine kinases, such as FGFR3 and NTRK1. For JAK2, the mechanism seems to involve dimerization of both, SH2B1 and JAK2. Enhances RET phosphorylation and kinase activity. Isoforms seem to be differentially involved in IGF-I and PDGF-induced mitogenesis (By

## Target Details

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similarity). {ECO:0000250, ECO:0000269|PubMed:11827956, ECO:0000269|PubMed:14565960, ECO:0000269|PubMed:15767667, ECO:0000269|PubMed:16569669, ECO:0000269|PubMed:17471236, ECO:0000269|PubMed:9694882, ECO:0000269|PubMed:9742218}.

Molecular Weight: 79.4 kDa

UniProt: [Q9NRF2](#)

## Application Details

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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.

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Restrictions: For Research Use only

## Handling

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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