

Datasheet for ABIN3095042

**RIPK3 Protein (AA 1-518) (Strep Tag)****1** Image[Go to Product page](#)

## Overview

|                               |  |
|-------------------------------|--|
| Quantity:                     | 1 mg   |
| Target:                       | RIPK3  |
| Protein Characteristics:      | AA 1-518                                       |
| Origin:                       | Human  |
| Source:                       | Tobacco (Nicotiana tabacum)                    |
| Protein Type:                 | Recombinant                                    |
| Purification tag / Conjugate: | This RIPK3 protein is labelled with Strep Tag. |
| Application:                  | Western Blotting (WB), SDS-PAGE (SDS), ELISA   |

## Product Details

Sequence: MSCVKLWPSG APAPLVSIEE LENQELVGKG GFGTVFRAQH RKWGYDVAVK IVNSKAISRE  
VKAMASLDNE FVLRLEGVIE KVNWDQDPKP ALVTKFMENG SLGGLLSQC PRPWPLLCRL  
LKEVLMGFY LHDQNPVLLH RDLKPSNVLL DPELHVKLAD FGLSTFQGS QSGTGSSEPG  
GTLGYLAPEL FVNVNRKAST ASDVYSFGIL MWAVLAGREV ELPTEPSLVY EAVCNQRNP  
SLAELPQAGP ETPGLEGLKE LMQLCWSSEP KDRPSFQECL PKTDEVFQMV ENNMNAAVST  
VKDFLSQLRS SNRRFSIPES GQGGTMDGF RRTIENQHSR NDVMVSEWLN KLNLEPPSS  
VPPKCPSTK RSRAQEEQVP QAWTAGTSSD SMAQPPQTPE TSTFRNQMPSTSTGTPSPG  
PRGNQGAERQ GMNWSCTPE PNPVTGRPLV NIYNCSGVQV GDNNYLTMQQ TTALPTWGLA  
PSGKGRGLQH PPPVGSQEGP KDPEAWSRPQ GWYNHSGK

**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.

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### 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

## Product Details

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)

Grade: Crystallography grade

## Target Details

Target: RIPK3

Alternative Name: RIPK3 ([RIPK3 Products](#))

Background: Receptor-interacting serine/threonine-protein kinase 3 (EC 2.7.11.1) (RIP-like protein kinase 3) (Receptor-interacting protein 3) (RIP-3),FUNCTION: Serine/threonine-protein kinase that activates necroptosis and apoptosis, two parallel forms of cell death (PubMed:19524512, PubMed:19524513, PubMed:22265413, PubMed:22265414, PubMed:22421439, PubMed:29883609, PubMed:32657447). Necroptosis, a programmed cell death process in response to death-inducing TNF-alpha family members, is triggered by RIPK3 following activation by ZBP1 (PubMed:19524512, PubMed:19524513, PubMed:22265413, PubMed:22265414, PubMed:22421439, PubMed:29883609, PubMed:32298652). Activated RIPK3 forms a necrosis-inducing complex and mediates phosphorylation of MLKL, promoting MLKL localization to the plasma membrane and execution of programmed necrosis characterized by calcium influx and plasma membrane damage (PubMed:19524512, PubMed:19524513, PubMed:22265413, PubMed:22265414, PubMed:22421439, PubMed:25316792, PubMed:29883609). In addition to TNF-induced necroptosis, necroptosis can also take place in the nucleus in response to orthomyxoviruses infection: following ZBP1 activation, which senses double-stranded Z-RNA structures, nuclear RIPK3 catalyzes phosphorylation and activation of MLKL, promoting disruption of the nuclear envelope and leakage of cellular DNA into the cytosol (By similarity). Also regulates apoptosis: apoptosis depends on RIPK1, FADD and CASP8, and is independent of MLKL and RIPK3 kinase activity (By similarity). Phosphorylates RIPK1: RIPK1 and RIPK3 undergo reciprocal auto- and trans-phosphorylation (PubMed:19524513). In some cell types, also able to restrict viral replication by promoting cell death-independent responses (By similarity). In response to Zika virus infection in neurons, promotes a cell death-independent pathway that restricts viral replication: together with ZBP1, promotes a death-independent transcriptional program that modifies the cellular metabolism via up-regulation expression of the enzyme ACOD1/IRG1 and production of the metabolite itaconate (By similarity). Itaconate inhibits the activity of succinate dehydrogenase,

## Target Details

generating a metabolic state in neurons that suppresses replication of viral genomes (By similarity). RIPK3 binds to and enhances the activity of three metabolic enzymes: GLUL, GLUD1, and PYGL (PubMed:19498109). These metabolic enzymes may eventually stimulate the tricarboxylic acid cycle and oxidative phosphorylation, which could result in enhanced ROS production (PubMed:19498109). {ECO:0000250|UniProtKB:Q9QZL0, ECO:0000269|PubMed:19498109, ECO:0000269|PubMed:19524512, ECO:0000269|PubMed:19524513, ECO:0000269|PubMed:22265413, ECO:0000269|PubMed:22265414, ECO:0000269|PubMed:22421439, ECO:0000269|PubMed:25316792, ECO:0000269|PubMed:29883609, ECO:0000269|PubMed:32298652, ECO:0000269|PubMed:32657447}., FUNCTION: (Microbial infection) In case of herpes simplex virus 1/HHV-1 infection, forms heteromeric amyloid structures with HHV-1 protein RIR1/ICP6 which may inhibit RIPK3-mediated necroptosis, thereby preventing host cell death pathway and allowing viral evasion. {ECO:0000269|PubMed:33348174}.

Molecular Weight: 56.9 kDa

UniProt: [Q9Y572](#)

Pathways: [Activation of Innate immune Response](#), [Toll-Like Receptors Cascades](#)

## 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.

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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)   |

## Images



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