

Datasheet for ABIN3088525  
**AIM2 Protein (AA 1-343) (Strep Tag)**



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## Overview

Quantity:	1 mg
Target:	AIM2
Protein Characteristics:	AA 1-343
Origin:	Human
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This AIM2 protein is labelled with Strep Tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS), ELISA

## Product Details

Sequence:	<p>MESKYKEILL LTGLDNITDE ELDRFKFFLS DEFNIATGKL HTANRIQVAT LMIQNAGAVS AVMKTIRIFQ KLN YM L LAKR LQEEKEKVDK QYKSVTKPKP LSQAEMSPAA SAAIRNDVAK QRAAPKVS PH VKPEQKQ MVA QQESIREGFQ KRCLPVMVLK AKKPFTFETQ EGKQEMFHAT VATEKEFFV V FNTLLKDK FIPKRIIIIA RYYRHSGFLE VNSASRVLDA ESDQKVNPL NIIRKAGETP KINTLQTQPL GTIVNGLFVV QKVTEKKKNI LFDLSDNTGK MEVLGVRNED TMKCKEGDKV RLFFFTLSKN GEKLQLTSGV HSTIKVIKAK KKT</p> <p><b>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.</b></p>
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Characteristics:	<p>Key Benefits:</p> <ul style="list-style-type: none"><li>• Made in Germany - from design to production - by highly experienced protein experts.</li><li>• Protein expressed with ALICE® and purified in one-step affinity chromatography</li></ul>
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## Product Details

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- 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 try to ensure that you receive soluble 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 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:	One-step Strep-tag purification of proteins expressed in Almost Living Cell-Free Expression System (ALiCE®).
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Purity:	> 80 % as determined by SDS PAGE, Western Blot and analytical SEC (HPLC).
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## Target Details

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Target:	AIM2
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Alternative Name:	AIM2 ( <a href="#">AIM2 Products</a> )
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Background:	Interferon-inducible protein AIM2 (Absent in melanoma 2),FUNCTION: Sensor component of the
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AIM2 inflammasome, which mediates inflammasome activation in response to the presence of double-stranded DNA (dsDNA) in the cytosol, leading to subsequent pyroptosis (PubMed:17726700, PubMed:19158675, PubMed:19158676, PubMed:19158679, PubMed:20566831, PubMed:26197926, PubMed:29440442, PubMed:23530044, PubMed:26583071, PubMed:33980849, PubMed:37364111). Inflammasomes are supramolecular complexes that assemble in the cytosol in response to pathogens and other damage-associated signals and play critical roles in innate immunity and inflammation (PubMed:17726700, PubMed:19158675, PubMed:19158676, PubMed:19158679, PubMed:20566831, PubMed:26197926, PubMed:29440442, PubMed:33980849). Acts as a recognition receptor (PRR): specifically recognizes and binds dsDNA in the cytosol, and mediates the formation of the inflammasome polymeric complex composed of AIM2, CASP1 and PYCARD/ASC (PubMed:17726700, PubMed:19158675, PubMed:19158676, PubMed:19158679, PubMed:20566831, PubMed:26197926, PubMed:29440442, PubMed:33980849). Recruitment of pro-caspase-1 (proCASP1) to the AIM2 inflammasome promotes caspase-1 (CASP1) activation, which subsequently cleaves and activates inflammatory cytokines IL1B and IL18 and gasdermin-D (GSDMD), promoting cytokine secretion (PubMed:17726700, PubMed:19158675, PubMed:19158676, PubMed:19158679, PubMed:20566831). In some cells, CASP1 activation mediates cleavage and activation of GSDMD, triggering pyroptosis without promoting cytokine secretion (PubMed:19158675, PubMed:19158676). Detects cytosolic dsDNA of viral and bacterial origin in a non-sequence-specific manner (PubMed:17726700, PubMed:19158675, PubMed:19158676, PubMed:19158679, PubMed:20566831, PubMed:26197926, PubMed:29440442, PubMed:26583071, PubMed:33980849). Involved in the DNA damage response caused by acute ionizing radiation by mediating pyroptosis of intestinal epithelial cells and bone marrow cells in response to double-strand DNA breaks (By similarity). Mechanistically, AIM2 senses DNA damage in the nucleus to mediate inflammasome assembly and inflammatory cell death (By similarity). Also acts as a regulator of neurodevelopment via its role in the DNA damage response: acts by promoting neural cell death in response to DNA damage in the developing brain, thereby purging genetically compromised cells of the central nervous system (By similarity). Pyroptosis mediated by the AIM2 inflammasome in response to DNA damage is dependent on GSDMD without involving IL1B and IL18 cytokine secretion (By similarity). Also acts as a mediator of pyroptosis, necroptosis and apoptosis (PANoptosis), an integral part of host defense against pathogens, in response to bacterial infection (By similarity). Can also trigger PYCARD/ASC-dependent, caspase-1-independent cell death that involves caspase-8 (CASP8) (By similarity). {ECO:0000250|UniProtKB:Q91VJ1, ECO:0000269|PubMed:17726700, ECO:0000269|PubMed:19158675, ECO:0000269|PubMed:19158676,

## Target Details

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ECO:0000269|PubMed:19158679, ECO:0000269|PubMed:20566831, ECO:0000269|PubMed:23530044, ECO:0000269|PubMed:26197926, ECO:0000269|PubMed:26583071, ECO:0000269|PubMed:29440442, ECO:0000269|PubMed:33980849, ECO:0000269|PubMed:37364111}, FUNCTION: Also acts as a tumor suppressor independently of its role in inflammatory response (PubMed:16432157). Able to suppress overt cell proliferation in enterocytes: restricts stem cell proliferation in the intestinal mucosa in an inflammasome-independent manner, contributing to a decrease in the likelihood of colorectal cancer development (By similarity). AIM2 suppresses cell proliferation by inhibiting phosphorylation of AKT1 at 'Ser-473', preventing AKT1 activation and AKT-mTOR signaling pathway (By similarity). Inhibits AKT1 phosphorylation both by inhibiting the activity of PRKDC/DNA-PK kinase and promoting dephosphorylation by PP2A phosphatase (By similarity). Also acts as a key regulator of regulatory T-cells (Treg) homeostasis by promoting their stability: acts by preventing AKT1 activation (By similarity). Its role in Treg homeostasis is important to restrain autoimmune diseases (By similarity). {ECO:0000250|UniProtKB:Q91VJ1, ECO:0000269|PubMed:16432157}.

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Molecular Weight: 39.0 kDa

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UniProt: [O14862](#)

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Pathways: [Activation of Innate immune Response](#), [Positive Regulation of Endopeptidase Activity](#), [Inflammasome](#)

## 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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## Application Details

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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)