

Datasheet for ABIN3135549

## IRAK1 Protein (AA 1-710) (Strep Tag)



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### Overview

Quantity:	250 µg
Target:	IRAK1
Protein Characteristics:	AA 1-710
Origin:	Mouse
Source:	Cell-free protein synthesis (CFPS)
Protein Type:	Recombinant
Purification tag / Conjugate:	This IRAK1 protein is labelled with Strep Tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS), ELISA

### Product Details

Brand:	AliCE®
Sequence:	<p>MAGGPGPGEP VVPGAQHFLY EVPPWVMCRF YKVMdalepa DWcQFAALIV RDQTELRLCE</p> <p>RSEQRTASVL WPWINRNARV ADLVHILTHL QLLRARDIIT AWHPPAPVVP PSTAAPRPSS</p> <p>ISAGSEAGDW SPRKLQSSAS TFLSPAFCGS QTHSESELLQ VPLPVSLGPP LPSSAPSSTK</p> <p>SSPESPVSGL QRAHPSPFCW PFCEISQGTC NFSEELRIGE GGFGCVYRAV MRNTTYAVKR</p> <p>LKEEADLEWT MVKQSFLTEV EQLSRFRHPN IVDFAGYCAE SGLYCLVYGF LPNGSLEDQL</p> <p>HLQTQACSPL SWPQRDILL GTARAIQLH QDSPSLIHGD IKSSNVLLDE RLMPKLGDFG</p> <p>LARFSRFAGA KASQSSTVAR TSTVRGTLAY LPEEYIKTGR LAVDtdtfsf GVVILETLAG</p> <p>QRAVRTQGAK TKYLDKLIED EAEAGVTLK STQPTLWVGv ATDAWAAPIA AQIYKKHLDS</p> <p>RPGPCPPQLG LALAQLACCC MHRRAKKRPP MTQVYKRLEG LQAGPPWELE VAGHGSPSPQ</p> <p>ENSYMSTTGS AQSGDEPWQP LVVTTTAPAQ AAQQLQRSPN QPVESDESVP GLSATLHSHW</p> <p>LTPGSHPSPA SFREASCTQG GTTRESSVRS SPGFQPTTME GSPTGSSSL SLEPPQIIIN</p>

PARQKMQVQKL ALYEEGVLDL LQLLSGGFFP GLDLEPEKSQ GPEESDEFQS

**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 in one-step affinity chromatography
- 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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## Product Details

Purity: > 70-80 % as determined by SDS PAGE, Western Blot and analytical SEC (HPLC).

Grade: custom-made

## Target Details

Target: IRAK1

Alternative Name: Irak1 ([IRAK1 Products](#))

Background: Interleukin-1 receptor-associated kinase 1 (IRAK) (IRAK-1) (EC 2.7.11.1) (Pelle-like protein kinase) (mPLK),FUNCTION: Serine/threonine-protein kinase that plays a critical role in initiating innate immune response against foreign pathogens. Involved in Toll-like receptor (TLR) and IL-1R signaling pathways. Is rapidly recruited by MYD88 to the receptor-signaling complex upon TLR activation. Association with MYD88 leads to IRAK1 phosphorylation by IRAK4 and subsequent autophosphorylation and kinase activation. Phosphorylates E3 ubiquitin ligases Pellino proteins (PELI1, PELI2 and PELI3) to promote pellino-mediated polyubiquitination of IRAK1. Then, the ubiquitin-binding domain of IKBKG/NEMO binds to polyubiquitinated IRAK1 bringing together the IRAK1-MAP3K7/TAK1-TRAF6 complex and the NEMO-IKKA-IKKB complex. In turn, MAP3K7/TAK1 activates IKKs (CHUK/IKKA and IKBKB/IKKB) leading to NF-kappa-B nuclear translocation and activation. Alternatively, phosphorylates TIRAP to promote its ubiquitination and subsequent degradation. Phosphorylates the interferon regulatory factor 7 (IRF7) to induce its activation and translocation to the nucleus, resulting in transcriptional activation of type I IFN genes, which drive the cell in an antiviral state. When sumoylated, translocates to the nucleus and phosphorylates STAT3 (By similarity). {ECO:0000250, ECO:0000269|PubMed:8663605}.

Molecular Weight: 77.3 kDa

UniProt: [Q62406](#)

Pathways: [NF-kappaB Signaling](#), [TLR Signaling](#), [Neurotrophin Signaling Pathway](#), [Activation of Innate immune Response](#), [Cellular Response to Molecule of Bacterial Origin](#), [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.

## Application Details

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Comment:	<p>ALiCE®, our Almost Living Cell-Free Expression System is based on a lysate obtained from <i>Nicotiana tabacum</i> 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.</p> <p>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!</p>
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Restrictions:	For Research Use only
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## Handling

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Format:	Liquid
Buffer:	<p>The buffer composition is at the discretion of the manufacturer.</p> <p>Standard Storage Buffer: PBS pH 7.4, 10 % Glycerol <b>Might differ depending on protein.</b></p>
Handling Advice:	Avoid repeated freeze-thaw cycles.
Storage:	-80 °C
Storage Comment:	Store at -80°C.
Expiry Date:	12 months