

Datasheet for ABIN3093231
IRAK1 Protein (AA 1-712) (Strep Tag)



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Overview

Quantity:	1 mg
Target:	IRAK1
Protein Characteristics:	AA 1-712
Origin:	Human
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This IRAK1 protein is labelled with Strep Tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS), ELISA

Product Details

Sequence:	MAGGPGPGEP AAPGAQHFLY EVPPWVMCRF YKVMDALEPA DWQCFAALIV RDQTELRICE RSGQRTASVL WPWINRNARV ADLVHILTHL QLLRARDIIT AWHPPAPLPS PGTTAPRPSS IPAPAEAEAW SPRKLPSSAS TFLSPAFFGS QTHSGPELGL VPSPASLWPP PPSPAPSSTK PGPESSVSL LQGARPFPFCW PLCEISRGTH NFSEELKIGE GGFGCVYRAV MRNTVYAVKR LKENADLEWT AVKQSFLTEV EQLSRFRHPN IVDFAGYCAQ NGFYCLVYGF LPNGSLEDRL HCQTQACPL SWPQRDLILL GTARAIQLH QDSPSLIHGD IKSSNVLLDE RLTPKLGDFG LARFSRFAGS SPSQSSMVAR TQTVRGTLAY LPEEYIKTGR LAVD TDTFSF GVVVLETLAG QRAVKTHGAR TKYLDLVEE EAEAGVALR STQSTLQAGL AADAWAAPIA MQIYKKHLDP RPGPCPPELG LGLGQLACCC LHRAKRRPP MTQVYERLEK LQAVVAGVPG HSEAASCIPP SPQENSYVSS TGRAHSGAAP WQPLAAPSGA SAQAAEQLQR GPNQPVESDE SLGGLSAAALR SWHLTPSCPL DPAPLREAGC PQGDTAGESS WSGPGSRPT AVEGLALGSS ASSSSEPPQI IINPARQKMV QKLALYEDGA LDSLQLLSSS SLPGLGLEQD RQGPEESDEF QS
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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.

Purification:

Two step purification of proteins expressed in Almost Living Cell-Free Expression System (ALiCE®):

Product Details

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)

Grade: Crystallography grade

Target Details

Target: IRAK1

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

Background: Interleukin-1 receptor-associated kinase 1 (IRAK-1) (EC 2.7.11.1),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. {ECO:0000269|PubMed:11397809, ECO:0000269|PubMed:12860405, ECO:0000269|PubMed:14684752, ECO:0000269|PubMed:15084582, ECO:0000269|PubMed:15465816, ECO:0000269|PubMed:15767370, ECO:0000269|PubMed:17997719, ECO:0000269|PubMed:20400509}.

Molecular Weight: 76.5 kDa

UniProt: [P51617](#)

Pathways: [NF-kappaB Signaling](#), [TLR Signaling](#), [Neurotrophin Signaling Pathway](#), [Activation of Innate](#)

Target Details

[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.

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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)



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