

Datasheet for ABIN3093326

## JAK2 Protein (AA 1-1132) (Strep Tag)



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### Overview

Quantity:	250 µg
Target:	JAK2
Protein Characteristics:	AA 1-1132
Origin:	Human
Source:	Cell-free protein synthesis (CFPS)
Protein Type:	Recombinant
Purification tag / Conjugate:	This JAK2 protein is labelled with Strep Tag.
Application:	SDS-PAGE (SDS), Western Blotting (WB), ELISA

### Product Details

Brand:	AliCE®
Sequence:	<p>MGMACLTMTME MEGTSTSSY QNGDISGNAN SMKQIDPVLQ VYLYHSLGKS EADYLTFFPSG</p> <p>EYVAEEICIA ASKACGITPV YHNMFALMSE TERIWYPPNH VFHIDESTRH NVLYRIRFYF</p> <p>PRWYCSGSNR AYRHGISRGA EAPLLDDFVM SYLFAQWRHD FVHGWIQVPV THETQEECLG</p> <p>MAVLDMMRRIA KENDQTPLAI YNSISYKTFL PKCIRAKIQD YHILTRKRIR YRFRRFIQQF</p> <p>SQCKATARNL KLKYLINLET LQSAFYTEKF EVKEPGSGPS GEEIFATIII TGNGGIQWSR</p> <p>GKHKESETLT EQDLQLYCDF PNIIDVSIKQ ANQEGSNESR VVTIHKQDGK NLEIELSSLR</p> <p>EALSFVSLID GYYRLTADAH HYLCKEVAPP AVLENIQSNC HGPISMDFAI SKLKKAGNQF</p> <p>GLYVLRCSKP DFNKYFLTFA VERENVIEYK HCLITKNENE EYNLSGTKKK FSSLKDLLNC</p> <p>YQMETVRSDN IIFQFTKCCP PKPKDKSNLL VFRTNGVSDV PTSPTLQRPT HMNQMVFHKI</p> <p>RNEDLIFNES LGQGTFTKIF KGVRRVGDY GQLHETEVLL KVLDAHRNY SESFFEAASM</p> <p>MSKLSHKHLV LNYGVCVCGD ENILVQEFVK FGSLDTYLKK NKNCINILWK LEVAKQLAWA</p>

MHFLEENTLI HGNVCAKNIL LIREEDRKTG NPPFIKLSDP GISITVLPKD ILQERIPWVP  
PECIENPKNL NLATDKWSFG TTLWEICSGG DKPLSALDSQ RKLQFYEDRH QLPAPKWAEL  
ANLINNCMDY EPDFRPSFRA IIRDLNSLFT PDYELLTEND MLPNMRIGAL GFSGAFEDRD  
PTQFEERHLK FLQQLGKGNF GSVEMCRYDP LQDNTGEVVA VKKLQHSTEE HLRDFEREIE  
ILKSLQHDNI VKYKGVCYSA GRRNLKLIME YLPYGSLRDY LQKHKERIDH IKLLQYTSQI  
CKGMEYLGTK RYIHRDLATR NILVENENRV KIGDFGLTKV LPQDKEYYKV KEPGESPIFW  
YAPESLTESK FSVASDVWSF GVVLYELFTY IEKSKSPPAE FMRMIGNDKQ GQMIVFHLIE  
LLKNNGRLPR PDGCPDEIYM IMTECWNNNV NQRPSFRDLA LRVDQIRDNM AG

**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:

## Product Details

- 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.

Purification: One-step Strep-tag purification of proteins expressed in Almost Living Cell-Free Expression System (AliCE®).

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

Grade: custom-made

## Target Details

Target: JAK2

Alternative Name: JAK2 ([JAK2 Products](#))

Background: Tyrosine-protein kinase JAK2 (EC 2.7.10.2) (Janus kinase 2) (JAK-2),FUNCTION: Non-receptor tyrosine kinase involved in various processes such as cell growth, development, differentiation or histone modifications. Mediates essential signaling events in both innate and adaptive immunity. In the cytoplasm, plays a pivotal role in signal transduction via its association with type I receptors such as growth hormone (GHR), prolactin (PRLR), leptin (LEPR), erythropoietin (EPOR), thrombopoietin (THPO), or type II receptors including IFN-alpha, IFN-beta, IFN-gamma and multiple interleukins (PubMed:7615558). Following ligand-binding to cell surface receptors, phosphorylates specific tyrosine residues on the cytoplasmic tails of the receptor, creating docking sites for STATs proteins (PubMed:9618263). Subsequently, phosphorylates the STATs proteins once they are recruited to the receptor. Phosphorylated STATs then form homodimer or heterodimers and translocate to the nucleus to activate gene transcription. For example, cell stimulation with erythropoietin (EPO) during erythropoiesis leads to JAK2 autophosphorylation, activation, and its association with erythropoietin receptor (EPOR) that becomes phosphorylated in its cytoplasmic domain. Then, STAT5 (STAT5A or STAT5B) is recruited, phosphorylated and activated by JAK2. Once activated, dimerized STAT5 translocates into the nucleus and promotes the transcription of several essential genes involved in the modulation of erythropoiesis. Part of a signaling cascade that is activated by increased cellular retinol and that leads to the activation of STAT5 (STAT5A or STAT5B) (PubMed:21368206). In addition, JAK2 mediates angiotensin-2-induced ARHGEF1 phosphorylation (PubMed:20098430). Plays a role in cell cycle by phosphorylating CDKN1B (PubMed:21423214). Cooperates with TEC through reciprocal phosphorylation to mediate cytokine-driven activation of FOS transcription. In the nucleus, plays a key role in chromatin by specifically mediating phosphorylation of 'Tyr-

## Target Details

	41' of histone H3 (H3Y41ph), a specific tag that promotes exclusion of CBX5 (HP1 alpha) from chromatin (PubMed:19783980). {ECO:0000269 PubMed:12023369, ECO:0000269 PubMed:19783980, ECO:0000269 PubMed:20098430, ECO:0000269 PubMed:21368206, ECO:0000269 PubMed:21423214, ECO:0000269 PubMed:7615558, ECO:0000269 PubMed:9618263}.
Molecular Weight:	130.7 kDa
UniProt:	<a href="#">O60674</a>
Pathways:	<a href="#">JAK-STAT Signaling</a> , <a href="#">RTK Signaling</a> , <a href="#">Interferon-gamma Pathway</a> , <a href="#">Positive Regulation of Peptide Hormone Secretion</a> , <a href="#">Intracellular Steroid Hormone Receptor Signaling Pathway</a> , <a href="#">Response to Growth Hormone Stimulus</a> , <a href="#">Positive Regulation of Endopeptidase Activity</a> , <a href="#">Protein targeting to Nucleus</a> , <a href="#">CXCR4-mediated Signaling Events</a> , <a href="#">Platelet-derived growth Factor Receptor Signaling</a> , <a href="#">Unfolded Protein Response</a>

## 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.
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>
Restrictions:	For Research Use only

## Handling

Format:	Liquid
Buffer:	The buffer composition is at the discretion of the manufacturer. Standard Storage Buffer: PBS pH 7.4, 10 % Glycerol <b>Might differ depending on protein.</b>

## Handling

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Handling Advice:	Avoid repeated freeze-thaw cycles.
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Storage:	-80 °C
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Storage Comment:	Store at -80°C.
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Expiry Date:	12 months
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