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Datasheet for ABIN3093326

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

1 Image

Overview

Quantity:	1 mg
Target:	JAK2
Protein Characteristics:	AA 1-1132
Origin:	Human
Source:	Tobacco (<i>Nicotiana tabacum</i>)
Protein Type:	Recombinant
Purification tag / Conjugate:	This JAK2 protein is labelled with Strep Tag.
Application:	SDS-PAGE (SDS), Western Blotting (WB), ELISA

Product Details

Sequence: MGMACLTMTE MEGTSTSSIIY QNGDISGNAN SMKQIDPVLQ VVLYHSLGKS EADYLTFPSG
EYVAEEICIA ASKACGITPV YHNMFALMSE TERIWYPPNH VFHIDESTRH NVLYRIRFYF
PRWYCSGSNR AYRHGISRGA EAPLLDDFVM SYLFAQWRHD FVHGWIQVPV THETQEECLG
MAVLDMRIA KENDQTPLAI YNSISYKTFK PKCIRAKIQD YHILTRKRIR YRFRRFIQQF
SQCKATARNL KLKYLINLET LQSAFYTEKF EVKEPGSGPS GEEIFATIII TGNGGIQWSR
GKHKESETLT EQDLQLYCDF PNIIDVSIKQ ANQEGSNESR VVTIHKQDGK NLEIELSSLR
EALSFVSLID GYYRLTADAH HYLCKEVAPP AVLENIQSNC HGPISMDFAI SKLKKAGNQT
GLYVLRCSKP DFNKYFLTFA VERENVIEYK HCLITKNENE EYNLSGTTKN FSSLKDLLNC
YQMETVRSND IIFQFTKCCP PKPKDKSNLL VFRTNGVSDV PTSPTLQRPT HMNQMVFHKI
RNEDLIFNES LGQGTFTKIF KGVRRVGDY GQLHETEVLV KVLDAHRNY SESFFEAASM
MSKLSHKHLV LNYGVCVCGD ENILVQEFVK FGSLDTYLKK NKNCINILWK LEVAKQLAWA
MHFLEENTLI HGNVCAKNIL LIREEDRKTG NPPFIKLSDP GISITVLPKD ILQERIPWVP

PECIENPKNL NLATDKWSFG TTLWEICSGG DKPLSALDSQ RKLQFYEDRH QLPAPKWAE
ANLINNCMDY EPDFRPSFRA IIRDLNSLFT PDYELLTEND MLPNMRIGAL GFSGAFEDRD
PTQFEERHLK FLQQLGKGNF GSVEMCRYDP LQDNTGEVVA VKKLQHSTEE HLRDFEREIE
ILKSLQHDNI VKYKGVCSYA GRRNLKLIME YLPYGSLRDY LQKHKERIDH IKLLQYTSQI
CKGMEYLGTK RYIHRDLATR NILVENENRV KIGDFGLTKV LPQDKEYYKV KEPGESPIFW
YAPESLTESK FSVASDVWSF GVVLYELFTY IEKSKSPPAE FMRMIGNDKQ GQMIVFHLE
LLKNNGLRPR PDGCPDEIYM IMTECWNNNV NQRPSFRDLA LRVQDIRDNM 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.

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:

Product Details

- 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®): <ol style="list-style-type: none">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:	JAK2
Alternative Name:	JAK2 (JAK2 Products)
Background:	<p>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</p>

Target Details

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-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: [O60674](#)

Pathways: [JAK-STAT Signaling](#), [RTK Signaling](#), [Interferon-gamma Pathway](#), [Positive Regulation of Peptide Hormone Secretion](#), [Intracellular Steroid Hormone Receptor Signaling Pathway](#), [Response to Growth Hormone Stimulus](#), [Positive Regulation of Endopeptidase Activity](#), [Protein targeting to Nucleus](#), [CXCR4-mediated Signaling Events](#), [Platelet-derived growth Factor Receptor Signaling](#), [Unfolded Protein Response](#)

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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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!

Application Details

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