

Datasheet for ABIN3137232

ZAK Protein (AA 1-802) (Strep Tag)



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Overview

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| Quantity: | 250 µg |
| Target: | ZAK |
| Protein Characteristics: | AA 1-802 |
| Origin: | Mouse |
| Source: | Cell-free protein synthesis (CFPS) |
| Protein Type: | Recombinant |
| Purification tag / Conjugate: | This ZAK protein is labelled with Strep Tag. |
| Application: | ELISA, Western Blotting (WB), SDS-PAGE (SDS) |

Product Details

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| Brand: | AlIcE® |
| Sequence: | <p>MSSLGASFVQ IKFDDLQFFE NCGGGSFGSV YRAKWISQDK EVAVKKLLKI EKEAEILSVL</p> <p>SHRNIIQFYG VILEPPNYGI VTEYASLGSL YDYINSNRSE EMDMEHIMTW ATDVAKGMHY</p> <p>LHMEAPVKVI HRDLKSRNVV IAADGVLKIC DFGASRFHNN TTHMSLVGTF PWMAPEVIQS</p> <p>LPVSETCDTY SYGVVLWEML TREVPFKGLE GLQVAWLVE KNERLTIPSS CPRSFAELLH</p> <p>QCWEADAKKR PSFKQIISIL ESMSNDTNLP DQCNSFLHNK AEWRCIEAT LERLKKLERD</p> <p>LSFKEQELKE RERRLKMWEQ KLTEQSNTP LPSFEIGAWT EDDVYFWVQQ LVRKGESSVE</p> <p>MSGYASLFKE NNITGKRLLL LEEEDLKDMG IVSKGHHHF KSAIEKLTHD YLNLHFHPPL</p> <p>IKDSGGEPEE NEEKIVNLEL VFGFHLKPGT GPQDCKWKMY MEMDGDEVAI TYIKDVTFNT</p> <p>SLPDAEILKM TKPPFVMEKW IVGIAEDQTV ECTVTYENDV RTPKLTKHVH SIQWDRTPKQ</p> <p>DEVKAVQLAI QTLFSSSEGN PGSRSDDSSAD CQWLDTLRMR QIASHTSLQR SQSNPILGSP</p> <p>FFPYFANQDS YAAAVRRTQT PVKYQQITPS INPSRSSSPT QYGLSRNFSS LNLSSRDSGF</p> |

SSLNDSSSER GRYSRDRSRNK YYRGSVSLNS SPKGRYGGKS QHSTPSRERY SGKFYRLPQS
ALNTHQSPDF KRSPNDHDDR VPRTIPGMPL HPETASKAGE EESRVSEGGW TKVEYRKKTH
RQLSAKTSKE RTRGNYRGRR NF

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 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.

Purification:

One-step Strep-tag purification of proteins expressed in Almost Living Cell-Free Expression

Product Details

System (AliCE®).

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

Grade: custom-made

Target Details

Target: ZAK

Alternative Name: Map3k20 ([ZAK Products](#))

Background: Mitogen-activated protein kinase kinase kinase 20 (EC 2.7.11.25) (Leucine zipper- and sterile alpha motif kinase ZAK) (Leucine zipper- and sterile alpha motif-containing kinase) (MLK-like mitogen-activated protein triple kinase) (Mitogen-activated protein kinase kinase kinase MLT) (Mixed lineage kinase-related kinase) (MLK-related kinase) (MRK) (Sterile alpha motif- and leucine zipper-containing kinase AZK),FUNCTION: Stress-activated component of a protein kinase signal transduction cascade that promotes programmed cell death in response to various stress, such as ribosomal stress, osmotic shock and ionizing radiation (PubMed:11042189, PubMed:27598200). Acts by catalyzing phosphorylation of MAP kinase kinases, leading to activation of the JNK (MAPK8/JNK1, MAPK9/JNK2 and/or MAPK10/JNK3) and MAP kinase p38 (MAPK11, MAPK12, MAPK13 and/or MAPK14) pathways (PubMed:11042189). Activates JNK through phosphorylation of MAP2K4/MKK4 and MAP2K7/MKK7, and MAP kinase p38 gamma (MAPK12) via phosphorylation of MAP2K3/MKK3 and MAP2K6/MKK6 (PubMed:11042189). Involved in stress associated with adrenergic stimulation: contributes to cardiac decompensation during periods of acute cardiac stress (By similarity). May be involved in regulation of S and G2 cell cycle checkpoint by mediating phosphorylation of CHEK2 (By similarity). {ECO:0000250|UniProtKB:Q9NYL2, ECO:0000269|PubMed:11042189, ECO:0000269|PubMed:27598200}., FUNCTION: [Isoform ZAKalpha]: Key component of the stress-activated protein kinase signaling cascade in response to ribotoxic stress or UV-B irradiation (PubMed:32289254). Acts as the proximal sensor of ribosome collisions during the ribotoxic stress response (RSR) (PubMed:32289254). Directly binds to the ribosome by inserting its flexible C-terminus into the ribosomal intersubunit space, thereby acting as a sentinel for colliding ribosomes (By similarity). Upon ribosome collisions, activates either the stress-activated protein kinase signal transduction cascade or the integrated stress response (ISR), leading to programmed cell death or cell survival, respectively (By similarity). Dangerous levels of ribosome collisions trigger the autophosphorylation and activation of MAP3K20, which dissociates from colliding ribosomes and phosphorylates MAP kinase kinases, leading to activation of the JNK and MAP kinase p38 pathways that promote

Target Details

programmed cell death (By similarity). Less dangerous levels of ribosome collisions trigger the integrated stress response (ISR): MAP3K20 activates EIF2AK4/GCN2 independently of its protein-kinase activity, promoting EIF2AK4/GCN2-mediated phosphorylation of EIF2S1/eIF-2-alpha (By similarity). Also acts as a histone kinase by phosphorylating histone H3 at 'Ser-28' (H3S28ph) (By similarity). {ECO:0000250|UniProtKB:Q9NYL2, ECO:0000269|PubMed:32289254}., FUNCTION: [Isoform ZAKbeta]: Isoform that lacks the C-terminal region that mediates ribosome-binding: does not act as a sensor of ribosome collisions in response to ribotoxic stress. May act as an antagonist of isoform ZAKalpha: interacts with isoform ZAKalpha, leading to decrease the expression of isoform ZAKalpha. {ECO:0000250|UniProtKB:Q9NYL2}.

Molecular Weight: 91.7 kDa

UniProt: [Q9ESL4](#)

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: 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!

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 **Might differ depending on protein.**

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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