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Datasheet for ABIN3119053

## TAO Kinase 2 Protein (TAOK2) (AA 1-1235) (Strep Tag)

### Overview

Quantity:	1 mg
Target:	TAO Kinase 2 (TAOK2)
Protein Characteristics:	AA 1-1235
Origin:	Human
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This TAO Kinase 2 protein is labelled with Strep Tag.
Application:	ELISA, Western Blotting (WB), SDS-PAGE (SDS)

### Product Details

Sequence: MPAGGRAGSL KDPDVAELFF KDDPEKLFSD LREIGHGSFG AVYFARDVRN SEVVAIKKMS  
YSGKQSNEKW QDIIKEVRFL QKLRHPNTIQ YRGCYLREHT AWLVMEYCLG SASDLLLEVHK  
KPLQEVEIAA VTHGALQGLA YLHSHNMIHR DVKAGNILLS EPGLVKLGDF GSASIMAPAN  
SFVGTPTYWMA PEVILAMDEG QYDGKVDVWS LGITCIELAE RKPPLFMNA MSALYHIAQN  
ESPVLQSGHW SEYFRNFVDS CLQKIPQDRP TSEVLLKHRF VLRERPPTVI MDLIQRTKDA  
VRELDNLQYR KMKKILFQEA PNGPGAEAPE EEEEEAPYMH RAGTLTSLES SHSVPSMSIS  
ASSQSSSVNS LADASDNEEE EEEEEEEEEEE EEEPEAREMA MMQEGEHTVT SHSSIIHRLP  
GSDNLYDDPY QPEITPSPLQ PPAAPAPTST TSSARRRAYC RNRDHFATIR TASLVSRIQ  
EHEQDSALRE QLSGYKRMRR QHQKQLLALE SRLRGEEH SARLQRELEA QRAGFGAEAE  
KLARRHQAIG EKEARAAQAE ERKFQQHILG QQKELAALL EAQRKYKLR KEQLKEELQE  
NPSTPKREKA EWLLRQKEQL QCCQAEAEAG LLRRQRQYFE LQCRQYKRKM LLARHSLDQD  
LLREDLNKKQ TQKDLECALL LRQHEATREL ELRQLQAVQR TRAELTRLQH QTELGNQLEY

NKRREQELRQ KHAAQVRQP KSLKVRAGQR PPGLPLPIPG ALGPPNTGTP IEQQPCSPGQ  
EAVLDQRMLG EEEEAVGERR ILGKEGATLE PKQQRILGEE SGAPSPSPQK HGSLVDEEVW  
GLPEEIEELR VPSLVQERS IVGQEEAGTW SLWGKEDESL LDEEFELGWV QGPALTPVPE  
EEEEEEGAP IGTPRDPGDG CPSPDIPPEP PPTHLRPCPA SQLPGLLSHG LLAGLSFAVG  
SSSGLLPLLL LLLLPLLAAQ GGGGLQAALL ALEVGLVGLG ASYLLCTAL HLPSSLFLLL  
AQGTALGAVL GLSWRRGLMG VPLGLGAAWL LAWPGALPL VAMAAGGRWV RQQGPRVRRG  
ISRLWLRVLL RLSPMAFRAL QGCGAVGDRG LFALYPKTNK DGFRSRLPVP GPRRRNPRTT  
QHPLALLARV WVLCKGWNWR LARASQLAS HLPWAIHTL ASWGLLRGER PTRIPRLLPR  
SQRQLGPPAS RQPLPGTLAG RRSRTRQSRA LPPWR

**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 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!

## Product Details

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### 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.

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### Purification:

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

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.

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### Purity:

>80 % as determined by SDS PAGE, Size Exclusion Chromatography and Western Blot.

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### Endotoxin Level:

Low Endotoxin less than 1 EU/mg (< 0.1 ng/mg)

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## Target Details

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### Target:

TAO Kinase 2 (TAOK2)

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### Alternative Name:

TAOK2 ([TAOK2 Products](#))

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### Background:

Serine/threonine-protein kinase TAO2 (EC 2.7.11.1) (Kinase from chicken homolog C) (hKFC-C) (Prostate-derived sterile 20-like kinase 1) (PSK-1) (PSK1) (Prostate-derived STE20-like kinase 1) (Thousand and one amino acid protein kinase 2),FUNCTION: Serine/threonine-protein kinase involved in different processes such as membrane blebbing and apoptotic bodies formation DNA damage response and MAPK14/p38 MAPK stress-activated MAPK cascade. Phosphorylates itself, MBP, activated MAPK8, MAP2K3, MAP2K6 and tubulins. Activates the MAPK14/p38 MAPK signaling pathway through the specific activation and phosphorylation of the upstream MAP2K3 and MAP2K6 kinases. In response to DNA damage, involved in the G2/M transition DNA damage checkpoint by activating the p38/MAPK14 stress-activated MAPK cascade, probably by mediating phosphorylation of upstream MAP2K3 and MAP2K6 kinases. Isoform 1, but not isoform 2, plays a role in apoptotic morphological changes, including cell contraction, membrane blebbing and apoptotic bodies formation. This function, which requires the activation of MAPK8/JNK and nuclear localization of C-terminally truncated isoform 1, may be linked to the mitochondrial CASP9-associated death pathway. Isoform 1

## Target Details

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binds to microtubules and affects their organization and stability independently of its kinase activity. Prevents MAP3K7-mediated activation of CHUK, and thus NF-kappa-B activation, but not that of MAPK8/JNK. May play a role in the osmotic stress-MAPK8 pathway. Isoform 2, but not isoform 1, is required for PCDH8 endocytosis. Following homophilic interactions between PCDH8 extracellular domains, isoform 2 phosphorylates and activates MAPK14/p38 MAPK which in turn phosphorylates isoform 2. This process leads to PCDH8 endocytosis and CDH2 cointernalization. Both isoforms are involved in MAPK14 phosphorylation.

{ECO:0000269|PubMed:10660600, ECO:0000269|PubMed:11279118, ECO:0000269|PubMed:12639963, ECO:0000269|PubMed:12665513, ECO:0000269|PubMed:13679851, ECO:0000269|PubMed:16893890, ECO:0000269|PubMed:17158878, ECO:0000269|PubMed:17396146}.

Molecular Weight: 138.3 kDa

UniProt: [Q9UL54](#)

Pathways: [Cell-Cell Junction Organization](#)

## Application Details

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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

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Format: Liquid

## Handling

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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)