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Datasheet for ABIN3137630  
**MSK2 Protein (AA 1-773) (Strep Tag)**

### Overview

Quantity:	1 mg
Target:	MSK2 (RPS6KA4)
Protein Characteristics:	AA 1-773
Origin:	Mouse
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This MSK2 protein is labelled with Strep Tag.
Application:	ELISA, Western Blotting (WB), SDS-PAGE (SDS)

### Product Details

Sequence: MGDEDEDEGC AVELQITEAN LTGHEEKVSV ENFALLKVLG TGAYGKVFLV RKTGGHDAGK  
LYAMKVLKKA ALVQRAKTQE HTRTERSULE LVRQAPFLVT LHAFQTDAL LHLILDYVSG  
GEMFTHLYQR QYFKEAEVRV YGGEIVLAL HLHKLGIYR DLKLENVLLD SEGHIVLTDL  
GLSKEFLTEE KERTFSFCGT IEYMAPEIIR SKAGHGKAVD WWSLGILLFE LLTGASPFLL  
EGERNQAQEV SRRILKCSPP FPLRIGPVAQ DLLQRLCKD PKKRLGAGPQ GAQEVKSHPF  
FQGLDWVALA ARKIPAPFRP QIRSELDVGN FAEFTRLEP VYSPAGSPPP GDPRIFQGYL  
FVAPSILFDH NNAVMADVLQ APGAGYRPGR AAVARSAMMQ DSPFFQYEL DLREPALGQG  
SFSVCRRCRQ RQSGQEFQV ILSRRLEENT QREVAALRLC QSHPNVNLH EVLHDQLHTY  
LVLELLRGGE LLEHIRKKRL FSESEASQIL RSLVSAVSFM HEEAGVHRD LKPENILYAD  
DTPGAPVKII DFGFARLRPQ SPAEPMQTPC FTLQYAAPEL LAQQGYDESC DLWSLGVILY  
MMLSGQVPFQ GASGQGGQSQ AAEIMCKIRE GRFSLDGEAW QGVSEEAKEK VRGLLTVDPV  
KRLKLEGLRS SSWLQDGSAR SSPPLRTPDV LESSGPAVRS GLNATFMAFN RGKREGFFLK

SVENAPLAKR RKQKLRSAAS SRRGSPVPAS SGRLPASAAS GTTRRANGPL SPS

**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!

#### 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

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## Product Details

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(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:  $\geq 80\%$  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)

## Target Details

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Target: MSK2 (RPS6KA4)

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Alternative Name: Rps6ka4 ([RPS6KA4 Products](#))

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Background: Ribosomal protein S6 kinase alpha-4 (S6K-alpha-4) (EC 2.7.11.1) (90 kDa ribosomal protein S6 kinase 4) (Nuclear mitogen- and stress-activated protein kinase 2) (RSK-like protein kinase) (RLSK),FUNCTION: Serine/threonine-protein kinase that is required for the mitogen or stress-induced phosphorylation of the transcription factors CREB1 and ATF1 and for the regulation of the transcription factor RELA, and that contributes to gene activation by histone phosphorylation and functions in the regulation of inflammatory genes. Phosphorylates CREB1 and ATF1 in response to mitogenic or stress stimuli such as UV-C irradiation, epidermal growth factor (EGF) and anisomycin. Plays an essential role in the control of RELA transcriptional activity in response to TNF. Phosphorylates 'Ser-10' of histone H3 in response to mitogenics, stress stimuli and EGF, which results in the transcriptional activation of several immediate early genes, including proto-oncogenes c-fos/FOS and c-jun/JUN. May also phosphorylate 'Ser-28' of histone H3. Mediates the mitogen- and stress-induced phosphorylation of high mobility group protein 1 (HMG1/HMG14). In lipopolysaccharide-stimulated primary macrophages, acts downstream of the Toll-like receptor TLR4 to limit the production of pro-inflammatory cytokines. Functions probably by inducing transcription of the MAP kinase phosphatase DUSP1 and the anti-inflammatory cytokine interleukin 10 (IL10), via CREB1 and ATF1 transcription factors (By similarity). {ECO:0000250, ECO:0000269|PubMed:11909979, ECO:0000269|PubMed:16517600, ECO:0000269|PubMed:18690222}.

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Molecular Weight: 85.7 kDa

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UniProt: [Q9Z2B9](#)

## 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.

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**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!

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**Restrictions:** For Research Use only

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## Handling

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**Format:** Liquid

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**Buffer:** The buffer composition is at the discretion of the manufacturer. If you have a special request, please contact us.

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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:** Unlimited (if stored properly)

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