

Datasheet for ABIN3094295

## NUAK1 Protein (AA 1-661) (Strep Tag)



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### Overview

Quantity:	250 µg
Target:	NUAK1
Protein Characteristics:	AA 1-661
Origin:	Human
Source:	Cell-free protein synthesis (CFPS)
Protein Type:	Recombinant
Purification tag / Conjugate:	This NUAK1 protein is labelled with Strep Tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS), ELISA

### Product Details

Brand:	AlIcE®
Sequence:	<p>MEGAAAPVAG DRPDGLGLGAP GSPREAVAGA TAALEPRKPH GVKRHHHKHN LKHRYELQET</p> <p>LGKGTYGKVK RATERFSGRV VAIKSIRKDK IKDEQDMVHI RREIEMSSL NHPHIISIYE</p> <p>VFENKDKIVI IMEYASKGEL YDYISERRRL SERETRHFFR QIVSAVHYCH KNGVVHRDLK</p> <p>LENILLDDNC NIKIADFGLS NLYQKDKFLQ TFCGSPLYAS PEIVNGRPYR GPEVDSWALG</p> <p>VLLYTLVYGT MPFDGFDHKN LIRQISSGEY REPTQPSDAR GLIRWMLMVN PDRRATIEDI</p> <p>ANHWWVNWGY KSSVCD DAL HDSESP LLAR IIDWHHRSTG LQADTEAKMK GLAKPTTSEV</p> <p>MLERQRSLKK SKKENDFAQS GQDAVPESPS KLSSKRPKGI LKKRSNSEHR SHSTGFIEGV</p> <p>VGPALPSTFK MEQDLCRTGV LLPSSPEAEV PGKLSPKQSA TMPKKGILKK TQRESGYYS</p> <p>SPERSESSEL LDSNDVMGSS IPSPSPDPDA RVTSHSLSCR RKGILKHSSK YSAGTMDPAL</p> <p>VSPEMPTLES LSEPGVPAEG LRSYSRPSS VISDDSVLSS DSFDLLDLQE NRPARQRIRS</p> <p>CVSAENFLQI QDFEGLQNRP RPQYLKRYRN RLADSSFSLL TDMDDVTQVY KQALEICSKL N</p>

**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:

- 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.

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### Purification:

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

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### Purity:

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

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## Product Details

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Grade: custom-made

## Target Details

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Target: NUAK1

Alternative Name: NUAK1 ([NUAK1 Products](#))

Background: NUAK family SNF1-like kinase 1 (EC 2.7.11.1) (AMPK-related protein kinase 5) (ARK5) (Omphalocyte kinase 1),FUNCTION: Serine/threonine-protein kinase involved in various processes such as cell adhesion, regulation of cell ploidy and senescence, cell proliferation and tumor progression. Phosphorylates ATM, CASP6, LATS1, PPP1R12A and p53/TP53. Acts as a regulator of cellular senescence and cellular ploidy by mediating phosphorylation of 'Ser-464' of LATS1, thereby controlling its stability. Controls cell adhesion by regulating activity of the myosin protein phosphatase 1 (PP1) complex. Acts by mediating phosphorylation of PPP1R12A subunit of myosin PP1: phosphorylated PPP1R12A then interacts with 14-3-3, leading to reduced dephosphorylation of myosin MLC2 by myosin PP1. May be involved in DNA damage response: phosphorylates p53/TP53 at 'Ser-15' and 'Ser-392' and is recruited to the CDKN1A/WAF1 promoter to participate in transcription activation by p53/TP53. May also act as a tumor malignancy-associated factor by promoting tumor invasion and metastasis under regulation and phosphorylation by AKT1. Suppresses Fas-induced apoptosis by mediating phosphorylation of CASP6, thereby suppressing the activation of the caspase and the subsequent cleavage of CFLAR. Regulates UV radiation-induced DNA damage response mediated by CDKN1A. In association with STK11, phosphorylates CDKN1A in response to UV radiation and contributes to its degradation which is necessary for optimal DNA repair (PubMed:25329316). {ECO:0000269|PubMed:12409306, ECO:0000269|PubMed:14976552, ECO:0000269|PubMed:15060171, ECO:0000269|PubMed:15273717, ECO:0000269|PubMed:19927127, ECO:0000269|PubMed:20354225, ECO:0000269|PubMed:21317932, ECO:0000269|PubMed:25329316}.

Molecular Weight: 74.3 kDa

UniProt: [O60285](#)

## 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.

## Application Details

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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>
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Restrictions:	For Research Use only
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## Handling

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Format:	Liquid
Buffer:	<p>The buffer composition is at the discretion of the manufacturer.</p> <p>Standard Storage Buffer: PBS pH 7.4, 10 % Glycerol <b>Might differ depending on protein.</b></p>
Handling Advice:	Avoid repeated freeze-thaw cycles.
Storage:	-80 °C
Storage Comment:	Store at -80°C.
Expiry Date:	12 months