

Datasheet for ABIN3084656

**NK2 Homeobox 5 Protein (NKX2-5) (AA 1-324) (Strep Tag)**[Go to Product page](#)**1** Image

## Overview

Quantity:	1 mg
Target:	NK2 Homeobox 5 (NKX2-5)
Protein Characteristics:	AA 1-324
Origin:	Human
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This NK2 Homeobox 5 protein is labelled with Strep Tag.
Application:	ELISA, Western Blotting (WB), SDS-PAGE (SDS)

## Product Details

Sequence: MFPSPALTPT PFSVKDILNL EQQQRSLAAA GELSARLEAT LAPSSCMLAA FKPEAYAGPE  
AAAPGLPELR AELGRAPSPA KCASAFPAAP AFYPRAYSDP DPAKDPRAEK KELCALQKAV  
ELEKTEADNA ERPRARRRRK PRVLFSQAQV YELERRFKQQ RYLSAPERDQ LASVLKLTST  
QVKIWFQNRN YKCKRQRQDQ TLELVGLPPP PPPPARRIAV PVLVRDGKPC LGDSAPYAPA  
YGVGLNPYGY NAYPAYPGYG GAACSPGYSC TAAYPAGPSP AQPATAAANN NFNVFGVGDL  
NAVQSPGIPQ SNSGVSTLHG IRAW

**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: <ul style="list-style-type: none"><li>• Made in Germany - from design to production - by highly experienced protein experts.</li><li>• Protein expressed with ALICE® and purified by multi-step, protein-specific process to ensure</li></ul>
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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 (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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## Product Details

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

Grade: Crystallography grade

## Target Details

Target: NK2 Homeobox 5 (NKX2-5)

Alternative Name: NKX2-5 ([NKX2-5 Products](#))

Background: Homeobox protein Nkx-2.5 (Cardiac-specific homeobox) (Homeobox protein CSX) (Homeobox protein NK-2 homolog E),FUNCTION: Transcription factor required for the development of the heart and the spleen (PubMed:22560297). During heart development, acts as a transcriptional activator of NPPA/ANF in cooperation with GATA4 (By similarity). May cooperate with TBX2 to negatively modulate expression of NPPA/ANF in the atrioventricular canal (By similarity). Binds to the core DNA motif of NPPA promoter (PubMed:22849347, PubMed:26926761). Together with PBX1, required for spleen development through a mechanism that involves CDKN2B repression (PubMed:22560297). Positively regulates transcription of genes such as COL3A1 and MMP2, resulting in increased pulmonary endothelial fibrosis in response to hypoxia (PubMed:29899023). {ECO:0000250|UniProtKB:P42582, ECO:0000269|PubMed:22560297, ECO:0000269|PubMed:22849347, ECO:0000269|PubMed:26926761, ECO:0000269|PubMed:29899023}.

Molecular Weight: 34.9 kDa

UniProt: [P52952](#)

Pathways: [Regulation of Muscle Cell Differentiation, Skeletal Muscle Fiber Development](#)

## 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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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