Datasheet for ABIN3094052

NEK2 Protein (AA 1-445) (Strep Tag)

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Overview

Quantity:	1 mg
Target:	NEK2
Protein Characteristics:	AA 1-445
Origin:	Human
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This NEK2 protein is labelled with Strep Tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS), ELISA

Product Details

Sequence:	MPSRAEDYEV LYTIGTGSYG RCQKIRRKSD GKILVWKELD YGSMTEAEKQ MLVSEVNLLR ELKHPNIVRY YDRIIDRTNT TLYIVMEYCE GGDLASVITK GTKERQYLDE EFVLRVMTQL TLALKECHRR SDGGHTVLHR DLKPANVFLD GKQNVKLGDF GLARILNHDT SFAKTFVGTP YYMSPEQMNR MSYNEKSDIW SLGCLLYELC ALMPPFTAFS QKELAGKIRE GKFRRIPYRY SDELNEIITR MLNLKDYHRP SVEEILENPL IADLVADEQR RNLERRGRQL GEPEKSQDSS PVLSELKLKE IQLQERERAL KAREERLEQK EQELCVRERL AEDKLARAEN LLKNYSLLKE RKFLSLASNP ELLNLPSSVI KKKVHFSGES KENIMRSENS ESQLTSKSKC KDLKKRLHAA QLRAQALSDI EKNYQLKSRQ ILGMR **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 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.

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.

Product Details

Purity:	>80 % as determined by SDS PAGE, Size Exclusion Chromatography and Western Blot.
Endotoxin Level:	Low Endotoxin less than 1 EU/mg (< 0.1 ng/mg)

Target Details

Target:	NEK2
Alternative Name:	NEK2 (NEK2 Products)
Background:	Serine/threonine-protein kinase Nek2 (EC 2.7.11.1) (HSPK 21) (Never in mitosis A-related kinase 2) (NimA-related protein kinase 2) (NimA-like protein kinase 1),FUNCTION: Protein kinase which is involved in the control of centrosome separation and bipolar spindle formation in mitotic cells and chromatin condensation in meiotic cells. Regulates centrosome separation (essential for the formation of bipolar spindles and high-fidelity chromosome separation) by phosphorylating centrosomal proteins such as CROCC, CEP250 and NINL, resulting in their displacement from the centrosomes. Regulates kinetochore microtubule attachment stability in mitosis via phosphorylation of NDC80. Involved in regulation of mitotic checkpoint protein complex via phosphorylation of CDC20 and MAD2L1. Plays an active role in chromatin condensation during the first meiotic division through phosphorylation of HMGA2. Phosphorylates: PPP1CC, SGO1, NECAB3 and NPM1. Essential for localization of MAD2L1 to kinetochore and MAPK1 and NPM1 to the centrosome. Phosphorylates CEP68 and CNTLN directly or indirectly (PubMed:24554434). NEK2-mediated phosphorylation of CEP68 promotes CEP68 dissociation from the centrosome and its degradation at the onset of mitosis (PubMed:25704143). Involved in the regulation of centrosome disjunction (PubMed:26220856). Phosphorylates CCDC102B either directly or indirectly which causes CCDC102B to dissociate from the centrosome and allows for centrosome separation (PubMed:30404835). {ECO:0000269|PubMed:11742531, ECO:0000269|PubMed:12857871, ECO:0000269|PubMed:14978040, ECO:0000269|PubMed:15358203, ECO:0000269|PubMed:15388344, ECO:0000269|PubMed:17283141, ECO:0000269|PubMed:17621308, ECO:0000269|PubMed:17626005, ECO:0000269|PubMed:18086858, ECO:0000269|PubMed:18297113, ECO:0000269|PubMed:20034488, ECO:0000269|PubMed:21076410, ECO:0000269|PubMed:24554434, ECO:0000269|PubMed:25704143, ECO:0000269|PubMed:26220856, ECO:0000269|PubMed:30404835}., FUNCTION: [Isoform 1]: Phosphorylates and activates NEK11 in G1/S-arrested cells. {ECO:0000269|PubMed:15161910}., FUNCTION: [Isoform 2]: Not present in the nucleolus and, in contrast to isoform 1, does not phosphorylate and activate NEK11 in G1/S-arrested cells. {ECO:0000269|PubMed:15161910}.

Target Details

Molecular Weight:	51.8 kDa
UniProt:	P51955
Pathways:	M Phase

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. 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)