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Datasheet for ABIN3094342  
**PAK2 Protein (AA 2-524) (His tag)**

### Overview

Quantity:	1 mg
Target:	PAK2
Protein Characteristics:	AA 2-524
Origin:	Human
Source:	Insect Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This PAK2 protein is labelled with His tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS), ELISA, Crystallization (Crys)

### Product Details

Sequence: SDNGELEDKP PAPPVRMSST IFSTGGKDPL SANHSLKPLP SVPEEKKPRH KIISIFSGTE  
KGSKKKEKER PEISPPSDFE HTIHVGFDAV TGEFTGMPEQ WARLLQTSNI TKLEQKKNPQ  
AVLDVLKFYD SNTVKQKYL SFTPPEKDGFP SGTPALNAKG TEAPAVVTEE EDDDEETAPP  
VIAPRPDHTK SIYTRSVIDP VPAPVGDSHV DGAAKSLDKQ KKKTKMTDEE IMEKLRTIVS  
IGDPKKKYTR YEKIGQGASG TVFTATDVAL GQEVAIKQIN LQKQPKKELI INEILVMKEL  
KNPNIVNFLD SYLVGDEL FV VMEYLAGGSL TDVVTETCMD EAQIAAVCRE CLQALEFLHA  
NQVIHRDIKS DNVLLGMEGS VKLTDFGFCA QITPEQSKRS TMVGTPYWMA PEVVTRKAYG  
PKVDIWSLGI MAIEMVEGEP PYLNENPLRA LYLIATNGTP ELQNPEKLSP IFRDFLNRCL  
EMDVEKRGSA KELLQHPFLK LAKPLSSLTP LIMAAKEAMK SNR

**Sequence without tag. Tag location is at the discretion of the manufacturer. If you have a special request, please contact us.**

## Product Details

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- Characteristics:
- Made in Germany - from design to production - by highly experienced protein experts.
  - Human PAK2 Protein (raised in Insect Cells) purified by multi-step, protein-specific process to ensure crystallization grade.
  - 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.

In the unlikely event that the protein cannot be expressed or purified we do not charge anything (other companies might charge you for any performed steps in the expression process for custom-made proteins, e.g. fees might apply for the expression plasmid, the first expression experiments or purification optimization).

When you order this made-to-order protein you will only pay upon receipt of the correctly folded protein. With no financial risk on your end you can rest assured that our experienced protein experts will do everything to make sure that you receive the protein you ordered.

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.

The concentration of the protein is calculated using its specific absorption coefficient. 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 baculovirus infected SF9 insect cells:
1. In a first purification step, the protein is purified from the cleared cell lysate using three different His-tag capture materials: high yield, EDTA resistant, or DTT resistant. 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: >95 % as determined by SDS PAGE, Size Exclusion Chromatography and Western Blot.

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Sterility: 0.22 µm filtered

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Endotoxin Level: Protein is endotoxin free.

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Grade: Crystallography grade

## Target Details

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Target: PAK2

Alternative Name: PAK2 ([PAK2 Products](#))

Background: Serine/threonine protein kinase that plays a role in a variety of different signaling pathways including cytoskeleton regulation, cell motility, cell cycle progression, apoptosis or proliferation. Acts as downstream effector of the small GTPases CDC42 and RAC1. Activation by the binding of active CDC42 and RAC1 results in a conformational change and a subsequent autophosphorylation on several serine and/or threonine residues. Full-length PAK2 stimulates cell survival and cell growth. Phosphorylates MAPK4 and MAPK6 and activates the downstream target MAPKAPK5, a regulator of F-actin polymerization and cell migration. Phosphorylates JUN and plays an important role in EGF-induced cell proliferation. Phosphorylates many other substrates including histone H4 to promote assembly of H3.3 and H4 into nucleosomes, BAD, ribosomal protein S6, or MBP. Additionally, associates with ARHGEF7 and GIT1 to perform kinase-independent functions such as spindle orientation control during mitosis. On the other hand, apoptotic stimuli such as DNA damage lead to caspase-mediated cleavage of PAK2, generating PAK-2p34, an active p34 fragment that translocates to the nucleus and promotes cellular apoptosis involving the JNK signaling pathway. Caspase-activated PAK2 phosphorylates MKNK1 and reduces cellular translation. {ECO:0000269|PubMed:12853446, ECO:0000269|PubMed:15234964, ECO:0000269|PubMed:16617111, ECO:0000269|PubMed:19923322, ECO:0000269|PubMed:21177766, ECO:0000269|PubMed:21317288, ECO:0000269|PubMed:21724829, ECO:0000269|PubMed:9171063}.

Molecular Weight: 58.9 kDa Including tag.

UniProt: [Q13177](#)

Pathways: [MAPK Signaling](#), [RTK Signaling](#), [TCR Signaling](#), [Fc-epsilon Receptor Signaling Pathway](#), [Regulation of Lipid Metabolism by PPARalpha](#)

## 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: In cases in which it is highly likely that the recombinant protein with the default tag will be insoluble our protein lab may suggest a higher molecular weight tag (e.g. GST-tag) instead to increase solubility. We will discuss all possible options with you in detail to assure that you

## Application Details

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receive your protein of interest.

Restrictions: For Research Use only

## Handling

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Format: Liquid

Buffer: 100 mM NaCL, 20 mM Hepes, 10% glycerol. pH value is at the discretion of the manufacturer.

Handling Advice: Avoid repeated freeze-thaw cycles.

Storage: -80 °C

Storage Comment: Store at -80°C.

Expiry Date: Unlimited (if stored properly)