Datasheet for ABIN3094318

PAK1 Protein (AA 2-545) (His tag)

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Overview

Quantity:	1 mg
Target:	PAK1
Protein Characteristics:	AA 2-545
Origin:	Human
Source:	Insect Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This PAK1 protein is labelled with His tag.
Application:	SDS-PAGE (SDS), Western Blotting (WB), ELISA, Crystallization (Crys)

Product Details

Sequence:	SNNGLDIQDK PPAPPMRNTS TMIGAGSKDA GTLNHGSKPL PPNPEEKKKK DRFYRSILPG DKTNKKKEKE RPEISLPSDF EHTIHVGFDA VTGEFTGMPE QWARLLQTSN ITKSEQKKNP QAVLDVLEFY NSKKTSNSQK YMSFTDKSAE DYNSSNALNV KAVSETPAVP PVSEDEDDDD DDATPPPVIA PRPEHTKSVY TRSVIEPLPV TPTRDVATSP ISPTENNTTP PDALTRNTEK QKKKPKMSDE EILEKLRSIV SVGDPKKKYT RFEKIGQGAS GTVYTAMDVA TGQEVAIKQM NLQQQPKKEL IINEILVMRE NKNPNIVNYL DSYLVGDELW VVMEYLAGGS LTDVVTETCM DEGQIAAVCR ECLQALEFLH SNQVIHRDIK SDNILLGMDG SVKLTDFGFC AQITPEQSKR STMVGTPYWM APEVVTRKAY GPKVDIWSLG IMAIEMIEGE PPYLNENPLR ALYLIATNGT PELQNPEKLS AIFRDFLNRC LEMDVEKRGS AKELLQHQFL KIAKPLSSLT PLIAAAKEAT KNNH **Sequence without tag. Tag location is at the discretion of the manufacturer. If you have a special request, please contact us.**

Product Details

Characteristics:	• Made in Germany - from design to production - by highly experienced protein experts. • Human PAK1 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 receival 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.
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.
Purity:	>95 % as determined by SDS PAGE, Size Exclusion Chromatography and Western Blot.
Sterility:	0.22 µm filtered
Endotoxin Level:	Protein is endotoxin free.
Grade:	Crystallography grade

Target Details

Target:	PAK1
Alternative Name:	PAK1 (PAK1 Products)
Background:	Protein kinase involved in intracellular signaling pathways downstream of integrins and receptor-type kinases that plays an important role in cytoskeleton dynamics, in cell adhesion, migration, proliferation, apoptosis, mitosis, and in vesicle-mediated transport processes. Can directly phosphorylate BAD and protects cells against apoptosis. Activated by interaction with CDC42 and RAC1. Functions as GTPase effector that links the Rho-related GTPases CDC42 and RAC1 to the JNK MAP kinase pathway. Phosphorylates and activates MAP2K1, and thereby mediates activation of downstream MAP kinases. Involved in the reorganization of the actin cytoskeleton, actin stress fibers and of focal adhesion complexes. Phosphorylates the tubulin chaperone TBCB and thereby plays a role in the regulation of microtubule biogenesis and organization of the tubulin cytoskeleton. Plays a role in the regulation of insulin secretion in response to elevated glucose levels. Part of a ternary complex that contains PAK1, DVL1 and MUSK that is important for MUSK-dependent regulation of AChR clustering during the formation of the neuromuscular junction (NMJ). Activity is inhibited in cells undergoing apoptosis, potentially due to binding of CDC2L1 and CDC2L2. Phosphorylates MYL9/MLC2. Phosphorylates RAF1 at 'Ser-338' and 'Ser-339' resulting in: activation of RAF1, stimulation of RAF1 translocation to mitochondria, phosphorylation of BAD by RAF1, and RAF1 binding to BCL2. Phosphorylates SNAI1 at 'Ser-246' promoting its transcriptional repressor activity by increasing its accumulation in the nucleus. In podocytes, promotes NR3C2 nuclear localization. Required for atypical chemokine receptor ACKR2-induced phosphorylation of LIMK1 and cofilin (CFL1) and for the up-regulation of ACKR2 from endosomal compartment to cell membrane, increasing its efficiency in chemokine uptake and degradation. In synapses, seems to mediate the regulation of F-actin cluster formation performed by SHANK3, maybe through CFL1 phosphorylation and inactivation. Plays a role in RUFY3-mediated facilitating gastric cancer cells migration and invasion (PubMed:25766321). {ECO:0000269|PubMed:10551809, ECO:0000269|PubMed:11733498, ECO:0000269|PubMed:12624090, ECO:0000269|PubMed:12876277, ECO:0000269|PubMed:14585966, ECO:0000269|PubMed:15611088, ECO:0000269|PubMed:15831477, ECO:0000269|PubMed:15833848, ECO:0000269|PubMed:16278681, ECO:0000269|PubMed:17726028, ECO:0000269|PubMed:17989089, ECO:0000269|PubMed:22669945, ECO:0000269|PubMed:23633677, ECO:0000269|PubMed:25766321, ECO:0000269|PubMed:8805275, ECO:0000269|PubMed:9032240, ECO:0000269|PubMed:9395435, ECO:0000269|PubMed:9528787}.

Target Details

Molecular Weight:	61.5 kDa Including tag.
UniProt:	Q13153
Pathways:	MAPK Signaling, RTK Signaling, TCR Signaling, Fc-epsilon Receptor Signaling Pathway, Intracellular Steroid Hormone Receptor Signaling Pathway, Regulation of Intracellular Steroid Hormone Receptor Signaling, Skeletal Muscle Fiber Development, CXCR4-mediated Signaling Events, Signaling Events mediated by VEGFR1 and VEGFR2, Signaling of Hepatocyte Growth Factor Receptor, Embryonic Body Morphogenesis

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 gurantee 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 receive your protein of interest.
Restrictions:	For Research Use only

Handling

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)