

PAK1 Protein, Human (His-SUMO)

Cat. No.:	HY-P71530
Synonyms:	Serine/threonine-protein kinase PAK 1; Alpha-PAK; p21-activated kinase 1 ; p65-PAK; PAK1
Species:	Human
Source:	E. coli
Accession:	Q13153-1 (M1-H545)
Gene ID:	5058
Molecular Weight:	Approximately 76.6 kDa

PROPERTIES

AA Sequence

MSNNGLDIQD	KPPAPPMRNT	STMIGAGSKD	AGTLNHGSKP
LPPNPEEKKK	KDRFYRSILP	GDKTNKKKEK	ERPEISLPSD
FEHTIHVGF	AVTGEFTGMP	EQWARLLQTS	NITKSEQKKN
PQAVLDVLEF	YNSKKT SNSQ	KYMSFTDKSA	EDYNSSNALN
VKAVSETPAV	PPVSEDEDDD	DDDATPPPVI	APRPEHTKSV
YTRSVIEPLP	VTPTRDVATS	PISPTENNTT	PPDALTRNTE
KQKKKPKMSD	EEILEKLRSI	VSVGDPKKKY	TRFEKIGQGA
SGTVYTAMDV	ATGQEVAIKQ	MNLQQQPKKE	LIINEILVMR
ENKNPNIVNY	LDSYLVGDEL	WVMEYLAGG	SLTDVVVTEC
MDEGQIAAVC	RECLQALEFL	HSNQVIHRDI	KSDNILLGMD
GSVKLTDGFG	CAQITPEQSK	RSTMVGTPLYW	MAPEVVTRKA
YGPKVDIWSL	GIMAIEMIEG	EPPYLNENPL	RALYLIATNG
TPELQNPEKL	SAIFRDFLNR	CLEMDVEKRG	SAKELLQHQP
LKIAKPLSSL	TPLIAAAKEA	TKNNH	

Biological Activity The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.

Appearance Lyophilized powder.

Formulation Lyophilized after extensive dialysis against solution in 10 mM Tris-HCl, 1 mM EDTA, 6% Trehalose, pH 8.0.

Endotoxin Level <1 EU/μg, determined by LAL method.

Reconstitution It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH₂O.

Storage & Stability Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.

Shipping Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

PAK1, a dynamic protein kinase, intricately participates in diverse intracellular signaling pathways downstream of integrins and receptor-type kinases. Its multifaceted roles encompass crucial involvement in cytoskeleton dynamics, cell adhesion, migration, proliferation, apoptosis, mitosis, and vesicle-mediated transport processes. Demonstrating versatility, PAK1 directly phosphorylates BAD, providing cellular protection against apoptosis. Activation is achieved through interaction with CDC42 and RAC1, establishing its position as a GTPase effector that bridges Rho-related GTPases to the JNK MAP kinase pathway. PAK1's reach extends to the phosphorylation and activation of MAP2K1, orchestrating downstream MAP kinase activation. In addition to steering the reorganization of the actin cytoskeleton, actin stress fibers, and focal adhesion complexes, PAK1 also influences tubulin chaperone TBCB, impacting microtubule biogenesis and organization. Noteworthy roles include regulation of insulin secretion in response to elevated glucose levels, participation in the neuromuscular junction formation, and inhibition of activity during apoptosis. PAK1's vast repertoire extends to phosphorylating RAF1, SNAI1, MYL9/MLC2, and contributing to various cellular functions, such as chemokine uptake, synaptic stability, dendritic spine formation, and microtubule nucleation. Its involvement in mediating gastric cancer cell migration, response to DNA damage, and facilitation of stress granules underscore the complexity of PAK1's cellular impact.

Caution: Product has not been fully validated for medical applications. For research use only.

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