

PAK4 Protein, Human (His-SUMO)

Cat. No.:	HY-P700575
Synonyms:	p21-activated kinase 4 ; PAK-4
Species:	Human
Source:	E. coli
Accession:	O96013 (M1-R426)
Gene ID:	10298
Molecular Weight:	63.9 kDa

PROPERTIES

AA Sequence

M F G K R K K R V E	I S A P S N F E H R	V H T G F D Q H E Q	K F T G L P R Q W Q
S L I E E S A R R P	K P L V D P A C I T	S I Q P G A P K T I	V R G S K G A K D G
A L T L L L D E F E	N M S V T R S N S L	R R D S P P P P A R	A R Q E N G M P E K
P P G P R S P Q R E	P Q R V S H E Q F R	A A L Q L V V D P G	D P R S Y L D N F I
K I G E G S T G I V	C I A T V R S S G K	L V A V K K M D L R	K Q Q R R E L L F N
E V V I M R D Y Q H	E N V V E M Y N S Y	L V G D E L W V V M	E F L E G G A L T D
I V T H T R M N E E	Q I A A V C L A V L	Q A L S V L H A Q G	V I H R D I K S D S
I L L T H D G R V K	L S D F G F C A Q V	S K E V P R R K S L	V G T P Y W M A P E
L I S R L P Y G P E	V D I W S L G I M V	I E M V D G E P P Y	F N E P P L K A M K
M I R D N L P P R L	K N L H K V S P S L	K G F L D R L L V R	D P A Q R A T A A E
L L K H P F L A K A	G P P A S I V P L M	R Q N R T R	

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

Appearance Lyophilized powder.

Formulation Lyophilized from a 0.2 μ m filtered solution of Tris/PBS-based buffer, 6% Trehalose, pH 8.0.

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

Reconstitution It is not recommended to reconstitute to a concentration less than 100 μ g/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

PAK4, a serine/threonine protein kinase, exerts its influence across diverse signaling pathways, impacting cytoskeleton regulation, cell migration, growth, proliferation, and cell survival. Activation triggered by various effectors, such as growth factor receptors or active CDC42 and RAC1, induces a conformational change and subsequent autophosphorylation on multiple serine and/or threonine residues. PAK4's phosphorylation targets include the protein phosphatase SSH1, leading to increased inhibitory phosphorylation of the actin binding/depolymerizing factor cofilin. This results in decreased cofilin activity, promoting the stabilization of actin filaments. Additionally, PAK4 phosphorylates LIMK1, another kinase that inhibits cofilin activity. By phosphorylating integrin beta5/ITGB5, PAK4 regulates cell motility, while its phosphorylation of ARHGEF2 activates the downstream target RHOA, contributing to the regulation of focal adhesion assembly and actin stress fibers. PAK4 plays a crucial role in cell survival by phosphorylating the BCL2 antagonist of cell death, BAD. Alternatively, it inhibits apoptosis by preventing the binding of caspase-8 to death domain receptors, acting in a kinase-independent manner. Furthermore, PAK4 influences cell-cycle progression by controlling the levels of the cell-cycle regulatory protein CDKN1A and by phosphorylating RAN.

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

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