

**PAK1 Antibody**  
**Purified Rabbit Polyclonal Antibody**  
**Catalog # ABV11522****Specification**

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**PAK1 Antibody - Product Information**

Application	WB
Primary Accession	<a href="#">Q13153</a>
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	60647

**PAK1 Antibody - Additional Information****Gene ID** 5058**Other Names**

PAK1, PAK-1, p21/Cdc42/Rac1-activated kinase 1. PAK alpha, Alpha-PAK , p65-PAK, MGC130001, MGC130000

**Target/Specificity**

PAK1

**Formulation**

100 µg (0.2 mg/ml) Protein A affinity purified rabbit anti-PAK1 polyclonal antibody in phosphate buffered saline (PBS), pH 7.2, containing 50% glycerol, 1% BSA, 0.02% thimerosal.

**Handling**

The antibody solution should be gently mixed before use.

**Background Descriptions****Precautions**

PAK1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**PAK1 Antibody - Protein Information****Name** PAK1 {ECO:0000303|PubMed:8805275, ECO:0000312|HGNC:HGNC:8590}**Function**

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 (PubMed:&lt;a href="http://www.uniprot.org/citations/10551809" target="\_blank"&gt;10551809&lt;/a&gt;, PubMed:&lt;a href="http://www.uniprot.org/citations/11896197" target="\_blank"&gt;11896197&lt;/a&gt;),

PubMed:<a href="http://www.uniprot.org/citations/12876277" target="\_blank">12876277</a>,  
 PubMed:<a href="http://www.uniprot.org/citations/14585966" target="\_blank">14585966</a>,  
 PubMed:<a href="http://www.uniprot.org/citations/15611088" target="\_blank">15611088</a>,  
 PubMed:<a href="http://www.uniprot.org/citations/17726028" target="\_blank">17726028</a>,  
 PubMed:<a href="http://www.uniprot.org/citations/17989089" target="\_blank">17989089</a>,  
 PubMed:<a href="http://www.uniprot.org/citations/30290153" target="\_blank">30290153</a>,  
 PubMed:<a href="http://www.uniprot.org/citations/17420447" target="\_blank">17420447</a>).  
 Can directly phosphorylate BAD and protects cells against apoptosis (By similarity). Activated by  
 interaction with CDC42 and RAC1 (PubMed:<a href="http://www.uniprot.org/citations/8805275" target="\_blank">8805275</a>,  
 PubMed:<a href="http://www.uniprot.org/citations/9528787" target="\_blank">9528787</a>). Functions as a GTPase effector that links the Rho-related  
 GTPases CDC42 and RAC1 to the JNK MAP kinase pathway (PubMed:<a href="http://www.uniprot.org/citations/8805275" target="\_blank">8805275</a>,  
 PubMed:<a href="http://www.uniprot.org/citations/9528787" target="\_blank">9528787</a>). Phosphorylates  
 and activates MAP2K1, and thereby mediates activation of downstream MAP kinases (By  
 similarity). Involved in the reorganization of the actin cytoskeleton, actin stress fibers and of focal  
 adhesion complexes (PubMed:<a href="http://www.uniprot.org/citations/9032240" target="\_blank">9032240</a>,  
 PubMed:<a href="http://www.uniprot.org/citations/9395435" target="\_blank">9395435</a>). Phosphorylates the tubulin chaperone TBCB and thereby plays a  
 role in the regulation of microtubule biogenesis and organization of the tubulin cytoskeleton  
 (PubMed:<a href="http://www.uniprot.org/citations/15831477" target="\_blank">15831477</a>). Plays a role in the regulation of insulin secretion in response to elevated glucose levels  
 (PubMed:<a href="http://www.uniprot.org/citations/22669945" target="\_blank">22669945</a>). 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) (By similarity). Activity is inhibited in cells undergoing apoptosis, potentially due to binding  
 of CDC2L1 and CDC2L2 (PubMed:<a href="http://www.uniprot.org/citations/12624090" target="\_blank">12624090</a>). Phosphorylates MYL9/MLC2 (By similarity). 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 (PubMed:<a href="http://www.uniprot.org/citations/11733498" target="\_blank">11733498</a>).  
 Phosphorylates SNAI1 at 'Ser- 246' promoting its transcriptional repressor activity by increasing its  
 accumulation in the nucleus (PubMed:<a href="http://www.uniprot.org/citations/15833848" target="\_blank">15833848</a>). In podocytes, promotes NR3C2 nuclear localization (By  
 similarity). 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 (PubMed:<a href="http://www.uniprot.org/citations/23633677" target="\_blank">23633677</a>). In synapses,  
 seems to mediate the regulation of F-actin cluster formation performed by SHANK3, maybe  
 through CFL1 phosphorylation and inactivation (By similarity). Plays a role in RUFY3-mediated  
 facilitating gastric cancer cells migration and invasion (PubMed:<a href="http://www.uniprot.org/citations/25766321" target="\_blank">25766321</a>). In response  
 to DNA damage, phosphorylates MORC2 which activates its ATPase activity and facilitates  
 chromatin remodeling (PubMed:<a href="http://www.uniprot.org/citations/23260667" target="\_blank">23260667</a>). In neurons, plays a crucial role in regulating GABA(A) receptor  
 synaptic stability and hence GABAergic inhibitory synaptic transmission through its role in F-actin  
 stabilization (By similarity). In hippocampal neurons, necessary for the formation of dendritic  
 spines and excitatory synapses; this function is dependent on kinase activity and may be exerted  
 by the regulation of actomyosin contractility through the phosphorylation of myosin II regulatory  
 light chain (MLC) (By similarity). Along with GIT1, positively regulates microtubule nucleation  
 during interphase (PubMed:<a href="http://www.uniprot.org/citations/27012601" target="\_blank">27012601</a>). Phosphorylates FXR1, promoting its localization to stress  
 granules and activity (PubMed:<a href="http://www.uniprot.org/citations/20417602" target="\_blank">20417602</a>). Phosphorylates ILK on 'Thr-173' and 'Ser-246', promoting  
 nuclear export of ILK (PubMed:<a href="http://www.uniprot.org/citations/17420447" target="\_blank">17420447</a>).

**Cellular Location**

Cytoplasm. Cell junction, focal adhesion. Cell projection, lamellipodium. Cell membrane. Cell projection, ruffle membrane. Cell projection, invadopodium. Nucleus, nucleoplasm. Chromosome. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome Note=Colocalizes with RUFY3, F-actin and other core migration components in invadopodia at the cell periphery (PubMed:25766321) Recruited to the cell membrane by interaction with CDC42 and RAC1 Recruited to focal adhesions upon activation. Colocalized with CIB1 within membrane ruffles during cell spreading upon readhesion to fibronectin. Upon DNA damage, translocates to the nucleoplasm when phosphorylated at Thr-212 where is co-recruited with MORC2 on damaged chromatin (PubMed:23260667). Localization to the centrosome does not depend upon the presence of gamma-tubulin (PubMed:27012601) Localization of the active, but not inactive, protein to the adhesions and edge of lamellipodia is mediated by interaction with GIT1 (PubMed:11896197). {ECO:0000250|UniProtKB:P35465, ECO:0000269|PubMed:11896197, ECO:0000269|PubMed:23260667, ECO:0000269|PubMed:25766321, ECO:0000269|PubMed:27012601}

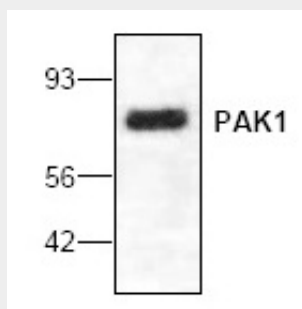
**Tissue Location**

Overexpressed in gastric cancer cells and tissues (at protein level) (PubMed:25766321).

**PAK1 Antibody - Protocols**

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

**PAK1 Antibody - Images**

Western blot analysis of PAK1 with transfected HEK293 cells.

**PAK1 Antibody - Background**

Human p21-GTPase-activated protein kinase 1 (PAK1) is a functional homolog of STE20 of *Saccharomyces cerevisiae*. PAK1 is a downstream effector of the Rho-family small GTPases Rac and Cdc42. A serine/threonine kinase, PAK1 induces the formation of filopodia and lamellipodia in Swiss 3T3 cells. PAK1 inhibits myosin light chain kinase, and appears to play a role in the regulation of apoptosis by phosphorylating the death agonist Bad. Membrane targeting of PAK1 induces neurite outgrowth. PAK1 may also regulate NFkB activation.