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PAK2 Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7927a

Product Information

Application	WB, IHC-P, E
Primary Accession	Q13177
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB1221-1222
Calculated MW	58043
Antigen Region	192-222

Additional Information

Gene ID	5062
Other Names	Serine/threonine-protein kinase PAK 2, Gamma-PAK, PAK65, S6/H4 kinase, p21-activated kinase 2, PAK-2, p58, PAK-2p27, p27, PAK-2p34, p34, C-t-PAK2, PAK2
Target/Specificity	This PAK2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 192-222 amino acids from the N-terminal region of human PAK2.
Dilution	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	PAK2 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PAK2
Function	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 (PubMed:12853446,

	PubMed:16617111, PubMed:19273597, PubMed:19923322, PubMed:33693784, PubMed:7744004, PubMed:9171063). Acts as a downstream effector of the small GTPases CDC42 and RAC1 (PubMed:7744004). 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 (PubMed:7744004). Full- length PAK2 stimulates cell survival and cell growth (PubMed:7744004). Phosphorylates MAPK4 and MAPK6 and activates the downstream target MAPKAPK5, a regulator of F-actin polymerization and cell migration (PubMed:21317288). Phosphorylates JUN and plays an important role in EGF-induced cell proliferation (PubMed:21177766). Phosphorylates many other substrates including histone H4 to promote assembly of H3.3 and H4 into nucleosomes, BAD, ribosomal protein S6, or MBP (PubMed:21724829). Phosphorylates CASP7, thereby preventing its activity (PubMed:21555521, PubMed:27889207). Additionally, associates with ARHGEF7 and GIT1 to perform kinase-independent functions such as spindle orientation control during mitosis (PubMed:19273597, PubMed:19923322). 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 (PubMed:12853446, PubMed:16617111, PubMed:9171063). Caspase-activated PAK2 phosphorylates MKNK1 and reduces cellular translation (PubMed:15234964).
Cellular Location	[Serine/threonine-protein kinase PAK 2]: Cytoplasm Nucleus Note=MYO18A mediates the cellular distribution of the PAK2-ARHGEF7-GIT1 complex to the inner surface of the cell membrane
Tissue Location	Ubiquitously expressed. Higher levels seen in skeletal muscle, ovary, thymus and spleen

Background

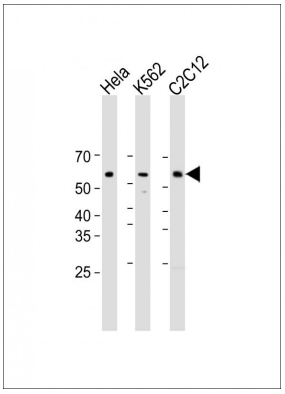
PAK2, a member of the STE20 subfamily of Ser/Thr protein kinases, acts on a variety of targets. It phosphorylates ribosomal protein S6, histone H4 and myelin basic protein. PAK2 interacts tightly with GTP-bound but not GDP-bound CDC42/p21 and RAC1. Expression is ubiquitous, with higher levels seen in skeletal muscle, ovary, thymus and spleen. PAK2 is autophosphorylated when activated by CDC42/p21. The protein structure contains 1 CRIB domain.

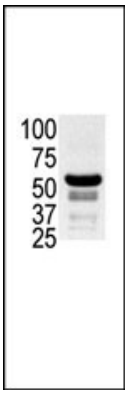
References

Benner, G.E., et al., J. Biol. Chem. 270(36):21121-21128 (1995).
Martin, G.A., et al., EMBO J. 14(9):1970-1978 (1995).
Martin, G.A., et al., EMBO J. 14 (17), 4385 (1995).

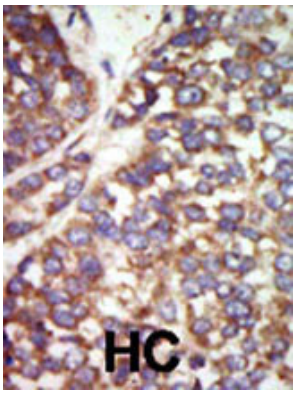
Images

All lanes: Anti-hPAK2-G207 at 1:1000 dilution Lane 1: Hela whole cell lysate Lane 2: K562 whole cell lysate Lane 3: C2C12 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary: Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size: 58 KDa Blocking/Dilution buffer: 5% NFDM/TBST.





The anti-PAK2 Pab (Cat. #AP7927a) is used in Western blot to detect PAK2 in ovary cell lysate. Data is kindly provided by Elena Black from Boston University (Boston, MA).



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.