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# PAK2 Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1296a

## Product Information

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| **Application** | WB, IHC, ICC, E |
| **Primary Accession** | Q13177 |
| **Reactivity** | Human, Monkey |
| **Host** | Mouse |
| **Clonality** | Monoclonal |
| **Clone Names** | 3B5 |
| **Isotype** | IgG1 |
| **Calculated MW** | 58043 |
| **Description** | PAK2, also known as P21 (CDKN1A)-activated kinase 2. The p21 activated kinases (PAK) are critical effectors that link Rho GTPases to cytoskeleton reorganization and nuclear signaling. The PAK proteins are a family of serine/threonine kinases that serve as targets for the small GTP binding proteins, CDC42 and RAC1, and have been implicated in a wide range of biological activities. PAK2 is activated by proteolytic cleavage during caspase-mediated apoptosis, and may play a role in regulating the apoptotic events in the dying cell. PAK2 has been shown to interact with SH3KBP1, CDC42 and Abl gene. |
| **Immunogen** | Purified recombinant fragment of PAK2 expressed in E. Coli. |
| **Formulation** | Ascitic fluid containing 0.03% sodium azide. |

## Additional Information

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| **Gene ID** | 5062 |
| **Other Names** | Serine/threonine-protein kinase PAK 2, 2.7.11.1, Gamma-PAK, PAK65, S6/H4 kinase, p21-activated kinase 2, PAK-2, p58, PAK-2p27, p27, PAK-2p34, p34, C-t-PAK2, PAK2 |
| **Dilution** | WB~~1/500 - 1/2000 IHC~~1/200 - 1/1000 ICC~~N/A E~~N/A |
| **Storage** | Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles. |
| **Precautions** | PAK2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures. |

## Protein Information

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| **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 |

## References

1. J Immunol. 2004 Jun 15;172(12):7324-34. 2. J Mol Biol. 2007 Jul 20;370(4):620-32.

## Images

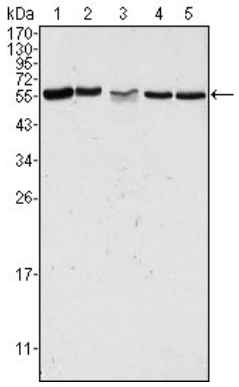
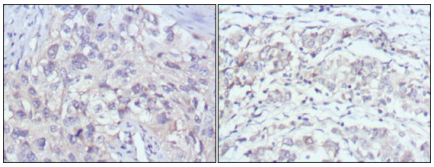



Figure 1: Western blot analysis using PAK2 mouse mAb against Hela (1), Jurkat (2), A549 (3), HEK293 (4) and K562 (5) cell lysate.

Figure 2: Immunohistochemical analysis of paraffin-embedded human lung cancer (left) and gastric



cancer (right) using PAK2 mouse mAb with DAB staining.

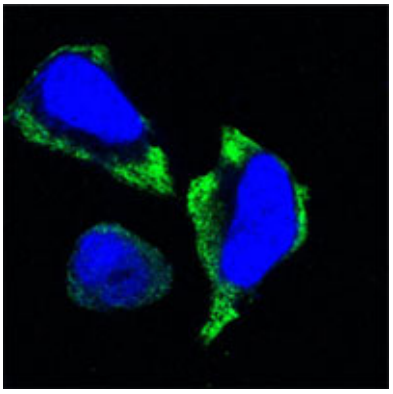


Figure 3: Confocal immunofluorescence analysis of Hela cells using PAK2 mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye.