

Qty: 100 µg/400 µl
Rabbit anti-PAK1
Catalog No. 71-9300
Lot No.

Rabbit anti-PAK1

FORM

This polyclonal antibody is purified from rabbit antiserum by epitope-affinity chromatography. The antibody is supplied as a 400 µl aliquot at a concentration of 0.25 mg/ml in phosphate buffered saline (PBS), pH 7.4, containing 0.1% sodium azide.

POLYCLONAL ANTIBODY DESIGNATION (PAD): IP19

IMMUNOGEN

Synthetic peptide derived from an internal sequence in the human PAK1 protein. This sequence is identical in human, mouse, and rat PAK1.

SPECIFICITY

This antibody is specific for the 68 kDa PAK1 (αPAK) protein and does not react with the closely related PAK2 (γPAK) or PAK3 (βPAK) proteins. Reactivity of this antibody has been confirmed by Western blotting using lysates derived from NIH 3T3 cells, Jurkat cells, and COS-7 cells transfected with a PAK1 expression vector.

REACTIVITY

This antibody reacts with PAK1 from human, mouse and rat. Reactivity with other species has not been tested.

SPECIES	APPLICATIONS*		
	Western Blotting	Imm. Ppt. (native)	ELISA
Human	+	NT	-
Mouse	+	+	-
Rat	+	NT	-
Immunogen	-	-	+

* WB: Western Blotting; Imm.Ppt: Immunoprecipitation; NT: not tested

USAGE

Working concentrations for specific applications should be determined by the investigator. Appropriate concentrations will be affected by several factors, including secondary antibody affinity, antigen concentration, sensitivity of detection method, temperature and length of incubations, etc. The suitability of this antibody for applications other than those listed below has not been determined. The following concentration ranges are recommended starting points for this product.

ELISA: 0.1-1 µg/ml
Western Blotting: 1 µg/ml
Immunoprecipitation: 2-5 µg

STORAGE

Store at 2-8°C for up to one month. Aliquot and store at -20°C for long term storage. Avoid repeated freezing and thawing.

BACKGROUND

The p21-activated kinases (PAKs) are a family of multifunctional serine/threonine kinases implicated in cell functions ranging from stress responses and apoptosis to regulation of cell motility and tumor metastasis. The three mammalian PAKs, termed PAKs 1, 2, 3 or α, γ, β respectively, are members of a larger family of kinases whose catalytic domains are related to the Ste20 kinase of *S. cerevisiae*⁽⁵⁾. The activity of PAKs are regulated by the specific binding of GTP-bound Rac and Cdc42 GTPases⁽¹⁻³⁾ and also by sphingosine and related lipids⁽⁴⁾. PAK1 activation induced by a variety of growth factor- and G-protein-coupled receptors, Fc receptors, and integrins has been reported.

(cont'd)

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PAK1 has been shown to regulate activity of the MAP kinase signaling cascades. In certain cell types, PAK appears to mediate signaling to c-Jun amino terminal (JNK) kinase and p38 MAP kinase⁽⁶⁻⁷⁾. Recent data suggests PAKs are important for the synergy between Ras and Rac to activate the ERK MAP kinases as well⁽⁷⁻⁹⁾, and this activity of PAK may be necessary for cell transformation^(7,9). PAK1 has been localized to areas of cortical actin cytoskeletal rearrangement⁽¹⁰⁾ and PAK1 mutants have been shown to induce the formation of membrane ruffles, filipodia, and focal complexes in fibroblasts, while decreasing actin stress fiber and focal adhesions^(11,12). Neurite extension is induced by PAK1 in PC12 cells, and NGF-induced neurite formation requires PAK function⁽¹³⁾. Many of these biological effects appear to be independent of PAK kinase activity, but involve protein-protein interactions at the PAK N-terminus. PAK1 has been shown to bind to the SH3-containing proteins Nck⁽¹⁴⁾ and PIX⁽¹⁵⁾. PAK1 activation has proven useful as an indicator of Rac and Cdc42 activity in many of these processes.

REFERENCES

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rec-Protein G	Sepharose® 4B	10-1241
Protein A	Sepharose® 4B	10-1041

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