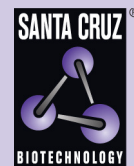


# $\gamma$ PAK (N-19): sc-1872



The Power to Question

## BACKGROUND

Three isoforms of serine/threonine kinases, designated  $\alpha$ PAK p68,  $\beta$ PAK p65 and  $\gamma$ PAK p62, have been shown to exhibit a high degree of sequence homology with the *S. cerevisiae* kinase Ste 20, involved in pheromone signaling. The  $\alpha$ ,  $\beta$  and  $\gamma$ PAK isoforms complex specifically with Rac1 and Cdc42 in their active GTP-bound state, inhibiting their intrinsic GTPase activity leading to their autophosphorylation. There are eight sites of autophosphorylation on  $\gamma$ PAK, including Ser 19, Ser 141 and Thr 402, and phosphorylation of Ser 141 and Thr 402 is correlated with  $\gamma$ PAK activation. Once phosphorylated and their affinity for Rac/Cdc42 reduced, the PAK isoforms disassociate from the complex to seek downstream substrates. One such putative substrate is Mek kinase, an upstream effector of Mek4 which is involved in the JNK signaling pathway. While the PAK isoforms interact in a GTP-dependent manner with Rac1 and Cdc42, they do not interact with Rho.

## CHROMOSOMAL LOCATION

Genetic locus: PAK2 (human) mapping to 3q29; Pak2 (mouse) mapping to 16 B2.

## SOURCE

$\gamma$ PAK (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of  $\gamma$ PAK of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

$\gamma$ PAK (N-19) is available conjugated to agarose (sc-1872 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP.

Blocking peptide available for competition studies, sc-1872 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

$\gamma$ PAK (N-19) is recommended for detection of  $\gamma$ PAK p62 and, to a lesser extent,  $\beta$ PAK of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

$\gamma$ PAK (N-19) is also recommended for detection of  $\gamma$ PAK p62 and, to a lesser extent,  $\beta$ PAK in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of  $\gamma$ PAK: 62 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, JAR cell lysate: sc-2276 or Jurkat whole cell lysate: sc-2204.

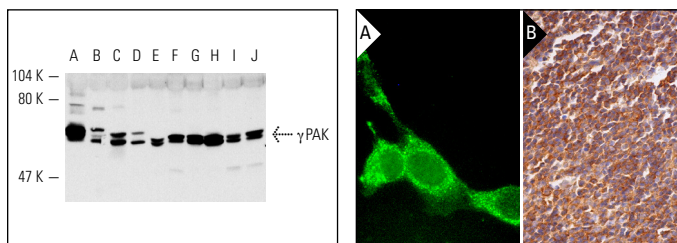
## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## DATA



$\gamma$ PAK (N-19): sc-1872. Western blot analysis of  $\gamma$ PAK expression in rat brain (A), NIH/3T3 (B), 3611-RF (C), MDCK (D), A-431 (E), HeLa (F), Jurkat (G), SK-N-MC (H), T24 (I) and U-937 (J) whole cell lysates.

$\gamma$ PAK (N-19): sc-1872. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing cytoplasmic staining of cells in germinal centers and cells in non-germinal centers (B).

## SELECT PRODUCT CITATIONS

- Naumann, M., et al. 1998. Coordinate activation of activator protein 1 and inflammatory cytokines in response to *Neisseria gonorrhoeae* epithelial cell contact involves stress response kinases. *J. Exp. Med.* 188: 1277-1286.
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- Huang, Z., et al. 2004. Negative control of the Myc protein by the stress-responsive kinase PAK2. *Mol. Cell. Biol.* 24: 1582-1594.
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Try  $\gamma$ PAK (E-9): sc-373740 or  $\gamma$ PAK (G-10): sc-137208, our highly recommended monoclonal alternatives to  $\gamma$ PAK (N-19).