SANTA CRUZ BIOTECHNOLOGY, INC.

γPAK (V-19): sc-7117

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

BACKGROUND

Three isoforms of serine/threonine kinases, designated αPAK p68, βPAK p65 and γPAK p62, have been shown to exhibit a high degree of sequence homology with the *S. cerevisiae* kinase Ste 20, involved in pheromone signaling. The α, β and γPAK 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 γPAK, including Ser 19, Ser 141 and Thr 402, and phosphorylation of Ser 141 and Thr 402 is correlated with γPAK 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

γPAK (V-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of γPAK of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7117 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

γPAK (V-19) is recommended for detection of γPAK p62 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

γPAK (V-19) is also recommended for detection of γPAK p62 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for γPAK siRNA (h): sc-36183, γPAK siRNA (m): sc-36184, γPAK shRNA Plasmid (h): sc-36183-SH, γPAK shRNA Plasmid (m): sc-36184-SH, γPAK shRNA (h) Lentiviral Particles: sc-36183-V and γPAK shRNA (m) Lentiviral Particles: sc-36184-V.

Molecular Weight of γPAK: 62 kDa.

Positive Controls: JAR cell lysate: sc-2276, Jurkat whole cell lysate: sc-2204 or mouse thymus extract: sc-2406.

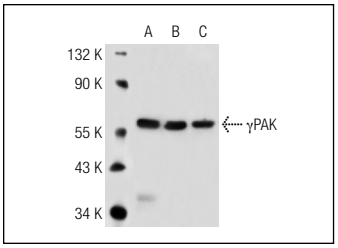
STORAGE

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

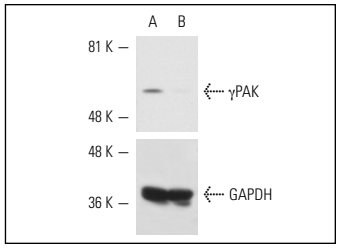
RESEARCH USE

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

DATA



γPAK (V-19): sc-7117. Western blot analysis of γPAK expression in JAR (**A**) and Jurkat (**B**) whole cell lysates and mouse thymus tissue extract (**C**).



γPAK siRNA (h): sc-36183. Western blot analysis of γPAK expression in non-transfected control (**A**) and γPAK siRNA transfected (**B**) HeLa cells. Blot probed with γPAK (V-19): sc-7117. GAPDH (FL-335): sc-25778 used as specificity and loading control.

SELECT PRODUCT CITATIONS

1. Jakobi, R., et al. 2001. p21-activated protein kinase γPAK suppresses programmed cell death of BALB3T3 fibroblasts. J. Biol. Chem. 276: 16624-16634.
2. Wilkes, M.C., et al. 2003. Cell-type-specific activation of PAK2 by transforming growth factor β independent of Smad2 and Smad3. Mol. Cell. Biol. 23: 8879-8889.
3. Li, W., et al. 2004. Mechanism of human dermal fibroblast migration driven by type I collagen and platelet-derived growth factor-BB. Mol. Biol. Cell 15: 294-309.
4. Johnson, K., et al. 2005. p21-activated kinase-1 is necessary for depolarization-mediated neuronal survival. J. Neurosci. Res. 79: 809-815.
5. Ke, Y., et al. 2007. Inhibition of endothelial barrier dysfunction by P21-activated kinase-1. Can. J. Physiol. Pharmacol. 85: 281-288.
6. Wilkes, M.C., et al. 2009. Erbin and the NF2 tumor suppressor Merlin cooperatively regulate cell-type-specific activation of PAK2 by TGF-β. Dev. Cell 16: 433-444.
7. Marlin, J.W., et al. 2009. Elevated p21-activated kinase 2 activity results in anchorage-independent growth and resistance to anticancer drug-induced cell death. Neoplasia 11: 286-297.
8. Hsu, R.M., et al. 2010. Identification of MYO18A as a novel interacting partner of the PAK2/βPIX/GIT1 complex and its potential function in modulating epithelial cell migration. Mol. Biol. Cell 21: 287-301.