

PAK4 (P-21): sc-18622

BACKGROUND

Three recently identified isoforms of serine/threonine kinases, designated α PAK p68, β PAK p65 and γ PAK p62, have been shown to exhibit a high degree of sequence homology with the *S. cerevisiae* kinase STE20, involved in pheromone signaling. The α , β , and γ PAK isoforms complex specifically with Rac1 and Cdc42 in their active GTP bound state, inhibiting their intrinsic GTPase activity leading to their autophosphorylation. 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. PAK4 is highly expressed in prostate, testis, and colon. PAK4 interacts tightly with GTP-bound but not GDP-bound CDC42 and weakly with RAC. PAK4 phosphorylates and autophosphorylates and also activates the JNK pathway. Coexpression of PAK4 and activated CDC42 induces the sustained formation of Actin-enriched filopodia protrusions and causes PAK4 to colocalize with polymerized actin clusters and with β coat protein in the Golgi. The gene which encodes PAK4 maps to human chromosome 19.

REFERENCES

- Didsbury, J., et al. 1989. Rac, a novel ras-related family of proteins that are botulinum toxic substrates. *J. Biol. Chem.* 264: 16378-16382.
- Shinjo, K., et al. 1990. Molecular cloning of the gene for the human placental GTP-binding protein G-p (G25K): identification of this GTP-binding protein as the human homolog of the yeast cell-division-cycle protein CDC42. *Proc. Natl. Acad. Sci. USA* 98: 9853-9857.
- Lange-Carter, C.A., et al. 1993. A divergence in the MAP kinase regulatory network defined by MEK kinase and Raf. *Science* 260: 315-319.
- Yan, M., et al. 1994. Activation of stress-activated protein kinase by MEK1 phosphorylation of its activator SEK1. *Nature* 372: 798-800.

CHROMOSOMAL LOCATION

Genetic locus: PAK4 (human) mapping to 19q13.2; Pak4 (mouse) mapping to 7 A3.

SOURCE

PAK4 (P-21) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PAK4 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-18622 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

PAK4 (P-21) is recommended for detection of PAK4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

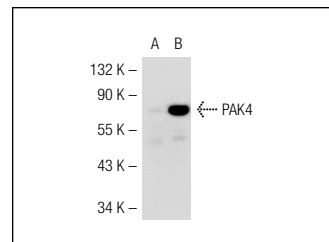
PAK4 (P-21) is also recommended for detection of PAK4 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PAK4 siRNA (h): sc-39060, PAK4 siRNA (m): sc-39061, PAK4 shRNA Plasmid (h): sc-39060-SH, PAK4 shRNA Plasmid (m): sc-39061-SH, PAK4 shRNA (h) Lentiviral Particles: sc-39060-V and PAK4 shRNA (m) Lentiviral Particles: sc-39061-V.

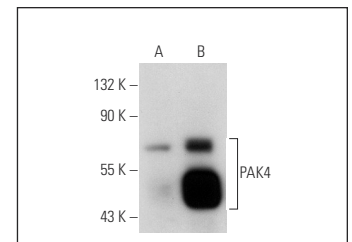
Molecular Weight of PAK4: 68 kDa.

Positive Controls: PAK4 (m): 293T Lysate: sc-127292, PAK4 (h5): 293T Lysate: sc-173381 or rat testis extract: sc-2400.

DATA



PAK4 (P-21): sc-18622. Western blot analysis of PAK4 expression in non-transfected: sc-117752 (A) and mouse PAK4 transfected: sc-127292 (B) 293T whole cell lysates.



PAK4 (P-21): sc-18622. Western blot analysis of PAK4 expression in non-transfected: sc-117752 (A) and human PAK4 transfected: sc-173381 (B) 293T whole cell lysates.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

MONOS
Satisfaction
Guaranteed

Try **PAK4 (B-3): sc-390507** or **PAK4 (B-6): sc-393367**, our highly recommended monoclonal alternatives to PAK4 (P-21).