

PAK4 (H-140): sc-28779

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 beta coat protein in the Golgi. The gene which encodes PAK4 maps to human chromosome 19.

REFERENCES

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- 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 MEKK1 phosphorylation of its activator SEK1. *Nature* 372: 798-800.
- Manser, E., et al. 1994. A brain serine/threonine protein kinase activated by Cdc42 and Rac1. *Nature* 367: 40-46.
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CHROMOSOMAL LOCATION

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

SOURCE

PAK4 (H-140) is a rabbit polyclonal antibody raised against amino acids 101-240 mapping near the N-terminus 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.

APPLICATIONS

PAK4 (H-140) 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).

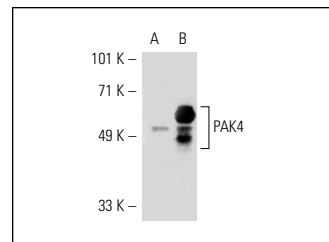
PAK4 (H-140) is also recommended for detection of PAK4 in additional species, including canine, bovine and porcine.

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.

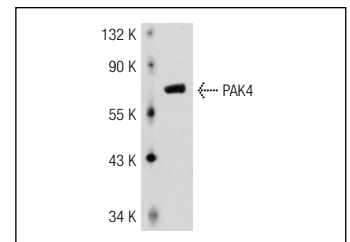
Molecular Weight of PAK4: 68 kDa.

Positive Controls: rat testis extract: sc-2400, NTERA-2 cl.D1 whole cell lysate: sc-364181 or PAK4 (h): 293 Lysate: sc-111101.

DATA



PAK4 (H-140): sc-28779. Western blot analysis of PAK4 expression in non-transfected: sc-110760 (A) and human PAK4 transfected: sc-111101 (B) 293 whole cell lysates.



PAK4 (H-140): sc-28779. Western blot analysis of PAK4 expression in rat testis tissue extract.

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.

PROTOCOLS

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



Try **PAK4 (B-3): sc-390507** or **PAK4 (B-6): sc-393367**, our highly recommended monoclonal alternatives to PAK4 (H-140).