

PAK4 (h): 293 Lysate: sc-111101

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 Rac 1 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 Rac 1 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 phospho-rylates 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 co-localize with polymerized Actin clusters and with β coat protein in the Golgi.

REFERENCES

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5. Manser, E., et al. 1994. A brain serine/threonine protein kinase activated by Cdc42 and Rac 1. *Nature* 367: 40-46.
6. Yan, M., et al. 1994. Activation of stress-activated protein kinase by MEK1 phosphorylation of its activator SEK1. *Nature* 372: 798-800.
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8. Coso, O.A., et al. 1995. The small GTP-binding proteins Rac 1 and Cdc42 regulate the activity of the JNK/SAPK signaling pathway. *Cell* 81: 1137-1146.
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CHROMOSOMAL LOCATION

Genetic locus: PAK4 (human) mapping to 19q13.2.

RESEARCH USE

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

PRODUCT

PAK4 (h): 293 Lysate represents a lysate of human PAK4 transfected 293 cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

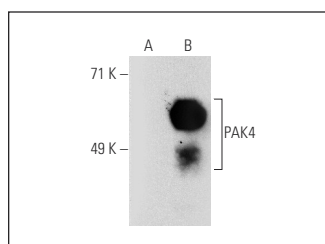
APPLICATIONS

PAK4 (h): 293 Lysate is suitable as a Western Blotting positive control for human reactive PAK4 antibodies. Recommended use: 10-20 μ l per lane.

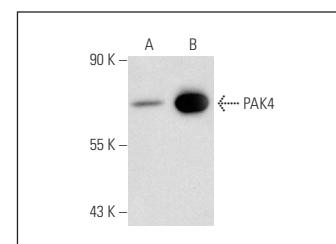
Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

PAK4 (6C1): sc-81532 is recommended as a positive control antibody for Western Blot analysis of enhanced human PAK4 expression in PAK4 transfected 293 cells (starting dilution 1:200, dilution range 1:100-1:1,000).

DATA



PAK4 (6C1): sc-81532. Western blot analysis of PAK4 expression in non-transfected: sc-110760 (A) and human PAK4 transfected: sc-111101 (B) 293 whole cell lysates.



PAK4 (6C1): sc-81532. Western blot analysis of PAK4 expression in non-transfected: sc-110760 (A) and human PAK4 transfected: sc-111101 (B) 293 whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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