SANTA CRUZ BIOTECHNOLOGY, INC.

αPAK (C-19): sc-881

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 Rac 1 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 Rac 1 and Cdc42, they do not interact with Rho.

CHROMOSOMAL LOCATION

Genetic locus: PAK1 (human) mapping to 11q13.5; Pak1 (mouse) mapping to 7 E2.

SOURCE

αPAK (C-19) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of αPAK of rat 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-881 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as agarose (sc-881 AC) conjugate for immunoprecipitation, 500 µg/0.25 ml agarose in 1 ml; and as fluorescein (sc-881 FITC) or rhodamine (sc-881 TRITC) conjugates for immunofluorescence, 200 µg/1 ml.

APPLICATIONS

αPAK (C-19) is recommended for detection of αPAK p68 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); partially cross-reactive with γPAK and βPAK.

αPAK (C-19) is also recommended for detection of αPAK p68 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for αPAK siRNA (h): sc-29700, αPAK siRNA (m): sc-29701, αPAK shRNA Plasmid (h): sc-29700-SH, αPAK shRNA Plasmid (m): sc-29701-SH, αPAK shRNA (h) Lentiviral Particles: sc-29700-V and αPAK shRNA (m) Lentiviral Particles: sc-29701-V.

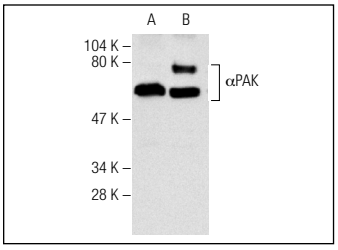
Molecular Weight of αPAK: 65 kDa.

Positive Controls: mouse brain extract: sc-2253 or rat brain extract: sc-2392.

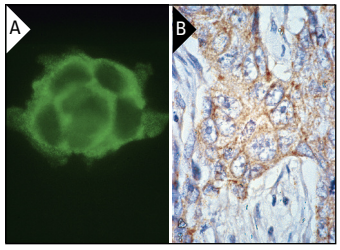
STORAGE

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

DATA



αPAK (C-19): sc-881. Western blot analysis of αPAK expression in mouse brain (**A**) and rat brain (**B**) extracts.



αPAK (C-19): sc-881. Immunofluorescence staining of methanol-fixed A-431 cells (**A**) and immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue (**B**) showing cytoskeletal staining.

SELECT PRODUCT CITATIONS

1. Galisteo, M.L., et al. 1996. The adaptor protein Nck links receptor tyrosine kinases with the serine-threonine kinase Pak1. J. Biol. Chem. 271: 20997-21000.
2. Ding, J., et al. 1996. The renaturable 69- and 63-kDa protein kinases that undergo rapid activation in chemoattractant-stimulated guinea pig neutrophils are p21-activated kinases. J. Biol. Chem. 271: 24869-24873.
3. Teramoto, H., et al. 1996. Signaling from the small GTP-binding proteins Rac1 and Cdc42 to the c-Jun N-terminal kinase/stress-activated protein kinase pathway. A role for mixed lineage kinase 3/protein-tyrosine kinase 1, a novel member of the mixed lineage kinase family. J. Biol. Chem. 271: 27225-27228.
4. Moreau, M.M., et al. 2010. The planar polarity protein Scribble1 is essential for neuronal plasticity and brain function. J. Neurosci. 30: 9738-9752.
5. Liu, J., et al. 2013. N-acetylglucosaminyltransferase V confers hepatoma cells with resistance to anoikis through EGFR/PAK1 activation. Glycobiology 23: 1097-1109.
6. Chen, L., et al. 2013. Klotho endows hepatoma cells with resistance to anoikis via VEGFR2/PAK1 activation in hepatocellular carcinoma. PLoS ONE 8: e58413.

RESEARCH USE

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