

# PYK2 (N-19): sc-1514

## BACKGROUND

Focal adhesion kinase (FAK) was initially identified as a substrate for the intrinsic protein tyrosine kinase activity of Src-encoded pp60. The deduced amino acid sequence of FAK p125 has shown it to be a cytoplasmic protein tyrosine kinase whose sequence and structural organization are unique compared to other protein families described. A putative new member of the FAK family, designated PYK2 (proline-rich tyrosine kinase 2), exhibits 61% sequence identity with FAK over its kinase domain. PYK2 (also designated CAKb or RAFTK) is highly expressed in the central nervous system. Activation of the kinase leads to modulation of ion channel function and the activation of the MAPK signaling pathway. PYK2 is rapidly phosphorylated on tyrosine residues in response to stimuli that increase intracellular calcium levels and compounds that activate members of the PKC family of kinases, such as phorbol esters.

## CHROMOSOMAL LOCATION

Genetic locus: PTK2B (human) mapping to 8p21.2; Ptk2b (mouse) mapping to 14 D1.

## SOURCE

PYK2 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of PYK2 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-1514 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

PYK2 (N-19) is recommended for detection of PYK2 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).

PYK2 (N-19) is also recommended for detection of PYK2 in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for PYK2 siRNA (h): sc-36332, PYK2 siRNA (m): sc-36333, PYK2 shRNA Plasmid (h): sc-36332-SH, PYK2 shRNA Plasmid (m): sc-36333-SH, PYK2 shRNA (h) Lentiviral Particles: sc-36332-V and PYK2 shRNA (m) Lentiviral Particles: sc-36333-V.

Molecular Weight of PYK2: 120 kDa.

Positive Controls: PYK2 (h): 293T Lysate: sc-115595, KNRK whole cell lysate: sc-2214 or Ramos cell lysate: sc-2216.

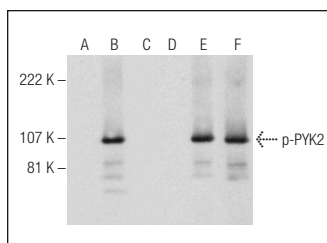
## STORAGE

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

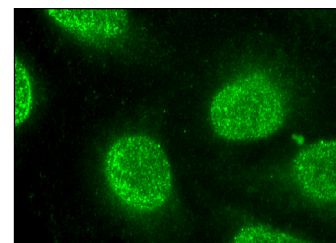
## RESEARCH USE

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

## DATA



Western blot analysis of PYK2 phosphorylation in non-transfected: sc-117752 (A,D), untreated human PYK2 transfected: sc-115595 (B,E) and lambda protein phosphatase (sc-200312A) treated human PYK2 transfected: sc-115595 (C,F) 293T whole cell lysates. Antibodies tested include p-PYK2 (Tyr 402)-R: sc-11767-R (A,B,C) and PYK2 (N-19): sc-1514 (D,E,F).



PYK2 (N-19): sc-1514. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

## SELECT PRODUCT CITATIONS

- Lakkakorpi, P.T., et al. 1999. Stable association of PYK2 and p130<sup>Cas</sup> in osteoclasts and their co-localization in the sealing zone. *J. Biol. Chem.* 274: 4900-4907.
- Ma, T., et al. 2010. Regulation of sealing ring formation by L-plastin and cortactin in osteoclasts. *J. Biol. Chem.* 285: 29911-29924.
- Vomaske, J., et al. 2010. HCMV pUS28 initiates pro-migratory signaling via activation of PYK2 kinase. *Herpesviridae* 1: 2.
- Consonni, A., et al. 2012. Role and regulation of phosphatidylinositol 3-kinase  $\beta$  in platelet integrin  $\alpha 2\beta 1$  signaling. *Blood* 119: 847-856.
- Aravindan, S., et al. 2013. Radiation-induced TNF $\alpha$  cross signaling-dependent nuclear import of NF $\kappa$ B favors metastasis in neuroblastoma. *Clin. Exp. Metastasis* 30: 807-817.
- Canobbio, I., et al. 2013. Impaired thrombin-induced platelet activation and thrombus formation in mice lacking the Ca<sup>2+</sup>-dependent tyrosine kinase PYK2. *Blood* 121: 648-657.
- Cipolla, L., et al. 2013. The proline-rich tyrosine kinase PYK2 regulates platelet integrin  $\alpha$ IIb $\beta$ 3 outside-in signaling. *J. Thromb. Haemost.* 11: 345-356.
- Zhang, Z., et al. 2014. Tyrosine 402 phosphorylation of PYK2 is involved in ionomycin-induced neurotransmitter release. *PLoS ONE* 9: e94574.



Try **PYK2 (E-3): sc-393181** or **PYK2 (F-6): sc-74539**, our highly recommended monoclonal alternatives to PYK2 (N-19). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **PYK2 (E-3): sc-393181**.