SANTA CRUZ BIOTECHNOLOGY, INC.

p-PYK2 (13.Tyr 402): sc-293142

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

PYK2 (proline-rich tyrosine kinase 2), a putative member of the FAK family, exhibits 61% sequence identity with FAK within its kinase domain. Like FAK, PYK2 has been shown to be a cytoplasmic protein tyrosine kinase, which is a substrate for the intrinsic protein tyrosine kinase activity of $pp60^{Src}$. PYK2 (also designated CAKβ or RAFTK) is highly expressed in the central nervous system. PYK2 is rapidly phosphorylated on tyrosine residues in response to stimuli, which increases intracellular calcium levels and, in turn, activates members of the PKC family of kinases. Specifically, PYK2 is phosphorylated on Tyr 402 after stimulation with heregulin. This promotes the formation of a multiprotein complex that mediates the phosphorylation of p190 RhoGAP by Src. Activation of the PYK2 kinase leads to modulation of ion channel function and the activation of the MAPK signaling pathway. PYK2 also contains phosphorylation sites within the activation loop at Tyr 579 and Tyr 580 and on the potential Grb2-binding site at Tyr 881.

CHROMOSOMAL LOCATION

Genetic locus: PTK2B (human) mapping to 8p21.2.

SOURCE

p-PYK2 (13.Tyr 402) is a mouse monoclonal antibody raised against a short amino acid sequence containing Tyr 402 phosphorylated PYK2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p-PYK2 (13.Tyr 402) is available conjugated to agarose (sc-293142 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; and to HRP (sc-293142 HRP), 200 µg/ml, for WB, IHC(P) and ELISA.

STORAGE

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

APPLICATIONS

p-PYK2 (13.Tyr 402) is recommended for detection of Tyr 402 phosphorylated PYK2 of 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).

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

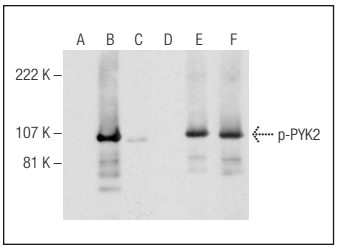
Molecular Weight of p-PYK2: 120 kDa.

Positive Controls: Jurkat + PMA cell lysate: sc-24718 or PYK2 (h): 293T Lysate: sc-115595.

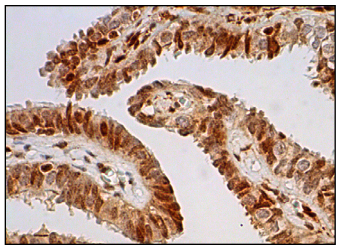
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Lambda Phosphatase: sc-200312A and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

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 (13.Tyr 402): sc-293142 (**A**,**B**,**C**) and PYK2 (N-19): sc-1514 (**D**,**E**,**F**).



p-PYK2 (13.Tyr 402): sc-293142. Immunoperoxidase staining of formalin fixed, paraffin-embedded human fallopian tube tissue showing nuclear staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Ali, M., et al. 2019. CRISPR/Cas9 engineering of ERK5 identifies its FAK/PYK2 dependent role in adhesion-mediated cell survival. Biochem. Biophys. Res. Commun. 513: 179-185.
2. Hasan, S., et al. 2019. Distinct spatiotemporal distribution of bacterial toxin-produced cellular cAMP differentially inhibits opsonophagocytic signaling. Toxins 11: 362.

RESEARCH USE

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

PROTOCOLS

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