

βPIX (H-3): sc-393184

BACKGROUND

The serine/threonine kinase, p21 activated kinase (PAK), is a downstream effector of the small GTPases Cdc42 and Rac. PAK associates with Nck, the p85 and p110 subunits of PI3-kinase, and PIX (PAK-interacting exchange factor) in a focal complex. The binding of PIX is necessary for the localization and activation of PAK in the Cdc42 to Rac signaling pathway, and this binding occurs through the high affinity of the N-terminal SH3 domain of PIX for a conserved proline rich PAK sequence. PIX exists as two isoforms, α and β and both are highly expressed in heart, muscle, and thymus tissues of human and rat. α PIX is phosphorylated via PDGF and EphB2 receptor signaling pathways or through association with PI3-kinase. The α PIX isoform predominantly acts as a guanine nucleotide exchange factor (GEF) on Rac, which may mediate lamellipodia formation.

CHROMOSOMAL LOCATION

Genetic locus: ARHGEF7 (human) mapping to 13q34; Arhgef7 (mouse) mapping to 8 A1.1.

SOURCE

βPIX (H-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 618-646 at the C-terminus of βPIX of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

βPIX (H-3) is available conjugated to agarose (sc-393184 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393184 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393184 PE), fluorescein (sc-393184 FITC), Alexa Fluor® 488 (sc-393184 AF488), Alexa Fluor® 546 (sc-393184 AF546), Alexa Fluor® 594 (sc-393184 AF594) or Alexa Fluor® 647 (sc-393184 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393184 AF680) or Alexa Fluor® 790 (sc-393184 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393184 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

βPIX (H-3) is recommended for detection of βPIX of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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). βPIX (H-3) is also recommended for detection of βPIX in additional species, including canine and bovine.

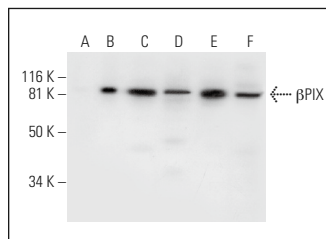
Suitable for use as control antibody for βPIX siRNA (h): sc-39148, βPIX siRNA (m): sc-39149, βPIX shRNA Plasmid (h): sc-39148-SH, βPIX shRNA Plasmid (m): sc-39149-SH, βPIX shRNA (h) Lentiviral Particles: sc-39148-V and βPIX shRNA (m) Lentiviral Particles: sc-39149-V.

Molecular Weight of βPIX: 85 kDa.

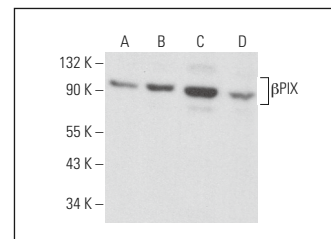
STORAGE

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

DATA



βPIX (H-3): sc-393184. Western blot analysis of βPIX expression in non-transfected 293T: sc-117752 (A), human βPIX transfected 293T: sc-177731 (B), Jurkat (C), PC-12 (D), NIH/3T3 (E) and IMR-32 (F) whole cell lysates.



βPIX (H-3): sc-393184. Western blot analysis of βPIX expression in Jurkat (A), K-562 (B), MCF7 (C) and HeLa (D) whole cell lysates.

SELECT PRODUCT CITATIONS

- Qin, L., et al. 2018. Social deficits in Shank3-deficient mouse models of autism are rescued by histone deacetylase (HDAC) inhibition. *Nat. Neurosci.* 21: 564-575.
- Sun, X., et al. 2019. The subcellular localization of type I p21-activated kinases is controlled by the disordered variable region and polybasic sequences. *J. Biol. Chem.* 294: 14319-14332.
- Ito, H., et al. 2020. Indispensable role of STIL in the regulation of cancer cell motility through the lamellipodial accumulation of ARHGEF7-PAK1 complex. *Oncogene* 39: 1931-1943.
- Masi, I., et al. 2021. Endothelin-1 drives invadopodia and interaction with mesothelial cells through ILK. *Cell Rep.* 34: 108800.
- Cheng, K., et al. 2021. Targeted intestinal deletion of Rho guanine nucleotide exchange factor 7, βPIX, impairs enterocyte proliferation, villus maturation, and mucosal defenses in mice. *Am. J. Physiol. Gastrointest. Liver Physiol.* 320: G627-G643.
- Hali, M., et al. 2022. α 4 contributes to the dysfunction of the pancreatic β cell under metabolic stress. *Mol. Cell. Endocrinol.* 557: 111754.
- Sternburg, E.L., et al. 2023. Mammalian pumilio proteins control cellular morphology, migration, and adhesion. *Sci. Rep.* 13: 3002.
- Cheng, K., et al. 2023. Muscarinic receptor agonist-induced βPix binding to β -catenin promotes colon neoplasia. *Sci. Rep.* 13: 16920.
- Chahdi, A., et al. 2024. Regulation of androgen receptor stability by the β 1 Pix/STUB1 complex. *FASEB J.* 38: e23408.

RESEARCH USE

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

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA