

PI 4-kinase β (E-4): sc-166615

BACKGROUND

The members of the phosphatidylinositol kinase (PIK) superfamily can be divided into three groups based on their substrate specificity. PIKs convert phosphatidylinositol (PI) into PI phosphate [PI(3)P], PI phosphate [PI(4)P], PI bisphosphate [PI(4,5)P₂] and PI triphosphate [PI(3,4,5)P₃]. The first group, the PI 3-kinases, is composed of highly related proteins designated p110 α , p110 β , p110 γ and p110 δ which convert PI into PI(3)P and PI(4,5)P₂ into PI(3,4,5)P₃. The second group, the PI 4-kinases, convert PI into PI(4)P. The third group, the PI(4)P5-kinases, convert PI(4)P into PI(4,5)P₂. Phosphatidylinositides represent important regulatory molecules and are involved in a diverse array of signaling pathways. Phosphatidylinositol biphosphate acts as an activator of PKCs and as a substrate for PLC γ , which converts the molecule into the second messengers, Inositol-1,4,5 triphosphate and 1,2-diacylglycerol. PI(3,4,5)P₃ has been shown to activate the PKC ζ isoform. PI 4-kinase β is a cytoplasmic protein inhibited by Wortmannin.

REFERENCES

- Woscholski, R., et al. 1994. Biochemical characterization of the free catalytic p110 α and the complexed heterodimeric p110 α . p85 α forms of the mammalian phosphatidylinositol 3-kinase. *J. Biol. Chem.* 269: 25067-25072.
- Woscholski, R., et al. 1994. A comparison of demethoxyviridin and Wortmannin as inhibitors of phosphatidylinositol 3-kinase. *FEBS Lett.* 342: 109-114.

CHROMOSOMAL LOCATION

Genetic locus: PIK4CB (human) mapping to 1q21.3; Pik4cb (mouse) mapping to 3 F2.1.

SOURCE

PI 4-kinase β (E-4) is a mouse monoclonal antibody raised against a peptide mapping at the N-terminus of PI 4-kinase β 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.

PI 4-kinase β (E-4) is available conjugated to agarose (sc-166615 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166615 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166615 PE), fluorescein (sc-166615 FITC), Alexa Fluor® 488 (sc-166615 AF488), Alexa Fluor® 546 (sc-166615 AF546), Alexa Fluor® 594 (sc-166615 AF594) or Alexa Fluor® 647 (sc-166615 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166615 AF680) or Alexa Fluor® 790 (sc-166615 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166615 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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RESEARCH USE

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

APPLICATIONS

PI 4-kinase β (E-4) is recommended for detection of PI 4-kinase β 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).

PI 4-kinase β (E-4) is also recommended for detection of PI 4-kinase β in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for PI 4-kinase β siRNA (h): sc-45716, PI 4-kinase β siRNA (m): sc-45717, PI 4-kinase β shRNA Plasmid (h): sc-45716-SH, PI 4-kinase β shRNA Plasmid (m): sc-45717-SH, PI 4-kinase β shRNA (h) Lentiviral Particles: sc-45716-V and PI 4-kinase β shRNA (m) Lentiviral Particles: sc-45717-V.

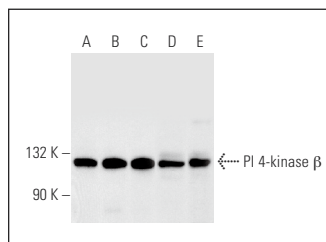
Molecular Weight of PI 4-kinase β : 110 kDa.

Positive Controls: SH-SY5Y cell lysate: sc-3812, SK-N-SH cell lysate: sc-2410 or HL-60 whole cell lysate: sc-2209.

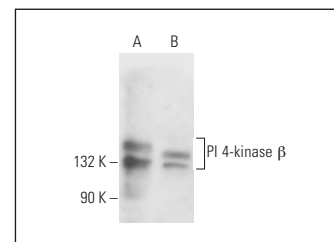
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



PI 4-kinase β (E-4): sc-166615. Western blot analysis of PI 4-kinase β expression in HL-60 (A), A-431 (B), Jurkat (C), SH-SY5Y (D) and SK-N-SH (E) whole cell lysates.



PI 4-kinase β (E-4): sc-166615. Western blot analysis of PI 4-kinase β expression in HL-60 (A) and MCF7 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Obata, Y., et al. 2023. Golgi retention and oncogenic KIT signaling via PLC γ 2-PKD2-PI4KIII β activation in gastrointestinal stromal tumor cells. *Cell Rep.* 42: 113035.

STORAGE

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