

# PI 3-kinase p110 $\beta$ (C-8): sc-376641

## BACKGROUND

Phosphatidylinositol 3-kinase (PI 3-kinase) is composed of p85 and p110 subunits. p85 lacks PI 3-kinase activity and acts as an adapter, coupling p110 to activated protein tyrosine kinase. Two forms of p85 have been described (p85 $\alpha$  and p85 $\beta$ ), each possessing one SH3 and two SH2 domains. Various p110 isoforms have been identified. p110 $\alpha$  and p110 $\beta$  interact with p85 $\alpha$ , and p110 $\alpha$  has also been shown to interact with p85 $\beta$  *in vitro*. p110 $\delta$  expression is restricted to white blood cells. It has been shown to bind p85 $\alpha$  and  $\beta$ , but it apparently does not phosphorylate these subunits. p110 $\delta$  seems to have the capacity to autophosphorylate. p110 $\gamma$  does not interact with the p85 subunits. It has been shown to be activated by  $\alpha$  and  $\beta\gamma$  heterotrimeric G proteins.

## REFERENCES

- Skolnik, E.Y., et al. 1991. Cloning of PI3 kinase-associated p85 utilizing a novel method for expression/cloning of target proteins for receptor tyrosine kinases. *Cell* 65: 83-90.
- Otsu, M., et al. 1991. Characterization of two 85 kd proteins that associate with receptor tyrosine kinases, middle-T/pp60<sup>c-src</sup> complexes, and PI3-kinase. *Cell* 65: 91-104.

## CHROMOSOMAL LOCATION

Genetic locus: PIK3CB (human) mapping to 3q22.3; Pik3cb (mouse) mapping to 9 E3.3.

## SOURCE

PI 3-kinase p110 $\beta$  (C-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-31 at the N-terminus of PI 3-kinase p110 $\beta$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PI 3-kinase p110 $\beta$  (C-8) is available conjugated to agarose (sc-376641 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376641 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376641 PE), fluorescein (sc-376641 FITC), Alexa Fluor® 488 (sc-376641 AF488), Alexa Fluor® 546 (sc-376641 AF546), Alexa Fluor® 594 (sc-376641 AF594) or Alexa Fluor® 647 (sc-376641 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376641 AF680) or Alexa Fluor® 790 (sc-376641 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376641 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## STORAGE

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

## APPLICATIONS

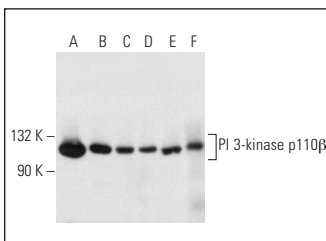
PI 3-kinase p110 $\beta$  (C-8) is recommended for detection of PI 3-kinase p110 $\beta$  of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (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 PI 3-kinase p110 $\beta$  siRNA (h): sc-37269, PI 3-kinase p110 $\beta$  siRNA (m): sc-29447, PI 3-kinase p110 $\beta$  shRNA Plasmid (h): sc-37269-SH, PI 3-kinase p110 $\beta$  shRNA Plasmid (m): sc-29447-SH, PI 3-kinase p110 $\beta$  shRNA (h) Lentiviral Particles: sc-37269-V and PI 3-kinase p110 $\beta$  shRNA (m) Lentiviral Particles: sc-29447-V.

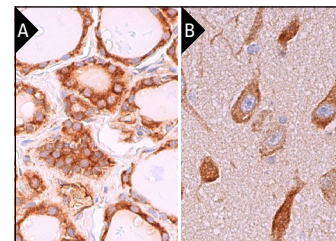
Molecular Weight of PI 3-kinase p110 $\beta$ : 110 kDa.

Positive Controls: LADMAC whole cell lysate: sc-364189, AMJ2-C8 whole cell lysate: sc-364366 or RAW 264.7 whole cell lysate: sc-2211.

## DATA



PI 3-kinase p110 $\beta$  (C-8): sc-376641. Western blot analysis of PI 3-kinase p110 $\beta$  expression in K-562 (A), RAW 264.7 (B), AMJ2-C8 (C), LADMAC (D) and RBL-1 (E) whole cell lysates and rat cerebellum tissue extract (F).



PI 3-kinase p110 $\beta$  (C-8): sc-376641. Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing cytoplasmic staining of glandular cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing cytoplasmic staining of neuronal cells (B).

## SELECT PRODUCT CITATIONS

- Ali, T., et al. 2017. Natural dietary supplementation of anthocyanins via PI3K/Akt/Nrf2/HO-1 pathways mitigate oxidative stress, neurodegeneration, and memory impairment in a mouse model of Alzheimer's disease. *Mol. Neurobiol.* 55: 6076-6093.
- Palrasu, M., et al. 2020. Bacterial CagA protein compromises tumor suppressor mechanisms in gastric epithelial cells. *J. Clin. Invest.* 130: 2422-2434.
- Basta, M.D., et al. 2022. PI3K isoform-specific regulation of leader and follower cell function for collective migration and proliferation in response to injury. *Cells* 11: 3515.
- Miller, K.A., et al. 2024. PTEN-regulated PI3K-p110 and AKT isoform plasticity controls metastatic prostate cancer progression. *Oncogene* 43: 22-34.

## RESEARCH USE

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