

# PI 4-kinase $\alpha$ (N-19): sc-1328

## 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)P<sub>2</sub>] and PI triphosphate [PI(3,4,5)P<sub>3</sub>]. The first group, the PI 3-kinases, is composed of highly related proteins designated p110 $\alpha$ , p110 $\beta$ , p110 $\gamma$  and p110 $\delta$  which convert PI into PI(3)P and PI(4,5)P<sub>2</sub> into PI(3,4,5)P<sub>3</sub>. 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)P<sub>2</sub>. 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  $\gamma$ , which converts the molecule into the second messengers, inositol-1,4,5 triphosphate and 1,2-diaclyglycerol. PI(3,4,5)P<sub>3</sub> has been shown to activate the PKC  $\zeta$  isoform. Wortmannin, originally described as a specific inhibitor of PI 3-kinases, may actually be a broad spectrum inhibitor of PI kinase activity.

## CHROMOSOMAL LOCATION

Genetic locus: PI4KA (human) mapping to 22q11.21; Pi4ka (mouse) mapping to 16 A3.

## SOURCE

PI 4-kinase  $\alpha$  (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PI 4-kinase  $\alpha$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-1328 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

PI 4-kinase  $\alpha$  (N-19) is recommended for detection of PI 4-kinase  $\alpha$  of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

PI 4-kinase  $\alpha$  (N-19) is also recommended for detection of PI 4-kinase  $\alpha$  in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PI 4-kinase  $\alpha$  siRNA (h): sc-44012, PI 4-kinase  $\alpha$  siRNA (m): sc-39134, PI 4-kinase  $\alpha$  shRNA Plasmid (h): sc-44012-SH, PI 4-kinase  $\alpha$  shRNA Plasmid (m): sc-39134-SH, PI 4-kinase  $\alpha$  shRNA (h) Lentiviral Particles: sc-44012-V and PI 4-kinase  $\alpha$  shRNA (m) Lentiviral Particles: sc-39134-V.

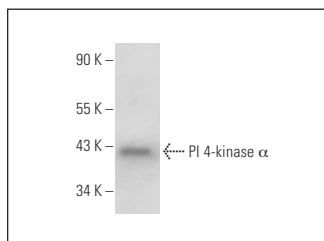
Molecular Weight of PI 4-kinase  $\alpha$  isoforms: 97/43 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



PI 4-kinase  $\alpha$  (N-19): sc-1328. Western blot analysis of PI 4-kinase  $\alpha$  expression in HL-60 whole cell lysate.

## SELECT PRODUCT CITATIONS

- Ekblad, L., et al. 2001. Localization of phosphatidylinositol 4-kinase iso-enzymes in rat liver plasma membrane domains. *Biochim. Biophys. Acta* 1531: 209-221.
- Abedinpour, P., et al. 2003. Isolation of a caveolae-enriched fraction from rat lung by affinity partitioning and sucrose gradient centrifugation. *Anal. Biochem.* 313: 1-8.
- Kakuk, A., et al. 2006. Nucleolar localization of phosphatidylinositol 4-kinase PI4K230 in various mammalian cells. *Cytometry A* 69: 1174-1183.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.