

# PIKE (P-18): sc-55376

## BACKGROUND

PIKE (phosphatidylinositol-3-kinase enhancer), also known as CENTG1 (centaurin- $\gamma$ -1), AGAP2 or GGAP2 is a 1,192 amino acid protein that is expressed as 2 isoforms, namely PIKE-L, which is brain-specific and PIKE-A (also known as PIKE-S) which is found throughout the body. Localized to both the nucleus and the cytoplasm, PIKE functions as a GAP (GTPase-activating protein) that is activated by phosphatidylinositol 4,5-bisphosphate (PIP2) and plays an important role in the prevention of neuronal apoptosis. Specifically, PIKE interacts with proteins such as ARF1, ARF5, PLC  $\gamma$ 1 and Homer and via these interactions regulates endosomal trafficking and protein coupling events. PIKE contains one PH domain, one Miro domain, one Arf-GAP domain and two ANK repeats through which it conveys its protein-binding and GAP activity. While overexpression of PIKE causes tumor growth and invasion, reduced levels of PIKE are associated with neuronal cell death.

## REFERENCES

1. Ye, K., et al. 2000. PIKE. A nuclear gtpase that enhances PI3kinase activity and is regulated by protein 4.1N. *Cell* 103: 919-930.
2. Nie, Z., et al. 2002. AGAP1, an endosome-associated, phosphoinositide-dependent ADP-ribosylation factor GTPase-activating protein that affects actin cytoskeleton. *J. Biol. Chem.* 277: 48965-48975.
3. Ahn, J.Y., et al. 2004. PIKE (phosphatidylinositol 3-kinase enhancer)-A GTPase stimulates Akt activity and mediates cellular invasion. *J. Biol. Chem.* 279: 16441-16451.
4. Ahn, J.Y., et al. 2004. PIKE-A is amplified in human cancers and prevents apoptosis by up-regulating Akt. *Proc. Natl. Acad. Sci. USA* 101: 6993-6998.
5. Ahn, J.Y., et al. 2005. PIKE GTPase signaling and function. *Int. J. Biol. Sci.* 1: 44-50.
6. Liu, X., et al. 2007. PIKE-A is a proto-oncogene promoting cell growth, transformation and invasion. *Oncogene* 26: 4918-4927.
7. Liu, Z., et al. 2008. Neuroprotective actions of PIKE-L by inhibition of SET proteolytic degradation by asparagine endopeptidase. *Mol. Cell* 29: 665-678.

## CHROMOSOMAL LOCATION

Genetic locus: CENTG1 (human) mapping to 12q14.1; Centg1 (mouse) mapping to 10 D3.

## SOURCE

PIKE (P-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PIKE of mouse 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-55376 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

PIKE (P-18) is recommended for detection of PIKE 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).

PIKE (P-18) is also recommended for detection of PIKE in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for PIKE siRNA (h): sc-62812, PIKE siRNA (m): sc-62813, PIKE shRNA Plasmid (h): sc-62812-SH, PIKE shRNA Plasmid (m): sc-62813-SH, PIKE shRNA (h) Lentiviral Particles: sc-62812-V and PIKE shRNA (m) Lentiviral Particles: sc-62813-V.

Molecular Weight of PIKE-L: 130 kDa.

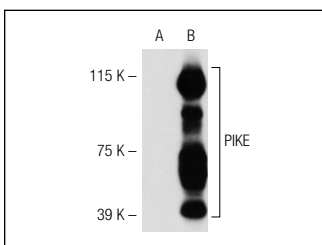
Molecular Weight of PIKE-S: 90 kDa.

Positive Controls: PIKE (h): 293T Lysate: sc-114780.

## 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



PIKE (P-18): sc-55376. Western blot analysis of PIKE expression in non-transfected: sc-117752 (A) and human PIKE transfected: sc-114780 (B) 293T whole cell lysates.

## 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.