

Phospho-PTEN(Y174) Antibody
Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP3788h

Specification

Phospho-PTEN(Y174) Antibody - Product Information

Application	DB,E
Primary Accession	P60484
Other Accession	Q9PUT6 , Q08586 , NP_000305.3
Reactivity	Human
Predicted	Mouse, Xenopus
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit Ig
Calculated MW	47166

Phospho-PTEN(Y174) Antibody - Additional Information

Gene ID 5728

Other Names

Phosphatidylinositol 3, 5-trisphosphate 3-phosphatase and dual-specificity protein phosphatase PTEN, Mutated in multiple advanced cancers 1, Phosphatase and tensin homolog, PTEN, MMAC1, TEP1

Target/Specificity

This PTEN Antibody is generated from rabbits immunized with a KLH conjugated synthetic phosphopeptide corresponding to amino acid residues surrounding Y174 of human PTEN.

Dilution

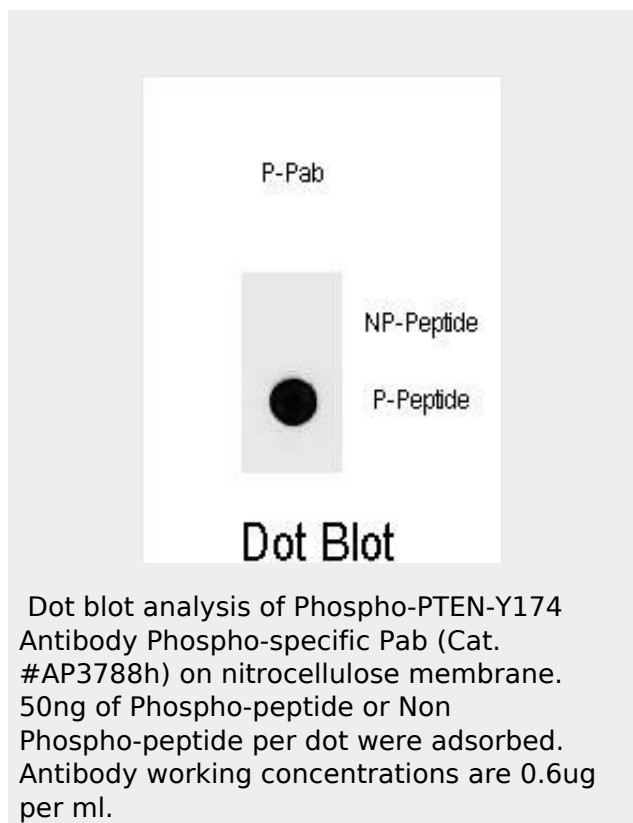
DB~~1:500

Format

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

Storage

Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw



Phospho-PTEN(Y174) Antibody - Background

This gene was identified as a tumor suppressor that is mutated in a large number of cancers at high frequency. The protein encoded this gene is a phosphatidylinositol-3,4,5-trisphosphate 3-phosphatase. It contains a tensin like domain as well as a catalytic domain similar to that of the dual specificity protein tyrosine phosphatases. Unlike most of the protein tyrosine phosphatases, this protein preferentially dephosphorylates phosphoinositide substrates. It negatively regulates intracellular levels of phosphatidylinositol-3,4,5-trisphosphate in

cycles.

Precautions

Phospho-PTEN(Y174) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Phospho-PTEN(Y174) Antibody - Protein Information

Name PTEN

Synonyms MMAC1, TEP1

Function

Tumor suppressor. Acts as a dual-specificity protein phosphatase, dephosphorylating tyrosine-, serine- and threonine-phosphorylated proteins. Also acts as a lipid phosphatase, removing the phosphate in the D3 position of the inositol ring from phosphatidylinositol 3,4,5-trisphosphate, phosphatidylinositol 3,4- diphosphate, phosphatidylinositol 3-phosphate and inositol 1,3,4,5- tetrakisphosphate with order of substrate preference in vitro PtdIns(3,4,5)P3 > PtdIns(3,4)P2 > PtdIns3P > Ins(1,3,4,5)P4 (PubMed:26504226, PubMed:16824732). The lipid phosphatase activity is critical for its tumor suppressor function. Antagonizes the PI3K-AKT/PKB signaling pathway by dephosphorylating phosphoinositides and thereby modulating cell cycle progression and cell survival. The unphosphorylated form cooperates with MAGI2 to suppress AKT1 activation. Dephosphorylates tyrosine-phosphorylated focal adhesion kinase and inhibits cell migration and integrin-mediated cell spreading and focal adhesion formation. Plays a role as a key modulator of the AKT-mTOR signaling pathway controlling the tempo of the process of newborn neurons integration during adult neurogenesis, including correct neuron positioning, dendritic development and synapse formation. May be a negative regulator of insulin signaling and glucose metabolism in adipose tissue. The nuclear monoubiquitinated form possesses greater apoptotic potential, whereas the cytoplasmic nonubiquitinated form induces

cells and functions as a tumor suppressor by negatively regulating AKT/PKB signaling pathway.

Phospho-PTEN(Y174) Antibody - References

Miletic, A.V., et al. J. Exp. Med. 207(11):2407-2420(2010)
Kini, V., et al. J. Biol. Chem. 285(43):33082-33091(2010)
Shimada, M., et al. Hum. Genet. 128(4):433-441(2010)
Molina, J.R., et al. Cancer Res. 70(17):6697-6703(2010)
Iliopoulos, D., et al. Mol. Cell 39(4):493-506(2010)

less tumor suppressive ability. In motile cells, suppresses the formation of lateral pseudopods and thereby promotes cell polarization and directed movement.

Cellular Location

Cytoplasm. Nucleus. Nucleus, PML body.
Note=Monoubiquitinated form is nuclear.
Nonubiquitinated form is cytoplasmic.
Colocalized with PML and USP7 in PML nuclear bodies (PubMed:18716620).
XIAP/BIRC4 promotes its nuclear localization (PubMed:19473982).

Tissue Location

Expressed at a relatively high level in all adult tissues, including heart, brain, placenta, lung, liver, muscle, kidney and pancreas.

Phospho-PTEN(Y174) Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)