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PTEN Antibody (C-term) Blocking peptide

Synthetic peptide
Catalog # BP13310b

Specification

PTEN Antibody (C-term) Blocking peptide - Product Information

Primary Accession P60484

PTEN Antibody (C-term) Blocking peptide - 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
The synthetic peptide sequence used to generate the antibody AP13310b was selected from the C-term region of PTEN. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

PTEN Antibody (C-term) Blocking peptide - Protein Information

Name PTEN

PTEN Antibody (C-term) Blocking peptide - Background

This gene was identified as a tumor suppressor that ismutated in a large number of cancers at high frequency. The proteinencoded this gene is a phosphatidylinositol-3,4,5-trispho sphate3-phosphatase. It contains a tensin like domain as well as acatalytic domain similar to that of the dual specificity proteintyrosine phosphatases. Unlike most of the protein tyrosinephosphatases, this protein preferentially dephosphorylatesphosphoinositide substrates. It negatively regulates intracellularlevels of phosphatidylinositol-3,4,5-trisphosphate in cells andfunctions as a tumor suppressor by negatively regulating AKT/PKBsignaling pathway.

PTEN Antibody (C-term) Blocking peptide - 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)

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 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.

PTEN Antibody (C-term) Blocking peptide - Protocols

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

- Blocking Peptides