

PTEN Antibody (N-term)
Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8436a

Specification

PTEN Antibody (N-term) - Product Information

Application	IF, WB, IHC-P,E
Primary Accession	P60484
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit Ig
Antigen Region	69-104

PTEN Antibody (N-term) - 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 peptide between 69-104 amino acids from the N-terminal region of human PTEN.

Dilution

IF~~1:10~50
WB~~1:1000
IHC-P~~1:10~50

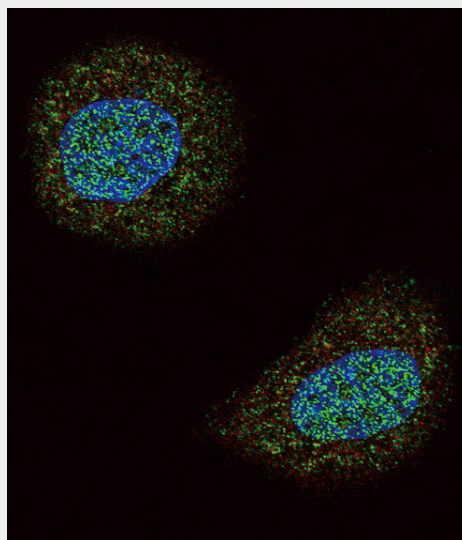
Format

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.

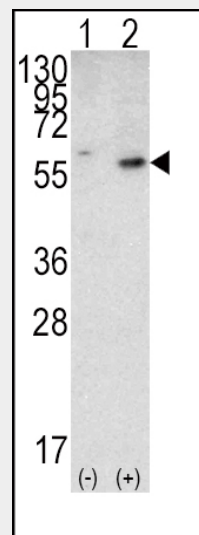
Storage

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 cycles.

Precautions



Confocal immunofluorescent analysis of PTEN Antibody (N-term)(Cat#AP8436a) with MCF-7 cell followed by Alexa Fluor 488-conjugated goat anti-rabbit IgG (green).Actin filaments have been labeled with Alexa Fluor 555 phalloidin (red).DAPI was used to stain the cell nuclear (blue).



Western blot analysis of PTEN (arrow) using rabbit PTEN Antibody (N-term) (Cat. #AP8436a).293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently

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

PTEN Antibody (N-term) - Protein Information

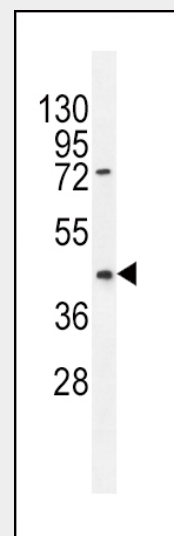
Name PTEN

Synonyms MMAC1, TEP1

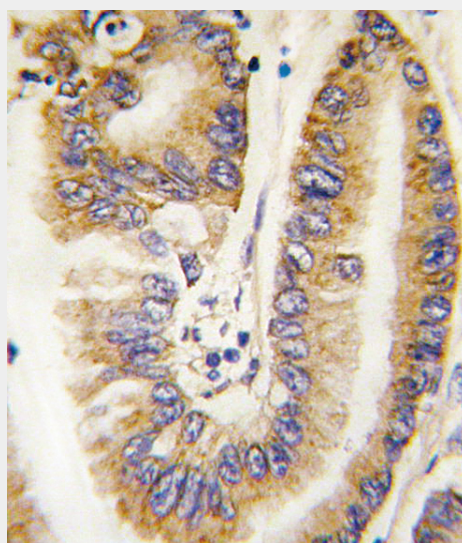
Function

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 $\text{PtdIns}(3,4,5)\text{P}_3 > \text{PtdIns}(3,4)\text{P}_2 > \text{PtdIns}3\text{P} > \text{Ins}(1,3,4,5)\text{P}_4$ (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.

transfected with the PTEN gene (Lane 2) (Origene Technologies).



PTEN Antibody (N-term) (Cat. #AP8436a) western blot analysis in HL-60 cell line lysates (35ug/lane). This demonstrates the PTEN antibody detected the PTEN protein (arrow).



Formalin-fixed and paraffin-embedded human lung carcinoma tissue reacted with PTEN antibody (N-term) (Cat.#AP8436a), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.

PTEN Antibody (N-term) - Background

PTEN, (phosphatase and tensin homolog deleted on chromosome 10), also known as

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 (N-term) - 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](#)

PTEN Antibody (N-term) - Citations

- [PTEN as a Guardian of the Genome: Pathways and Targets](#)
- [Induction of apoptotic genes by a p73-phosphatase and tensin homolog \(p73-PTEN\) protein complex in response to genotoxic stress.](#)
- [Liver-specific deletion of protein tyrosine phosphatase \(PTP\) 1B improves obesity- and pharmacologically induced endoplasmic reticulum stress.](#)

MMAC1 (mutated in multiple advanced cancers 1), is a tumor suppressor implicated in a large number of human tumors. The PTEN phosphatase incorporates the catalytic motif (HCXXGXXRS/T) that is a signature of the protein tyrosine phosphatase family. Recombinant human PTEN is a dual phosphatase with ability to dephosphorylate both tyrosine and serine/threonine residues. PTEN functions primarily as a lipid phosphatase to regulate signal transduction pathways, with a primary target identified as phosphatidylinositol 3,4,5 trisphosphate. In addition, PTEN presents weak tyrosine phosphatase activity, which may downregulate signaling pathways involving focal adhesion kinase or Shc. PTEN negatively regulates activation of the serine/threonine kinase Akt/PKB by blocking its phosphorylation, thereby inhibiting the PI 3 kinase Akt signaling pathway, which is important for cell survival. In vivo, the majority of PTEN missense mutations detected in tumor specimens target the phosphatase domain and cause a loss in PTEN phosphatase activity. Mutations in PTEN are associated with several common cancers including prostate, brain and breast cancer, and with Cowden's disease, an autosomal dominant disorder conferring susceptibility to benign and malignant tumors. Germline mutations of PTEN are also linked Lhermitte-Duclos disease and Bannayan-Zonana syndrome. Mutations of PTEN occur in 60 to 80% of prostate cancers. PTEN is also essential for embryonic development.