

**PTEN Antibody (C-term)**  
**Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP8436c**

**Specification**

**PTEN Antibody (C-term) - Product Information**

Application	<b>IF, WB,E</b>
Primary Accession	<a href="#">P60484</a>
Reactivity	<b>Human</b>
Host	<b>Rabbit</b>
Clonality	<b>Polyclonal</b>
Isotype	<b>Rabbit Ig</b>
Calculated MW	<b>47166</b>
Antigen Region	<b>371-403</b>

**PTEN Antibody (C-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 371-403 amino acids from the C-terminal region of human PTEN.

**Dilution**

IF~~1:10~50  
WB~~1:1000

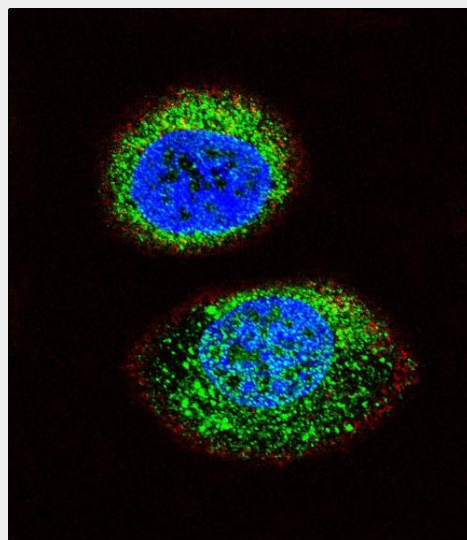
**Format**

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.

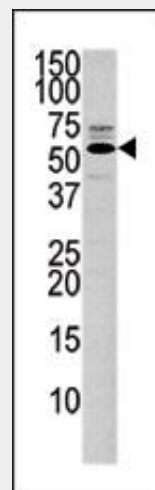
**Storage**

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 (C-term)(Cat#AP8436c) 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 anti-PTEN Pab (Cat. #AP8436c) in 293 cell line lysate (35ug/lane). PTEN(arrow) was detected using the purified Pab.

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

#### **PTEN Antibody (C-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:<a href="http://www.uniprot.org/citations/26504226" target="\_blank">26504226</a>, PubMed:<a href="http://www.uniprot.org/citations/16824732" target="\_blank">16824732</a>). 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.

#### **PTEN Antibody (C-term) - Background**

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

#### **PTEN Antibody (C-term) - References**

Smith, J.M., et al., J. Med. Genet. 39(12):937-940 (2002).  
Poetsch, M., et al., Cancer Genet. Cytogenet. 132(1):20-24 (2002).  
Staal, F.J., et al., Br. J. Cancer 86(10):1586-1591 (2002).  
Strausberg, R.L., et al., Proc. Natl. Acad. Sci. U.S.A. 99(26):16899-16903 (2002).  
Reardon, W., et al., J. Med. Genet. 38(12):820-823 (2001).

**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) - 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](#)