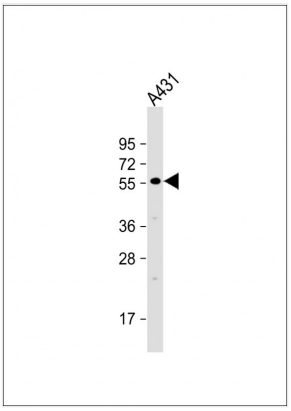
PTEN Antibody – Rabbit Polyclonal

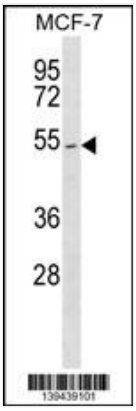
PRODUCT OVERVIEW

Product Name	PTEN, Polyclonal Antibody
Full Product Name	PTEN Antibody (Center S385)
Product Gene Name	anti-PTEN antibody
Product Synonym Gene Name	MMAC1; TEP1
Product Synonym 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
Clonality	Polyclonal
Isotype	Ig
Host	Rabbit
Species Reactivity	Human; Predicted Reactivity: Mouse, Xenopus
Form/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.
Specificity	This PTEN antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 363-392 amino acids from the Central region of human PTEN.
Preparation and Storage	Maintain refrigerated at 2-8 degree C for up to 6 months. For long term storage store at -20 degree C in small aliquots to prevent freeze-thaw cycles.
Antibody/Peptide Pairs	PTEN peptide (MBS9223616) is used for blocking the activity of PTEN antibody (MBS9217099)
Molecular Weight	47166 Da
OMIM	137800
3D Structure	ModBase 3D Structure for P60484
Subtitle	Peptide Affinity Purified Rabbit Polyclonal Antibody (Pab)
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 XIAP/BIRC4 promotes its nuclear localization.
Tissue Location	Expressed at a relatively high level in all adult tissues, including heart, brain, placenta, lung, liver, muscle, kidney and pancreas.
Antigen Region	363-392 aa
Antigen Type	Synthetic Peptide
Product Categories/Family for anti-PTEN antibody	Primary Antibodies; Cancer; Cell Biology; Metabolism; Signal Transduction
Applications Tested/Suitable for anti-PTEN antibody	Western Blot (WB), ELISA (EIA)
Application Notes for anti-PTEN antibody	WB:~~1:1000

Related Product Information for anti-PTEN antibody	Description: 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 cells and functions as a tumor suppressor by negatively regulating AKT/PKB signaling pathway. Background: 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. 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 AIP1 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.
Product References and Citations for anti-PTEN antibody	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).
Other Notes	Small volumes of anti-PTEN antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for PTEN purchase	MBS9217099 is an antibody targeting PTEN. Also known as PTEN Antibody (Center S385). Reactive in Human; Predicted Reactivity: Mouse, Xenopus. Host: Rabbit.



Western Blot (WB) of anti-PTEN antibody
Anti-PTEN-S385 at 1:1000 dilution + A431 whole cell lysateLysates/proteins at 20 ug per lane. SecondaryGoat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 47 kDaBlocking/Dilution buffer: 5% NFDM/TBST.



Western Blot (WB) of anti-PTEN antibody
PTEN Antibody (S385) western blot analysis in MCF-7 cell line lysates (35ug/lane).This demonstrates the PTEN antibody detected the PTEN protein (arrow).

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for PTEN. It may not necessarily be applicable to this product.

NCBI GI #	73765544
NCBI GeneID	5728
NCBI Accession #	NP_000305.3
UniProt Primary Accession #	P60484

UniProt Secondary Accession #	O00633; O02679; Q6ICT7; B2R904; F2YHV0
UniProt Related Accession #	P60484
GenBank Nucleotide #	NM_000314.6
NCBI Official Full Name	phosphatidylinositol 3,4,5-trisphosphate 3-phosphatase and dual-specificity protein phosphatase PTEN isoform PTEN
NCBI Official Synonym Full Names	phosphatase and tensin homolog
NCBI Official Symbol	PTEN
NCBI Official Synonym Symbols	BZS; DEC; CWS1; GLM2; MHAM; TEP1; MMAC1; PTEN1; 10q23del
UniProt Protein Name	Phosphatidylinositol 3,4,5-trisphosphate 3-phosphatase and dual-specificity protein phosphatase PTEN
UniProt Synonym Protein Names	Mutated in multiple advanced cancers 1; Phosphatase and tensin homolog
Protein Family	Phosphatidylinositol 3,4,5-trisphosphate 3-phosphatase and dual-specificity protein phosphatase
UniProt Gene Name	PTEN
UniProt Synonym Gene Names	MMAC1; TEP1
UniProt Entry Name	PTEN_HUMAN
NCBI Protein Information	phosphatidylinositol 3,4,5-trisphosphate 3-phosphatase and dual-specificity protein phosphatase PTEN
NCBI Summary for PTEN	This gene was identified as a tumor suppressor that is mutated in a large number of cancers at high frequency. The protein encoded by 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 cells and functions as a tumor suppressor by negatively regulating AKT/PKB signaling pathway. The use of a non-canonical (CUG) upstream initiation site produces a longer isoform that initiates translation with a leucine, and is thought to be preferentially associated with the mitochondrial inner membrane. This longer isoform may help regulate energy metabolism in the mitochondria. A pseudogene of this gene is found on chromosome 9. Alternative splicing and the use of multiple translation start codons results in multiple transcript variants encoding different isoforms. [provided by RefSeq, Feb 2015]

UniProt Comments for PTEN	PTEN: a phosphoinositide 3-phosphatase (PIP3) and a tumor suppressor implicated in a wide variety of human cancers. Dephosphorylates inositol phospholipids generated by the activation of the phosphoinositide 3 kinase (PI3K). A major negative regulator of the PI3K/Akt signaling pathway. Possesses a C-terminal regulatory domain that contains three phosphorylation sites which may regulate its stability. Protein type: EC 3.1.3.16; Nuclear receptor co-regulator; Phosphatase, lipid; EC 3.1.3.48; Motility/polarity/chemotaxis; EC 3.1.3.67; Tumor suppressor; Carbohydrate Metabolism - inositol phosphate Chromosomal Location of Human Ortholog: 10q23.3 Cellular Component: apical plasma membrane; cell projection; cytoplasm; cytosol; dendritic spine; extracellular region; internal side of plasma membrane; mitochondrion; neuron projection; nucleoplasm; nucleus; plasma membrane; PML body; postsynaptic membrane Molecular Function: enzyme binding; identical protein binding; inositol-1,3,4,5-tetrakisphosphate 3-phosphatase activity; lipid binding; magnesium ion binding; PDZ domain binding; phosphatidylinositol-3,4,5-trisphosphate 3-phosphatase activity; phosphatidylinositol-3,4-bisphosphate 3-phosphatase activity; phosphatidylinositol-3-phosphatase activity; phosphoprotein phosphatase activity; platelet-derived growth factor receptor binding; protein binding; protein kinase binding; protein serine/threonine phosphatase activity; protein tyrosine phosphatase activity; protein tyrosine/serine/threonine phosphatase activity Biological Process: adult behavior; aging; anaphase-promoting complex activation during mitotic cell cycle; angiogenesis; apoptosis; brain morphogenesis; cardiac muscle development; cell migration; cell proliferation; central nervous system development; central nervous system neuron axonogenesis; dentate gyrus development; endothelial cell migration; forebrain morphogenesis; G1/S-specific negative regulation of cyclin-dependent protein kinase activity; heart development; inositol phosphate dephosphorylation; inositol phosphate metabolic process; learning and/or memory; locomotor rhythm; locomotory behavior; male mating behavior; maternal behavior; memory; multicellular organismal response to stress; myelin maintenance in the central nervous system; negative regulation of apoptosis; negative regulation of axonogenesis; negative regulation of cell migration; negative regulation of cell proliferation; negative regulation of cell size; negative regulation of epithelial cell proliferation; negative regulation of focal adhesion formation; negative regulation of myelination; negative regulation of organ growth; negative regulation of phagocytosis; negative regulation of phosphoinositide 3-kinase cascade; negative regulation of protein amino acid phosphorylation; negative regulation of protein kinase B signaling cascade; nerve-nerve synaptic transmission; phosphatidylinositol biosynthetic process; phosphoinositide dephosphorylation; phosphoinositide-mediated signaling; platelet-derived growth factor receptor signaling pathway; positive regulation of cell proliferation; positive regulation of transcription factor activity; prepulse inhibition; protein amino acid dephosphorylation; protein kinase B signaling cascade; protein stabilization; regulation of axon regeneration; regulation of B cell apoptosis; regulation of cellular component size; regulation of cyclin-dependent protein kinase activity; regulation of myeloid cell apoptosis; regulation of protein stability; regulation of synaptic transmission, GABAergic; response to arsenic; response to ATP; response to drug; response to estradiol stimulus; response to ethanol; response to glucose stimulus; response to nutrient; response to zinc ion; rhythmic synaptic transmission; social behavior; synapse maturation; synaptogenesis; T cell receptor signaling pathway; Wnt receptor signaling pathway through beta-catenin Disease: Bannayan-riley-ruvalcaba Syndrome; Cowden Syndrome 1; Endometrial Cancer; Glioma Susceptibility 2; Macrocephaly/autism Syndrome; Melanoma, Cutaneous Malignant, Susceptibility To, 1; Meningioma, Familial, Susceptibility To; Prostate Cancer; Squamous Cell Carcinoma, Head And Neck; Thyroid Carcinoma, Follicular; Vacterl Association With Hydrocephalus
Research Articles on PTEN	**1.** Activation of nuclear PTEN by inhibition of Notch signaling induces G2/M cell cycle arrest in gastric cancer.
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