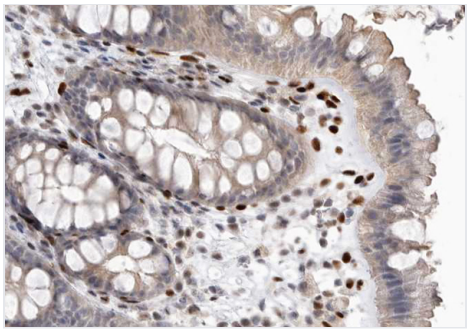
PTEN Antibody – Rabbit Polyclonal

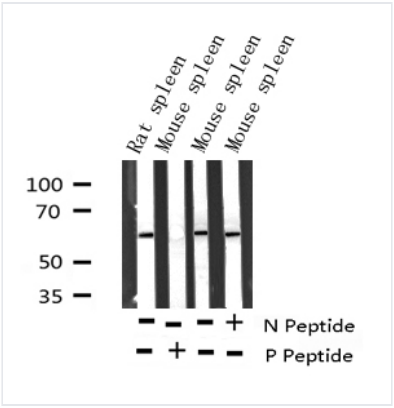
PRODUCT OVERVIEW

Product Name	PTEN, Polyclonal Antibody
Full Product Name	Phospho-PTEN (Ser370) Antibody
Product Gene Name	anti-PTEN antibody
Product Synonym Names	10q23del; BZS; DEC; GLM2; MGC11227; MHAM; MMAC1; MMAC1 phosphatase and tensin homolog deleted on chromosome 10; Mutated in multiple advanced cancers 1; Phosphatase and tensin homolog; Phosphatase and tensin like protein; Phosphatidylinositol 3, 4, 5-trisphosphate 3-phosphatase and dual-specificity protein phosphatase PTEN; Pten; PTEN_HUMAN; PTEN1; TEP1
Clonality	Polyclonal
Isotype	IgG
Host	Rabbit
Species Reactivity	Human, Mouse, Rat
Form/Format	Liquid Phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purity/Purification	From purified rabbit serum by affinity purification via sequential chromatography on phospho-and non-phospho-peptide affinity columns.
Concentration	1mg/ml (lot specific)
Specificity	Phospho-PTEN (Ser370) antibody detects endogenous levels of PTEN only when phosphorylated at Serine 370
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.
Antibody/Peptide Pairs	PTEN (Ser370) peptide (MBS9615703) is used for blocking the activity of PTEN (Ser370) antibody (MBS9601120)
Molecular Weight	Observed: 54 kDa Predicted: 48 kDa
3D Structure	ModBase 3D Structure for P60484
Supply Chain Verification	Manufactured in a lab with traceable raw materials manufactured on site. Coordinated product portfolio of antibodies, pairs, conjugates, recombinant proteins, and immunoassay materials available, please inquire.
Immunogen	A synthesized peptide derived from human PTEN around the phosphorylation site of Serine 370
Subcellular Location	Secreted. May be secreted via a classical signal peptide and reenter into cells with the help of a poly-Arg motif and Cytoplasm. Nucleus. Nucleus, PML Body. Monoubiquitinated form is nuclear. Nonubiquitinated form is cytoplasmic. Colocalized with PML and USP7 in PML nuclear bodies. XIAP/BIRC4 promotes its nuclear localization.
Tissue Specificity	Expressed at a relatively high level in all adult tissues, including heart, brain, placenta, lung, liver, muscle, kidney and pancreas.
Predicted Cross Reactivity	**Pig, Bovine, Horse, Rabbit, Dog, Chicken, Xenopus**
Similarity	Pig (100%), Bovine (100%), Horse (100%), Rabbit (100%), Dog (100%), Chicken (100%), Xenopus (100%)
Conjugation	Unconjugated
Epitope	Phospho Ser370
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.

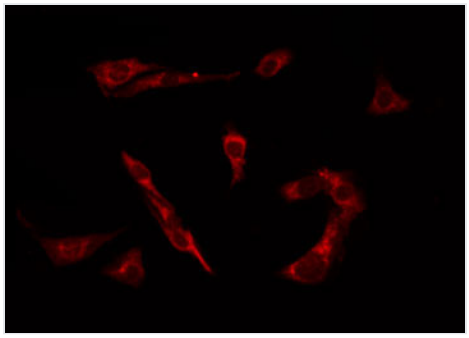
Applications Tested/Suitable for anti-PTEN antibody	Western Blot (WB), Immunohistochemisty (IHC), Immunofluorescence (IF), Immunocytochemistry (ICC), ELISA (EIA)
Application Notes for anti-PTEN antibody	WB: 1:500-1:2000 IHC: 1:50-1:200 IF/ICC: 1:100-1:500
Related Product Information for anti-PTEN antibody	Description: 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). 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). 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. Subunit Structure: Monomer. The unphosphorylated form interacts with the second PDZ domain of AIP1 and with DLG1 and MAST2 in vitro (PubMed:10646847, PubMed:10760291, PubMed:11707428). Interacts with MAGI2, MAGI3, MAST1 and MAST3, but neither with MAST4 nor with DLG5; interaction with MAGI2 increases protein stability (PubMed:10748157, PubMed:15951562). Interacts with NEDD4 (PubMed:17218260). Interacts with NDFIP1 and NDFIP2; in the presence of NEDD4 or ITCH, this interaction promotes PTEN ubiquitination (PubMed:25801959, PubMed:20534535). Interacts (via C2 domain) with FRK (PubMed:19345329). Interacts with USP7; the interaction is direct (PubMed:18716620). Interacts with ROCK1 (By similarity). Interacts with XIAP/BIRC4 (PubMed:19473982). Interacts with STK11; the interaction phosphorylates PTEN (PubMed:15987703). Interacts with PPP1R16B (PubMed:25007873). Interacts with NOP53; regulates PTEN phosphorylation and increases its stability (PubMed:15355975). Post-translational Modifications: Constitutively phosphorylated by CK2 under normal conditions. Phosphorylated in vitro by MAST1, MAST2, MAST3 and STK11. Phosphorylation results in an inhibited activity towards PIP3. Phosphorylation can both inhibit or promote PDZ-binding. Phosphorylation at Tyr-336 by FRK/PTK5 protects this protein from ubiquitin-mediated degradation probably by inhibiting its binding to NEDD4. Phosphorylation by ROCK1 is essential for its stability and activity. Phosphorylation by PLK3 promotes its stability and prevents its degradation by the proteasome. Monoubiquitinated; monoubiquitination is increased in presence of retinoic acid. Deubiquitinated by USP7; leading to its nuclear exclusion. Monoubiquitination of one of either Lys-13 and Lys-289 amino acid is sufficient to modulate PTEN compartmentalization. Ubiquitinated by XIAP/BIRC4. Similarity: The C2 domain binds phospholipid membranes in vitro in a Ca2+-independent manner; this binding is important for its tumor suppressor function.
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	MBS9601120 is an antibody targeting PTEN. Also known as Phospho-PTEN (Ser370) Antibody. Reactive in Human, Mouse, Rat. Host: Rabbit.



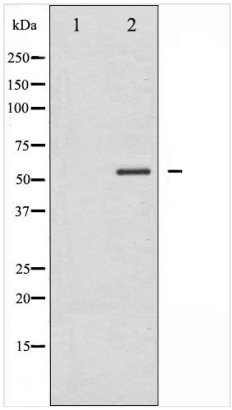
Immunohistochemistry (IHC) of anti-PTEN antibody
MBS9601120 at 1/200 staining human colon cancer tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary.



Western Blot (WB) of anti-PTEN antibody
Western blot analysis of Phospho-PTEN (Ser370) expression in various lysates



Immunofluorescence (IF) of anti-PTEN antibody
MBS9601120 staining HeLa by IF/ICC. The sample were fixed with PFA and permeabilized in 0.1% Triton X-100, then blocked in 10% serum for 45 minutes at 25 degree C. The primary antibody was diluted at 1/200 and incubated with the sample for 1 hour at 37 degree C. An Alexa Fluor 594 conjugated goat anti-rabbit IgG (H+L) Ab, diluted at 1/600, was used as the secondary antibody.



Western Blot (WB) of anti-PTEN antibody
Western blot analysis of PTEN phosphorylation expression in Vanadate treated HeLa whole cell lysates, The lane on the left is treated with the antigen-specific peptide.

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; PTENbeta
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
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	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). 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.
Research Articles on PTEN	**1.** miR-205 functions as an oncogenic miRNA by directly binding to SMAD4 and PTEN, providing a novel target for the molecular treatment of ovarian cancer.
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