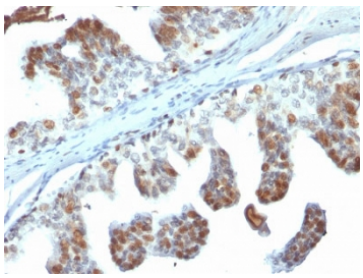
PTEN Antibody / Phosphatase and Tensin Homolog Antibody [clone PTEN/2110] (V3923)

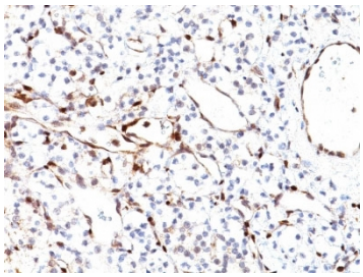
Catalog No.	Formulation	Size
V3923-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V3923-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V3923SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

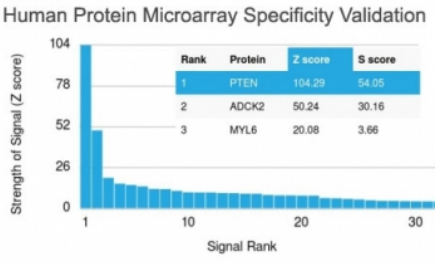
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG2b, kappa
Clone Name	PTEN/2110
Purity	Protein G affinity chromatography
UniProt	P60484
Localization	Cytoplasmic, nuclear
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT
Limitations	This PTEN Antibody / Phosphatase and Tensin Homolog Antibody is available for research use only.



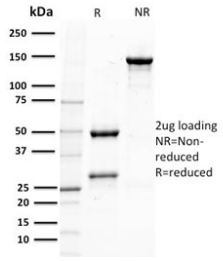
PTEN Antibody Human Prostate Cancer IHC. IHC staining of human prostate carcinoma tissue was performed with PTEN Antibody, clone PTEN/2110. Heat-induced epitope retrieval was performed by boiling tissue sections in 10 mM citrate buffer, pH 6.0, for 10-20 minutes, followed by cooling at room temperature for 20 minutes. Positive PTEN staining is observed in the carcinoma cells. This PTEN Antibody demonstrates detection and localization of phosphatase and tensin homolog in human prostate cancer tissue.



PTEN Antibody Human Renal Cell Carcinoma IHC. IHC staining of human renal cell carcinoma tissue was performed with PTEN Antibody, clone PTEN/2110. Heat-induced epitope retrieval was performed by boiling tissue sections in 10 mM citrate buffer, pH 6.0, for 10-20 minutes, followed by cooling at room temperature for 20 minutes. Positive PTEN staining is observed in tumor-associated cells within the renal carcinoma tissue. This PTEN Antibody demonstrates detection and localization of phosphatase and tensin homolog in human renal cell carcinoma.



PTEN Antibody Protein Microarray Specificity Validation. PTEN Antibody, clone PTEN/2110, was analyzed on a HuProt protein microarray containing more than 19,000 full-length human proteins. PTEN produced the highest-ranked signal, with a Z-score of 104.29 and S-score of 54.05, demonstrating strong target recognition and specificity. The Z-score represents signal strength in standard deviations above the mean signal across the array, while the S-score represents the difference between the Z-scores of consecutive ranked proteins and indicates relative target specificity. This Protein Microarray Validated PTEN Antibody demonstrates preferential recognition of phosphatase and tensin homolog among the human proteins represented on the array.



PTEN Antibody Purity and Integrity SDS-PAGE. SDS-PAGE analysis of purified, BSA-free PTEN Antibody, clone PTEN/2110, was performed under reducing (R) and non-reducing (NR) conditions with 2 ug of antibody loaded per lane. Under reducing conditions, bands corresponding to the immunoglobulin heavy and light chains are observed, while the non-reduced antibody migrates predominantly as intact immunoglobulin. This analysis confirms the integrity and purity of the purified PTEN/2110 monoclonal antibody preparation.

Description

PTEN Antibody / Phosphatase and Tensin Homolog Antibody detects PTEN, a major tumor suppressor and lipid phosphatase encoded by the PTEN gene on human chromosome 10. PTEN is a critical negative regulator of the phosphoinositide 3-kinase (PI3K)/AKT signaling pathway, which controls cellular growth, proliferation, metabolism and survival. Loss or functional impairment of PTEN can result in increased PI3K/AKT pathway activity and is associated with the development and progression of numerous cancers.

PTEN exerts a major portion of its tumor suppressor activity by dephosphorylating phosphatidylinositol (3,4,5)-trisphosphate (PIP3) to generate phosphatidylinositol (4,5)-bisphosphate (PIP2). This activity directly opposes PI3K-mediated signaling and limits recruitment and activation of downstream proteins such as AKT at the plasma membrane. Through this mechanism, PTEN helps regulate cell-cycle progression, apoptosis, protein synthesis, glucose metabolism and other processes influenced by PI3K/AKT signaling.

In addition to its well-established lipid phosphatase activity, PTEN has been linked to protein phosphatase activity and functions involving cell migration, adhesion, genomic stability and nuclear signaling. PTEN activity is regulated at several levels, including transcription, post-translational modification, protein-protein interactions and subcellular localization. Phosphorylation and other modifications can influence PTEN stability, catalytic activity and movement between cytoplasmic, membrane-associated and nuclear compartments. A PTEN Antibody can therefore be useful for investigating PTEN expression and localization in normal and disease-associated tissues.

PTEN is among the most frequently altered tumor suppressors in human cancer. Genetic mutation, deletion, epigenetic silencing and changes in protein regulation can contribute to reduced or absent PTEN function. PTEN abnormalities have been investigated in prostate, breast, endometrial, brain, colorectal and other cancers, where loss of PTEN activity may promote sustained proliferative and survival signaling. PTEN status is consequently studied both as an indicator of tumor

biology and in research examining responses to therapies targeting the PI3K/AKT/mTOR signaling network.

Beyond cancer, PTEN participates in developmental and physiological processes involving cell growth, neural function, metabolism and tissue homeostasis. Germline alterations affecting PTEN are associated with a spectrum of inherited disorders characterized by abnormal tissue growth and increased tumor susceptibility. These diverse biological roles make PTEN an important research target for understanding how signaling networks balance cellular proliferation and survival with growth suppression.

Clone PTEN/2110 is a mouse monoclonal antibody developed for recognition of PTEN and has been evaluated by immunohistochemistry and protein microarray analysis. Protein microarray validation provides an additional approach for assessing antibody-target recognition against a broad collection of recombinant human proteins. NSJ Bioreagents offers PTEN/2110 for research into PTEN expression and tumor suppressor biology. A Phosphatase and Tensin Homolog Antibody can support studies of PI3K/AKT signaling, cellular growth regulation, tumor biology and mechanisms associated with PTEN function.

Researchers studying PTEN loss and tumor suppressor signaling can explore our Cancer Marker Antibodies page for additional targets associated with cancer development, progression and cell signaling.

Application Notes

Optimal dilution of the PTEN Antibody / Phosphatase and Tensin Homolog Antibody should be determined by the researcher.

Immunogen

Full length human recombinant protein was used as the immunogen for this PTEN antibody.

Storage

Store the PTEN antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).

Alternate Names

PTEN antibody, Phosphatase and Tensin Homolog antibody, Phosphatase and Tensin Homolog Deleted on Chromosome 10 antibody, MMAC1 antibody, TEP1 antibody

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