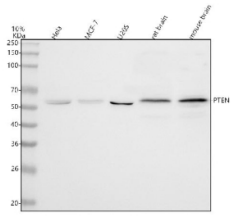
PTEN Antibody / Phosphatase and tensin (FY12369)

Catalog No.	Formulation	Size
FY12369	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P60484
Applications	Western Blot : 0.25-0.5ug/ml
Limitations	This PTEN antibody is available for research use only.



Western blot analysis of PTEN using anti-PTEN antibody. Lane 1: human Hela whole cell lysates, Lane 2: human MCF-7 whole cell lysates, Lane 3: human U20S whole cell lysates, Lane 4: rat brain tissue lysates, Lane 5: mouse brain tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-PTEN antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. Expected molecular weight: 47~55 kDa (isoform 1), 65~70 kDa ('long' isoform).

Description

The PTEN antibody targets Phosphatase and tensin homolog, a dual-specificity phosphatase encoded by the PTEN gene. This enzyme is one of the most frequently mutated tumor suppressors in human cancer and plays a crucial role in regulating cell growth, survival, and metabolism. Phosphatase and tensin homolog functions primarily as a lipid phosphatase, dephosphorylating phosphatidylinositol (3,4,5)-trisphosphate (PIP3) to phosphatidylinositol (4,5)-bisphosphate (PIP2), thereby antagonizing the PI3K-AKT signaling pathway. The PTEN antibody enables detection of this critical regulatory protein and supports research into tumor suppression, cell signaling, and metabolic control.

Phosphatase and tensin homolog acts at the plasma membrane to regulate signal transduction and control downstream kinases that drive proliferation and survival. Loss of PTEN function results in constitutive activation of AKT and mTOR pathways, leading to uncontrolled cell growth and oncogenesis. The PTEN antibody allows visualization of protein expression across tissues, facilitating analysis of its localization in both cytoplasmic and nuclear compartments. Nuclear PTEN has additional roles in maintaining chromosomal stability and DNA repair, expanding its tumor-suppressive functions beyond lipid dephosphorylation.

Mutations or deletions in the PTEN gene occur in many cancers, including glioblastoma, prostate, breast, and endometrial carcinomas. Germline PTEN mutations cause PTEN hamartoma tumor syndromes such as Cowden syndrome, characterized by benign and malignant tumor development. The PTEN antibody is widely used in diagnostic and research settings to assess expression loss and mutation effects in tumor samples. Detection of reduced PTEN levels by immunohistochemistry is an important indicator of dysregulated PI3K signaling and poor prognosis.

In addition to tumor suppression, Phosphatase and tensin homolog regulates cellular processes such as migration, apoptosis, and metabolism. It influences insulin signaling, oxidative stress response, and stem cell renewal. The PTEN antibody supports mechanistic studies into these diverse biological roles and enables quantification of protein abundance in cultured cells and tissue models. By revealing PTEN localization and activation states, this antibody provides insight into how phosphorylation, ubiquitination, or oxidation modulate its function under physiological and stress conditions.

NSJ Bioreagents supplies the PTEN antibody with validated specificity and reproducibility for applications including western blotting, immunofluorescence, and immunohistochemistry. It reliably detects endogenous PTEN across multiple species and cell lines. By supporting detailed examination of this key tumor suppressor, the PTEN antibody facilitates research into cell signaling, cancer biology, and therapeutic interventions aimed at restoring pathway balance and inhibiting tumor progression.

Application Notes

Optimal dilution of the PTEN antibody should be determined by the researcher.

Immunogen

A synthetic peptide corresponding to a sequence in the middle region of human PTEN was used as the immunogen for the PTEN antibody.

Storage

After reconstitution, the PTEN antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.