

DESCRIPTION

Species Reactivity	Human/Mouse/Rat
Specificity	Detects human, mouse, and rat PTEN in Western blots.
Source	Polyclonal Rabbit IgG
Purification	Antigen Affinity-purified
Immunogen	Human PTEN synthetic peptide Ser385-Val403 Accession # P60484
Conjugate	Alexa Fluor 750 Excitation Wavelength: 749 nm Emission Wavelength: 775 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide
*Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.	

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.

CyTOF-ready	Optimal dilution of this antibody should be experimentally determined.
Knockout Validated	Optimal dilution of this antibody should be experimentally determined.
Western Blot	Optimal dilution of this antibody should be experimentally determined.
Immunohistochemistry	Optimal dilution of this antibody should be experimentally determined.
Intracellular Staining by Flow Cytometry	Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

The tumor suppressor gene PTEN (phosphatase and tensin homolog deleted on chromosome 10), also known as MMAC1 (mutated in multiple advanced cancers 1), encodes a phosphatase that contains the catalytic signature motif (HCXXGXXRS/T) found in all members of the protein tyrosine phosphatase family. *In vitro*, the recombinant PTEN has both lipid phosphatase and protein phosphatase activities (1, 2). Interestingly, accumulating evidence has shown that the tumor suppressor activity of PTEN relies on its ability to dephosphorylate phosphatidylinositol (3, 4, 5)-triphosphate specifically at position 3 of the inositol ring (3). This activity reduces the levels of phosphatidylinositol (3, 4, 5)-triphosphate which is specifically produced from phosphatidylinositol (4, 5)-diphosphate by PI 3-kinase upon activation by a variety of stimuli. Therefore, PTEN antagonizes PI 3-kinase-induced downstream signaling events and cellular processes including cell growth, apoptosis and cell motility. *In vivo*, the importance of PTEN catalytic activity in its tumor suppressor functions is underscored by the fact that the majority of PTEN missense mutations detected in tumor specimens target the phosphatase domain and cause a loss in PTEN phosphatase activity (4).

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