

# **Human/Mouse PTEN Antibody**

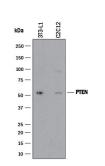
Recombinant Monoclonal Mouse IgG<sub>1</sub> Clone # 217702R Catalog Number: MAB847R

DESCRIPTION		
Species Reactivity	Human/Mouse	
Specificity	Detects human PTEN in direct ELISAs.	
Source	Recombinant Monoclonal Mouse IgG <sub>1</sub> Clone # 217702R	
Purification	Protein A or G purified from cell culture supernatant	
Immunogen	gen E. coli-derived recombinant human PTEN Thr2-Val403 Accession # P60484	
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.	

Please Note: Optimal dilutions should be determined by ea	ch laboratory for each application. General Protocols a	re available in the Technical Information section on our website.
	Recommended Concentration	Sample
Western Blot	2 μg/mL	3T3-L1 mouse embryonic fibroblast adipose-like cel line, C2C12 mouse myoblast cell line and mouse brain
Intracellular Staining by Flow Cytometry	0.25 μg/10 <sup>6</sup> cells	Human U937 histiocytic lymphoma cell line
Knockout Validated	PTEN is specifically detected in HeLa human cervical epithelial carcinoma parental cell line but is not detectable in PTEN knockout HeLa human cervical epithelial carcinoma cell line.	

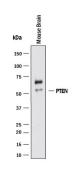
# Western Blot

DATA

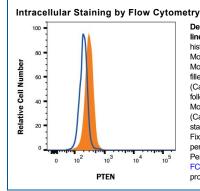


Detection of Mouse PTEN by Western Blot. Western blot shows lysates of 3T3-L1 mouse embryonic fibroblast adipose-like cell line and C2C12 mouse myoblast cell line. PVDF membrane was probed with 2 µg/mL of Mouse Anti-Human/Mouse PTEN Monoclonal Antibody (Catalog # MAB847R) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for PTEN at approximately 54 kDa (as indicated). This experiment was conducted under reducing conditions and using Western Blot Buffer Group 1.

### Western Blot

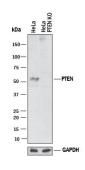


Detection of Mouse PTEN by Western Blot. Western blot shows lysates of mouse brain. PVDF membrane was probed with 2 µg/mL of Mouse Anti-Humann/Mouse PTEN Monoclonal Antibody (Catalog # MAB847R) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for PTEN at approximately 54 kDa (as indicated). This experiment was conducted under reducing conditions and using Western Blot Buffer Group 1.



Detection of PTEN in Human U937 cell line by Flow Cytometry. Human U937 histiocytic lymphoma cell line was stained with Mouse Anti-Human/Mouse PTEN Moncolonal Antibody (Catalog # MAB847R, filled histogram) or isotype control antibody (Catalog # MAB002, open histogram), followed by Phycoerythrin-conjugated Anti-Mouse IgG F(ab)2 Secondary Antibody (Catalog # F0102B). To facilitate intracellular staining, cells were fixed with Flow Cytometry Fixation Buffer (Catalog # F004) and permeabilized with Flow Cytometry Permeabilization/Wash Buffer I (Catalog # F005). Staining was performed using our protocol for Staining Intracellular Molecules.

## **Knockout Validated**



Western Blot Shows Human PTEN Specificity by Using Knockout Cell Line. Western blot shows lysates of HeLa human cervical epithelial carcinoma cell line and human PTEN knockout cell line. PVDF membrane was probed with 2 µg/mL of Mouse Anti-Human/Mouse PTEN Monoclonal Antibody (Catalog # MAB847R) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for PTEN at approximately 54 kDa (as indicated) in the parental HeLa human cervical epithelial carcinoma cell line, but is not detectable in knockout HeLa human cervical epithelial carcinoma cell line. GAPDH (Catalog # MAB5718) is shown as a loading control. This experiment was conducted under reducing conditions and using Western Blot Buffer Group 1.

Rev. 9/2/2021 Page 1 of 2





# **Human/Mouse PTEN Antibody**

Recombinant Monoclonal Mouse IgG<sub>1</sub> Clone # 217702R Catalog Number: MAB847R

PREPARATION AND STORAGE		
Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.	
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C	
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles.  12 months from date of receipt, -20 to -70 °C as supplied.  1 month, 2 to 8 °C under sterile conditions after reconstitution.  6 months, -20 to -70 °C under sterile conditions after reconstitution.	

## 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).

#### References:

- 1. Maehama, T. and J. Dixon (1998) J. Biol. Chem. 273:13375.
- 2. Das, S. et al. (2003) Proc. Natl. Acad. Sci. USA 100:7491.
- 3. Myers, M. et al. (1998) Proc. Natl. Acad. Sci. USA 95:13513.
- 4. Waite, K. and C. Eng (2002) Am. J. Hum. Genet. 70:829.

