



## PTEN (Ab-380/382/383) Antibody

#21056

**Catalog Number:** 21056-1, 21056-2

**Amount:** 50µg/50µl, 100µg/100µl

**Swiss-Prot No. :** P60484

**Form of Antibody:** Rabbit IgG in phosphate buffered saline (without Mg<sup>2+</sup> and Ca<sup>2+</sup>), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.

**Storage/Stability:** Store at -20°C/1 year

**Immunogen:** The antiserum was produced against synthesized non-phosphopeptide derived from human PTEN around the phosphorylation site of serine 380 and threonine 382/383 (R-Y-S<sub>P</sub>-D-T<sub>P</sub>T<sub>P</sub>-D-S).

**Purification:** The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen

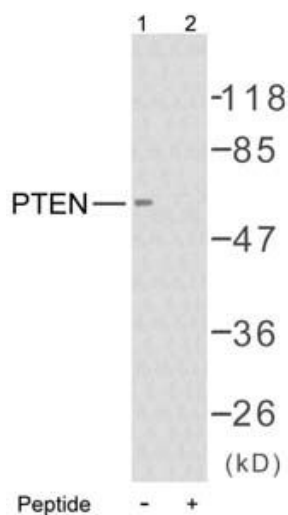
**Specificity/Sensitivity:** PTEN (Ab-380/382/383) antibody detects endogenous levels of total PTEN protein.

**Reactivity:** Human, Mouse, Rat

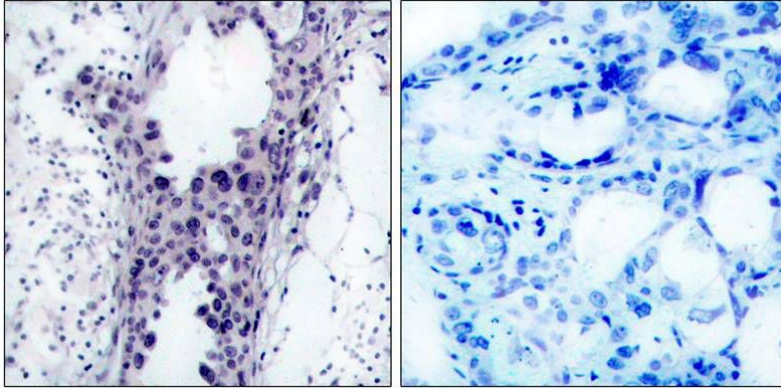
**Applications:**

Predicted MW: 54 kd

WB: 1:500~1:1000 IHC: 1:50~1:100



Western blot analysis of extracts from HT29 cells  
, using PTEN(Ab-380/382/383) antibody (#21056).



Peptide - +

Immunohistochemical analysis of paraffin- embedded human breast carcinoma tissue using PTEN (Ab-380/382/383) antibody (#21056).

### Background :

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  $\text{PtdIns}(3,4,5)\text{P}_3 > \text{PtdIns}(3,4)\text{P}_2 > \text{PtdIns}3\text{P} > \text{Ins}(1,3,4,5)\text{P}_4$ . 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.

### References:

- Al-Khouri AM, et al. (2005). J Biol Chem.280(42):35195-35202.  
Torres J, et al. (2001). J Biol Chem.276(2): 993-998.  
Vazquez F, et al. (2000). Mol Cell Biol.20(14): 5010-5018.