

**Mouse Anti-PTEN [6H2.1]: MC0356, MC0356RTU7**

**Intended Use:** For Research Use Only

**Description:** PTEN (phosphatase and tensin homolog deleted on chromosome ten) is a tumor suppressor gene that is mutated in a wide range of cancers. PTEN is located on chromosome sub-band 10q23.3 and encodes a 403 amino acid protein which acts as a dual-specific protein and phospholipid phosphatase. As a lipid phosphatase, PTEN regulates phosphatidylinositol-3'-kinase by dephosphorylating the D3 position of phosphatidylinositol (3,4,5)-triphosphate and phosphatidylinositol (3,4)-bisphosphate substrates, thereby antagonizing signal transduction downstream of phosphatidylinositol-(PI-3) kinase.<sup>7</sup> Loss-of-function mutations in the PTEN gene lead to constitutive activation of multiple signaling pathways including the PI3K/Akt pathway which affects cell proliferation, apoptosis and migration. PTEN has also been shown to control p53 protein levels and transcriptional activity.

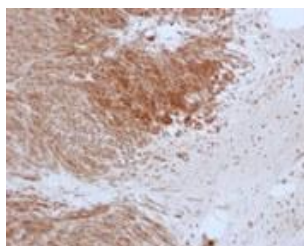
**Specifications**

Clone: 6H2.1  
Source: Mouse  
Isotype: IgG2a/k  
Reactivity: Human  
Localization: Nucleus  
Formulation: Antibody in PBS, pH7.4, containing BSA and  $\leq 0.09\%$  sodium azide (NaN<sub>3</sub>)  
Storage: Store at 2°- 8°C  
Applications: IHC  
Package:

Description	Catalog No.	Size
PTEN Concentrated	MC0356	1 ml
PTEN Prediluted	MC0356RTU7	7 ml

**IHC Procedure\***

Positive Control Tissue: Breast, prostate, liver, renal carcinoma  
Concentrated Dilution: 25-100  
Pretreatment: Citrate pH6.0 or EDTA pH8.0, 15 minutes using Pressure Cooker, or 30-60 minutes using water bath at 95°-99°C  
Incubation Time and Temp: 30-60 minutes @ RT  
Detection: Refer to the detection system manual  
\* Result should be confirmed by an established diagnostic procedure.



FFPE human GIST tissue stained with anti-PTEN using DAB

**References:**

1. Best practice for PTEN gene and protein assessment in anatomic pathology. Carvalho KC, et al. Acta Histochem. 2013 Jun 5. pii: S0065-1281(13)00085-8.
2. Pathologic scoring of PTEN immunohistochemistry in endometrial carcinoma is highly reproducible. Garg K, et al. Int J Gynecol Pathol. 2012 Jan;31(1):48-56.
3. Identification of a Subset of Human Non-Small Cell Lung Cancer Patients with High PI3K $\beta$  and Low PTEN Expression, more prevalent in SCC. Cumberbatch M, et al. Clin Cancer Res. 2013 Nov 27.
4. PTEN, pAKT, and pmTOR expression and subcellular distribution in primary renal cell carcinomas and their metastases. Hager M, et al. Cancer Invest. 2011 Aug;29(7):427-38.
5. Tumor suppression by PTEN requires the activation of the PKR-eIF2 $\alpha$  phosphorylation pathway. Mounir Z, et al. Sci Signal. 2009 Dec 22;2(102):ra85.

Doc. 100-MC0356  
Rev. A