

Anti-PTEN antibody [EPR9941] ab154812

敲除验证 重组 RabMAb

★★★★☆ 1 Abreviews 11 References 6 图像

概述

产品名称	Anti-PTEN抗体[EPR9941]
描述	兔单克隆抗体[EPR9941] to PTEN
宿主	Rabbit
经测试应用	适用于: WB
种属反应性	与反应: Mouse, Rat, Human
免疫原	Recombinant full length protein corresponding to Human PTEN.
阳性对照	HeLa, MCF7, 293T and A431 cell lysates; Human breast carcinoma tissue and Human colon tissue; Mouse brain Lysate and Rat brain Lysate
常规说明	<p>This product is a recombinant monoclonal antibody, which offers several advantages including:</p> <ul style="list-style-type: none">- High batch-to-batch consistency and reproducibility- Improved sensitivity and specificity- Long-term security of supply- Animal-free production <p>For more information see here.</p> <p>Our RabMAb[®] technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb[®] patents.</p>

性能

形式	Liquid
存放说明	Shipped at 4°C. Store at -20°C.
存储溶液	Preservative: 0.01% Sodium azide Constituents: 40% Glycerol (glycerin, glycerine), 0.05% BSA, 59% PBS
纯度	Protein A purified
克隆	单克隆
克隆编号	EPR9941
同种型	IgG

应用

The Abpromise guarantee **Abpromise™**承诺保证使用ab154812于以下的经测试应用

“应用说明”部分 下显示的仅为推荐的起始稀释度;实际最佳的稀释度/浓度应由使用者检定。

应用	Ab评论	说明
WB		1/1000 - 1/10000. Predicted molecular weight: 47 kDa. For unpurified use at 1/40.

靶标

功能

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. In motile cells, suppresses the formation of lateral pseudopods and thereby promotes cell polarization and directed movement.

Isoform alpha: Functional kinase, like isoform 1 it antagonizes the PI3K-AKT/PKB signaling pathway. Plays a role in mitochondrial energetic metabolism by promoting COX activity and ATP production, via collaboration with isoform 1 in increasing protein levels of PINK1.

组织特异性

Expressed at a relatively high level in all adult tissues, including heart, brain, placenta, lung, liver, muscle, kidney and pancreas.

疾病相关

Cowden syndrome 1
Lhermitte-Duclos disease
Bannayan-Riley-Ruvalcaba syndrome
Squamous cell carcinoma of the head and neck
Endometrial cancer
PTEN mutations are found in a subset of patients with Proteus syndrome, a genetically heterogeneous condition. The molecular diagnosis of PTEN mutation positive cases classifies Proteus syndrome patients as part of the PTEN hamartoma syndrome spectrum. As such, patients surviving the early years of Proteus syndrome are likely at a greater risk of developing malignancies.

Glioma 2
VACTERL association with hydrocephalus
Prostate cancer
Macrocephaly/autism syndrome
A microdeletion of chromosome 10q23 involving BMP1A and PTEN is a cause of chromosome

10q23 deletion syndrome, which shows overlapping features of the following three disorders: Bannayan-Zonana syndrome, Cowden disease and juvenile polyposis syndrome.

序列相似性

Contains 1 C2 tensin-type domain.

Contains 1 phosphatase tensin-type domain.

结构域

The C2 domain binds phospholipid membranes in vitro in a Ca(2+)-independent manner; this binding is important for its tumor suppressor function.

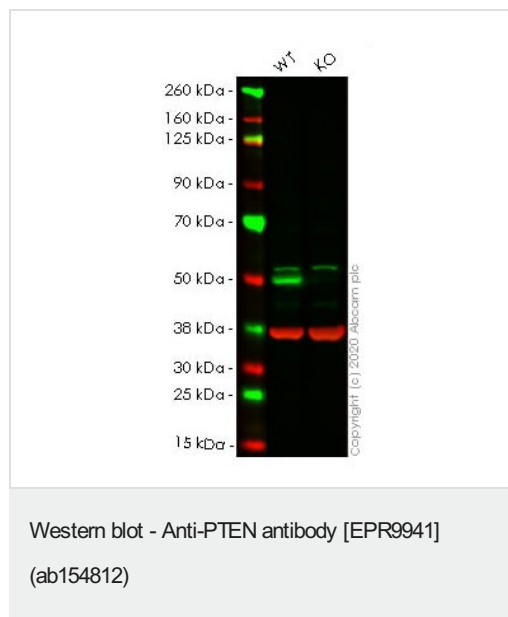
翻译后修饰

Constitutively phosphorylated by CK2 under normal conditions. Phosphorylated in vitro by MAST1, MAST2, MAST3 and STK11. Phosphorylation results in an inhibited activity towards PIP3. Phosphorylation can both inhibit or promote PDZ-binding. Phosphorylation at Tyr-336 by FRK/PTK5 protects this protein from ubiquitin-mediated degradation probably by inhibiting its binding to NEDD4. Phosphorylation by ROCK1 is essential for its stability and activity. Phosphorylation by PLK3 promotes its stability and prevents its degradation by the proteasome. Monoubiquitinated; monoubiquitination is increased in presence of retinoic acid. Deubiquitinated by USP7; leading to its nuclear exclusion. Monoubiquitination of one of either Lys-13 and Lys-289 amino acid is sufficient to modulate PTEN compartmentalization. Ubiquitinated by XIAP/BIRC4.

细胞定位

Secreted. May be secreted via a classical signal peptide and reenter into cells with the help of a poly-Arg motif and Cytoplasm. Nucleus. Nucleus, PML body. Monoubiquitinated form is nuclear. Nonubiquitinated form is cytoplasmic. Colocalized with PML and USP7 in PML nuclear bodies. XIAP/BIRC4 promotes its nuclear localization.

图片



All lanes : Anti-PTEN antibody [EPR9941] (ab154812) at 1/10000 dilution

Lane 1 : Wild-type HeLa cell lysate

Lane 2 : PTEN knockout HeLa cell lysate

Lysates/proteins at 20 µg per lane.

Performed under reducing conditions.

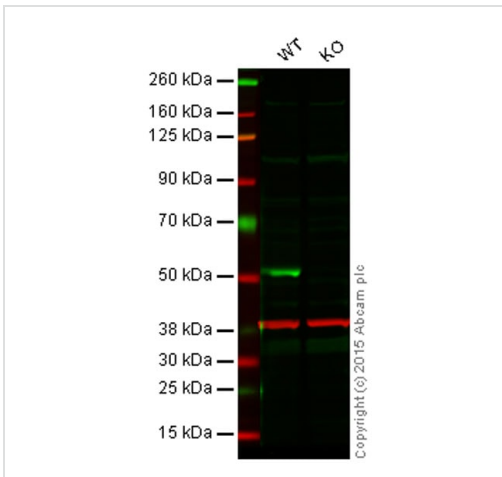
Predicted band size: 47 kDa

Observed band size: 47 kDa

Lanes 1-2: Merged signal (red and green). Green - ab154812 observed at 47 kDa. Red - Anti-GAPDH antibody [6C5] - Loading Control (**ab8245**) observed at 37 kDa.

ab154812 was shown to react with PTEN in wild-type HeLa cells in western blot. Loss of signal was observed when knockout cell line **ab255419** (knockout cell lysate **ab263829**) was used. Wild-type HeLa and PTEN knockout HeLa cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room

temperature in 0.1% TBST with 3% non-fat dried milk. ab154812 and Anti-GAPDH antibody [6C5] - Loading Control ([ab8245](#)) overnight at 4°C at a 1 in 10000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye®800CW) preadsorbed ([ab216773](#)) and Goat anti-Mouse IgG H&L (IRDye®680RD) preadsorbed ([ab216776](#)) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.



Western blot - Anti-PTEN antibody [EPR9941] (ab154812)

All lanes : Anti-PTEN antibody [EPR9941] (ab154812) at 1/1000 dilution

Lane 1 : Wild-type HAP1 cell lysate

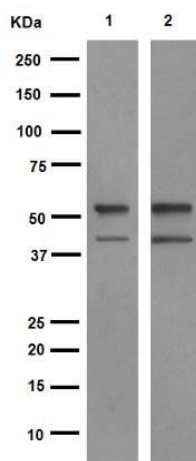
Lane 2 : PTEN knockout HAP1 cell lysate

Lysates/proteins at 20 µg per lane.

Predicted band size: 47 kDa

Lanes 1 and 2: Merged signal (red and green). Green - ab154812 observed at 51 kDa. Red - loading control, [ab8245](#), observed at 37 kDa.

ab154812 was shown to specifically recognize PTEN in wild-type HAP1 cells. No band was observed when PTEN knockout samples were used. Wild-type and PTEN knockout samples were subjected to SDS-PAGE, ab154812 and [ab8245](#) (loading control to GAPDH) were diluted 1/1000 and 1/2000 respectively and incubated overnight at 4°C. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed ([ab216773](#)) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed ([ab216776](#)) secondary antibodies at 1/10,000 dilution for 1hr at room temperature before imaging.



Western blot - Anti-PTEN antibody [EPR9941]
(ab154812)

All lanes : Anti-PTEN antibody [EPR9941] (ab154812) at 1/1000 dilution

Lane 1 : Mouse brain Lysate

Lane 2 : Rat brain Lysate

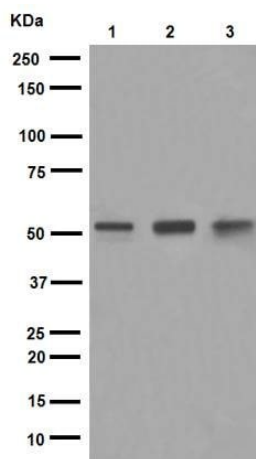
Lysates/proteins at 10 µg per lane.

Secondary

All lanes : Goat Anti-Rabbit IgG, (H+L), HRP- conjugated at 1/1000 dilution

Predicted band size: 47 kDa

Observed band size: 54 kDa



Western blot - Anti-PTEN antibody [EPR9941]
(ab154812)

All lanes : Anti-PTEN antibody [EPR9941] (ab154812) at 1/1000 dilution

Lane 1 : HeLa cell Lysate

Lane 2 : Neuro-2a cell Lysate

Lane 3 : Rat spleen cell Lysate

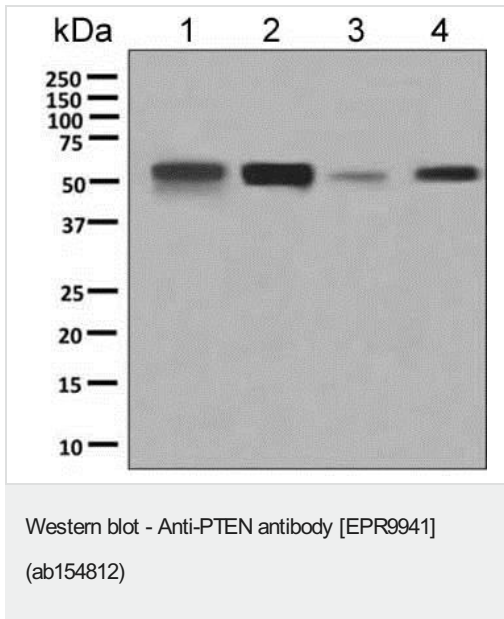
Lysates/proteins at 10 µg per lane.

Secondary

All lanes : Goat Anti-Rabbit IgG, (H+L), HRP- conjugated at 1/1000 dilution

Predicted band size: 47 kDa

Observed band size: 54 kDa



All lanes : Anti-PTEN antibody [EPR9941] (ab154812) at 1/1000 dilution (unpurified)

Lane 1 : HeLa cell lysate

Lane 2 : MCF7 cell lysate

Lane 3 : 293T cell lysate

Lane 4 : A431 cell lysate





Lysates/proteins at 10 µg per lane.

Secondary

All lanes : Goat anti-rabbit HRP at 1/2000 dilution

Predicted band size: 47 kDa

Why choose a recombinant antibody?

 <p>Research with confidence Consistent and reproducible results</p>	 <p>Long-term and scalable supply Recombinant technology</p>
 <p>Success from the first experiment Confirmed specificity</p>	 <p>Ethical standards compliant Animal-free production</p>

Anti-PTEN antibody [EPR9941] (ab154812)

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

Our Abpromise to you: Quality guaranteed and expert technical support

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours
- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit <https://www.abcam.cn/abpromise> or contact our technical team.

Terms and conditions

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors