BOSTER BIOLOGICAL TECHNOLOGY
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Anti-PTEN Antibody Picoband®

Catalog Number: PB9385

About PTEN

PTEN is also known as BZS, DEC, CWS1, GLM2, MHAM, TEP1, PTEN1. It is mapped to 10q23.3. This gene was identified as a tumor suppressor that is mutated in a large number of cancers at high frequency. The protein encoded by this gene is a phosphatidylinositol-3,4,5-trisphosphate 3-phosphatase. It contains a tensin like domain as well as a catalytic domain similar to that of the dual specificity protein tyrosine phosphatases. Unlike most of the protein tyrosine phosphatases, this protein preferentially dephosphorylates phosphoinositide substrates. The PTEN structure reveals a phosphatase domain that is similar to protein phosphatases but also has an enlarged active site important for the accommodation of the phosphoinositide substrate.

Overview

Product Name	Anti-PTEN Antibody Picoband®
Reactive Species	Human, Rat
Description	Boster Bio Anti-PTEN Antibody Picoband® catalog # PB9385. Tested in WB applications. This antibody reacts with Human, Rat. The brand Picoband indicates this is a premium antibody that guarantees superior quality, high affinity, and strong signals with minimal background in Western blot applications. Only our best-performing antibodies are designated as Picoband, ensuring unmatched performance.
Application	WB
Clonality	Polyclonal
Formulation	Each vial contains antibody formulated with stabilizing components, 0.9 mg NaCl, 0.2 mg Na2HPO4, and 0.05 mg NaN3. *This antibody is supplied in a stabilized formulation. Compatibility with conjugation reactions depends on the chemistry of the conjugation method used. For conjugation methods that are not compatible with the stabilizing components present in this formulation, a carrier-free antibody format is required.
Storage Instructions	Store at -20˚C for one year from date of receipt. After reconstitution, at 4˚C for one month. It can also be aliquotted and stored frozen at -20˚C for six months. Avoid repeated freeze-thaw cycles.
Host	Rabbit
Uniprot ID	P60484

Technical Details

Immunogen	E.coli-derived human PTEN recombinant protein (Position: E91-V403). Human PTEN shares 99.7% amino acid (aa) sequence identity with mouse PTEN.
Recommended Detection Systems	Boster recommends Enhanced Chemiluminescent Kit with anti-Rabbit IgG (EK1002) for Western

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	blot.
Cross Reactivity	No cross-reactivity with other proteins.
Isotype	Rabbit IgG
Form	Lyophilized
Concentration	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml.
Purification	Immunogen affinity purified.
Suggested Dilutions	Western blot, 0.1-0.5ug/ml, Rat, Human

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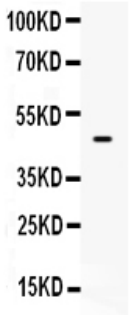
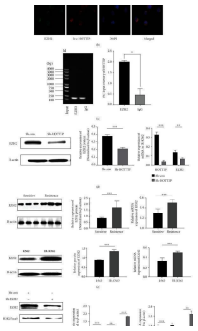
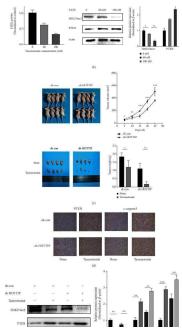
Anti-PTEN Antibody Picoband® (PB9385) Images



Anti-PTEN Picoband antibody, PB9385, Western blottingAll lanes: Anti PTEN (PB9385) at 0.5ug/mlWB: Rat Brain Tissue Lysate at 50ugPredicted bind size: 47KDObserved bind size: 47KD



HOTTIP regulates EZH2 to inhibit PTEN expression. Note: (a) catRAPID predicted binding region of HOTTIP and EZH2. (b) FISH analyzed the localization of EZH2 and HOTTIP in IR-K562 cells. (c) RIP-PCR were used to test the interaction between EZH2 and HOTTIP. ∗ p < 0.05 vs. IgG. (d) RT-qPCR and Western blot were used to measure EZH2 mRNA and protein level after knocking down HOTTIP. (e) Western blot analysis was used to measure EZH2 in BM-MNCs of CML patients. Right panel, bar chart of protein densitometric analysis. ∗∗∗ p < 0.001. RT-qPCR was used to detect EZH2 level in BM-MNCs of CML patients. Normalized to GAPDH. ∗∗∗ p < 0.001 vs. NC. Western blot analysis was used to measure EZH2 protein level in IR-K562 and K562 cells. Right panel, bar chart of protein densitometric analysis. ∗∗∗ p < 0.001; RT-qPCR was used to detect EZH2 mRNA level in CML cell lines (K562 and IR-K562). Normalized to GAPDH. ∗∗∗ P < 0.001 vs. NC. (f) RT-qPCR and Western blot were used to detect EZH2 and PTEN mRNA and protein levels after transfecting with specific sh-con or sh-EZH2. ∗∗∗ P < 0.001 vs. DMSO.Index in PubMed under a CC BY license. PMID: 36117724



The effect of HOTTIP on CML cell in vivo. Note: (a) Tazemetostat drug structure. (b) Analysis of H3K27me3. PTEN expression in IR-K562 cells treated by Tazemetostat with different concentrations for 48 h. ∗∗∗ p < 0.001 vs. DMSO. (c) IR-K562 cells were engineered to stably knock down HOTTIP, and the cells were then subcutaneously injected into the nude mice to establish CML xenograft tumors. Tumor volumes were monitored by direct measurement. ∗ p < 0.05, ∗∗ p < 0.01, and ∗∗∗ P < 0.001 vs.sh-con. Representative tumor sizes of xenograft mice in each group. The xenograft tumor wet weight in each group of mice. ∗ p < 0.05, ∗∗ P < 0.01 vs. sh-con. (d) Immunohistochemistry stain was used to measure the PTEN, c-caspase3 protein levels in xenograft tumors. (e) Western blot was used to detect the H3K27me3, PTEN, and c-caspase3 protein levels in xenograft tumors.Index in PubMed under a CC BY license. PMID: 36117724

miR-21 effect of on PTEN expression in CSCs. Cultured CSCs

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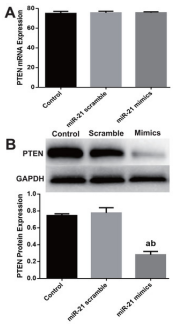
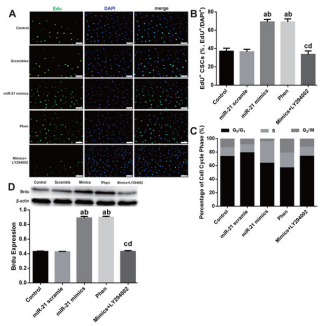
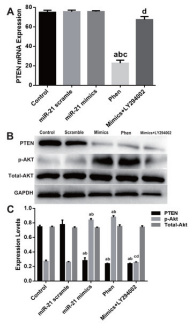


were treated with miR-21 mimics or its negative control scramble for 48 h, then cells were harvested and subjected to RT-PCR or Western blot. PTEN mRNA of Control, scramble treated or miR-21 mimics treated CSCs showed no significant difference (A), but PTEN protein dramatically decreased after miR-21 mimics treatment (B). a, P



PTEN/PI3K/Akt pathway's contribution in miR-21 induced proliferation in c-kit + CSCs. Cultured c-kit + CSCs were treated with miR-21 mimics for 48 h before subjected to EdU immunofluorescence (A–B), flow cytometry (C) or Western blot (D). To test the contribution of PTEN/PI3K/Akt signaling, PTEN and PI3K were inhibited with Phen or LY294002 respectively. (A) c-kit + CSCs were double stained by EdU (green) and DAPI (blue), and observed under a fluorescence microscope (Olympus). Bar = 50 μm. DAPI = propidium iodide. (B) The statistics of EdU positive CSCs from immunofluorescence in (A). n = 6 in each group. (C) Flow cytometry was employed to detect cell cycle profiles in CSCs underwent different treatments miR-21 mimics or Phen increased the proportion of S phase CSCs compared with Control or scramble treated groups. n = 3. (D) PTEN/PI3K/Akt pathway's influences on BrdU expression, which was detected with immune blotting. Just like miR-21 mimics' effect on BrdU, when PTEN was inhibited by Phen, there was notably increase of BrdU compared with Normal or Scramble group. When PI3K was inhibited by LY294002, there was notably decrease of BrdU in mimics+LY294002 group compared with mimics group in CSCs. n = 3 in each group. a, P



Expression change of PTEN/PI3K/Akt pathway in the process of miR-21 mimics induced proliferation in c-kit + CSCs. Cultured CSCs were treated with miR-21 mimics for 48 h before the subsequent procedures. To test the contribution of PTEN/PI3K/Akt signaling to miR-21 mimics's pro-proliferation effects in c-kit + CSCs, PTEN and PI3K were inhibited with Phen or LY294002 respectively. (A) RT-PCR was carried out to detect miR-21 mimics's effects on PTEN expression at the mRNA level, which showed no change between Control, miR-21 scramble, miR-21 mimics and miR-21 mimics+ LY294002 group, while Phen resulted in a significant down-regulation of PTEN compared with the other groups. (B–C) Western blot was carried out to detect miR-21 mimics's effects on PTEN protein expression, which showed that miR-21 mimics significantly down-regulated PTEN protein in miR-21 mimics group compared with the scramble group. In addition, both Phen treatment and miR-21 mimics incubation increased p-Akt level, while PI3K inhibitor LY294002 decreased p-Akt level dramatically (P

16 Publications Citing This Product

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1. PubMed ID: 31614022, Sun M,Hu L, S,Huang T,Zhang M,Yang M,Zhen W,Yang D,Lu W,Guan M,Peng S. Circulating MicroRNA-19b Identified From Osteoporotic Vertebral Compression Fracture Patients Increases Bone Formation. J Bone Miner Res.2020 Feb;35(2):306-316. doi:10.1002/jbmr.3892.

2. PubMed ID: 26936292, miR-223 reverses the resistance of EGFR-TKIs through IGF1R/PI3K/Akt signaling pathway

3. PubMed ID: 25395712, Li W, Wu D, Wei B, Wang S, Sun H, Li X, Zhang F, Zhang C, Xin Y. Afr J Tradit Complement Altern Med. 2014 Aug 23;11(5):99-104. Ecollection 2014. Anti-Tumor Effect Of Cactus Polysaccharides On Lung Squamous Carcinoma Cells (Sk-Mes-1).

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Anti-PTEN Antibody

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