SANTA CRUZ BIOTECHNOLOGY, INC.

p-PTEN (H-3): sc-377573

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

As human tumors progress to advanced stages, one genetic alteration that occurs at high frequency is a loss of heterozygosity (LOH) at chromosome 10q23. Mapping of homozygous deletions on this chromosome led to the isolation of the PTEN gene, also designated MMAC1 (for mutated in multiple advanced cancers) and TEP1. This candidate tumor suppressor gene exhibits a high frequency of mutations in human glioblastomas and is also mutated in other cancers, including sporadic brain, breast, kidney and prostate cancers. PTEN has been associated with Cowden disease, an autosomal dominant cancer predisposition syndrome. The PTEN gene product is a putative protein tyrosine phosphatase that is localized to the cytoplasm, and it shares extensive homology with the cytoskeletal proteins tensin and auxilin. Gene transfer studies have indicated that the phosphatase domain of PTEN is essential for growth suppression of glioma cells. PTEN contains five major phosphorylation sites and these are all located in the C-terminal 50-amino acid tail region (Ser 370, Ser 380, Thr 382, Thr 383, and Ser 385) and have been implicated in controlling PTEN activity.

REFERENCES

1. Bigner, S.H., et al. 1988. Specific chromosomal abnormalities in malignant human gliomas. Cancer Res. 48: 405-411.
2. James, C.D., et al. 1988. Clonal genomic alterations in glioma malignancy stages. Cancer Res. 48: 5546-5551.
3. Steck, P.A., et al. 1997. Identification of a candidate tumour suppressor gene, MMAC1, at chromosome 10q23.3 that is mutated in multiple advanced cancers. Nat. Genet. 15: 356-362.

CHROMOSOMAL LOCATION

Genetic locus: PTEN (human) mapping to 10q23.31; Pten (mouse) mapping to 19 C1.

SOURCE

p-PTEN (H-3) is a mouse monoclonal antibody raised against a short amino acid sequence containing Ser 380 phosphorylated PTEN of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p-PTEN (H-3) is available conjugated to agarose (sc-377573 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-377573 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377573 PE), fluorescein (sc-377573 FITC), Alexa Fluor® 488 (sc-377573 AF488), Alexa Fluor® 546 (sc-377573 AF546), Alexa Fluor® 594 (sc-377573 AF594) or Alexa Fluor® 647 (sc-377573 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377573 AF680) or Alexa Fluor® 790 (sc-377573 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

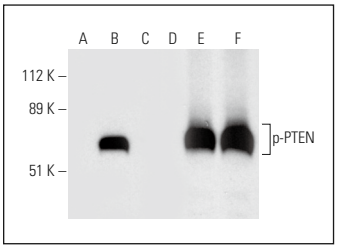
p-PTEN (H-3) is recommended for detection of Ser 380 phosphorylated PTEN of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

p-PTEN (H-3) is also recommended for detection of correspondingly phosphorylated PTEN in additional species, including canine, porcine and avian.

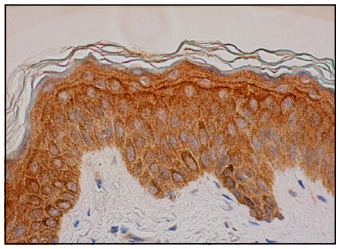
Suitable for use as control antibody for PTEN siRNA (h): sc-29459, PTEN siRNA (m): sc-36326, PTEN shRNA Plasmid (h): sc-29459-SH, PTEN shRNA Plasmid (m): sc-36326-SH, PTEN shRNA (h) Lentiviral Particles: sc-29459-V and PTEN shRNA (m) Lentiviral Particles: sc-36326-V.

Molecular Weight of p-PTEN: 55 kDa.

DATA



Western blot analysis of PTEN phosphorylation in non-transfected: sc-117752 (**A**,**D**), untreated mouse PTEN transfected: sc-122834 (**B**,**E**) and lambda protein phosphatase (sc-200312A) treated mouse PTEN transfected: sc-122834 (**C**,**F**) 293T whole cell lysates. Antibodies tested include p-PTEN (H-3): sc-377573 (**A**,**B**,**C**) and PTEN (N-19): sc-6818 (**D**,**E**,**F**).



p-PTEN (H-3): sc-377573. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing cytoplasmic staining of keratinocytes, Langerhans cells and melanocytes.

SELECT PRODUCT CITATIONS

1. Furtado, C.M., et al. 2015. Phosphatidylinositol-3-kinase as a putative target for anticancer action of clotrimazole. Int. J. Biochem. Cell Biol. 62: 132-141.
2. Zhang, Y., et al. 2022. Electroacupuncture activates neuroplasticity in the motor cortex and corticospinal tract via the mTOR pathway in a rat p-MCAO model. Biomed Res. Int. 2022: 3470685.
3. Marino, Y., et al. 2023. Analysis of the influence of IL-6 and the activation of the Jak/Stat3 pathway in fibromyalgia. Biomedicines 11: 792.
4. Yoo, M.J., et al. 2024. Synergistic anti-cancer effects of ERB-041 and genistein through estrogen receptor suppression-mediated PI3K/AKT pathway downregulation in canine mammary gland tumor cells. Int. J. Mol. Sci. 25: 2466.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.