SANTA CRUZ BIOTECHNOLOGY, INC.

PTEN (F-1): sc-393186

BACKGROUND

As human tumors progress to advanced stages, one genetic alteration that occurs at high frequency is a loss of heterozygosity (LOH) at chromosome 10q23.31. 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 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.

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.

CHROMOSOMAL LOCATION

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

SOURCE

PTEN (F-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 3-29 at the N-terminus of 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.

PTEN (F-1) is available conjugated to agarose (sc-393186 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393186 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393186 PE), fluorescein (sc-393186 FITC), Alexa Fluor® 488 (sc-393186 AF488), Alexa Fluor® 546 (sc-393186 AF546), Alexa Fluor® 594 (sc-393186 AF594) or Alexa Fluor® 647 (sc-393186 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393186 AF680) or Alexa Fluor® 790 (sc-393186 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393186 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

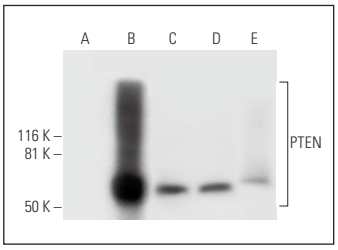
PTEN (F-1) is recommended for detection of PTEN of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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).

PTEN (F-1) is also recommended for detection of PTEN in additional species, including equine, canine, bovine, porcine and avian.

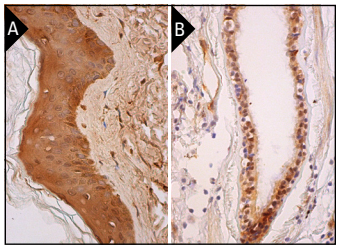
Suitable for use as control antibody for PTEN siRNA (h): sc-29459, PTEN siRNA (m): sc-36326, sc-61873PTEN shRNA Plasmid (h): sc-29459-SH, PTEN shRNA Plasmid (m): sc-36326-SH, PTEN shRNA (h) Lentiviral Particles: sc-29459-V and PTEN shRNA (m) Lentiviral Particles: sc-36326-V.

Molecular Weight of PTEN: 55 kDa.

DATA



PTEN (F-1): sc-393186. Western blot analysis of PTEN expression in non-transfected 293T: sc-117752 (**A**), mouse PTEN transfected 293T: sc-122834 (**B**), WI-38 (**C**) and MCF7 (**D**) whole cell lysates and human hippocampus tissue extract (**E**).



PTEN (F-1): sc-393186. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing cytoplasmic and nuclear staining of keratinocytes, fibroblasts, Langerhans cells and melanocytes (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human bronchus tissue showing cytoplasmic and nuclear staining of respiratory epithelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Li, X., et al. 2016. Triptolide reduces proliferation and enhances apoptosis of human non-small cell lung cancer cells through PTEN by targeting miR-21. Mol. Med. Rep. 13: 2763-2768.
2. Yu, Y., et al. 2021. Tissue distribution and developmental changes of PTEN in the immune organs of chicken and effect of IBDV infection on it. Poult. Sci. 100: 101356.
3. Shen, C., et al. 2021. The E3 ubiquitin ligase component, Cereblon, is an evolutionarily conserved regulator of Wnt signaling. Nat. Commun. 12: 5263.
4. Abdel-Rafei, M.K., et al. 2021. Canagliflozin, a SGLT-2 inhibitor, relieves ER stress, modulates autophagy and induces apoptosis in irradiated Hep G2 cells: signal transduction between PI3K/Akt/GSK-3β/mTOR and Wnt/β-catenin pathways; *in vitro*. J. Cancer Res. Ther. 17: 1404-1418.

RESEARCH USE

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