

Active Recombinant Human Phosphatase And Tensin Homolog

Cat. No. PTEN-1094H **Lot. No.** (See product label)

SPECIFICATION

Product Overview

Species	Human
Source	Sf21 Cells
Description	PTEN is one of the most frequently mutated tumor suppressors in human cancer. PTEN is a dual-specificity phosphatase with both protein phosphatase and lipid phosphatase activity. It is the first phosphatase identified as a tumor suppressor. It may be involved in almost all types of cancer, both solid tumors and hematological malignancies. The best described substrate of PTEN is phosphatidylinositol (3,4,5)-tris-phosphate (PtdIns (3,4,5) P3). PTEN removes the phosphate in PtdIns (3,4,5) P3 to generate PtdIns (4,5) P2 and serves to counter-balance the effects of PI3 Kinase, which normally generate PtdIns (3,4,5) P3). PTEN regulate the signaling pathway of PI3 Kinases by preventing localization of proteins with pleckstrin homology domains to the cell membrane.
Application	20 µM substrate (FDP), 50 mM imidazole pH 7.2, 200 µM EGTA, 0.02% mercaptoethanol, 5 mM MgCl ₂ and 0.1 mg/ml BSA at 37°C.
Usage	For in vitro use only.
Form	Liquid. Supplied in 20 mM Tris-HCl pH 8.0, 100 mM KCl, 0.2 mM EDTA, 1 mM DTT and 20% glycerol.

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Activity	1 µg of recombinant human PTEN hydrolyzes a fluorogenic substrate (fluorescein diphosphate) releasing fluorescence (excitation/emission 490/514 nm) at 10 AFU/min.
Purity	> 95% by SDS-PAGE.
Storage	Quality guaranteed for 12 months, store at -80°C. Avoid freeze / thaw cycles.

GENE INFORMATION

Gene Name	PTEN phosphatase and tensin homolog [Homo sapiens]
Synonyms	PTEN; BZS; MGC11227; ADSF; FIZZ3; HXCP1; RSTN; XCP1; resistin; MHAM; MMAC1; PTEN1; TEP1; MGC126603; MGC126609; phosphatase and tensin homolog; Adipose tissue-specific secretory factor; C/EBP-epsilon regulated myeloid-specific secreted cysteine-rich protein precursor; C/EBP-epsilon-regulated myeloid-specific secreted cysteine-rich protein; Cysteine-rich secreted protein A12-alpha-like 2; Cysteine-rich secreted protein FIZZ3; found in inflammatory zone 3; Phosphatase and tensin homolog (mutated in multiple advanced cancers 1)
Gene ID	5728
mRNA Refseq	NM_000314
Protein Refseq	NP_000305
MIM	601728
UniProt ID	P60484
Chromosome Location	10q23

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Pathway Endometrial cancer; Focal adhesion; Prostate cancer; Glioma; Inositol phosphate metabolism; Melanoma; Phosphatidylinositol signaling system; Small cell lung cancer; Tight junction; p53 signaling pathway; Pathways in cancer

Function PDZ domain binding; hydrolase activity; inositol-1,3,4,5-tetrakisphosphate 3-phosphatase activity; lipid binding; magnesium ion binding; protein tyrosine/serine/threonine phosphatase activity; protein tyrosine phosphatase activity; protein serine/threonine phosphatase activity; platelet-derived growth factor receptor binding; phosphatidylinositol-3-phosphatase activity; phosphatidylinositol-3,4-bisphosphate 3-phosphatase activity; phosphatidylinositol-3,4,5-trisphosphate 3-phosphatase activity

Crystallographic structure of human PTEN.

