

Active Recombinant Human PTEN Protein (Thr2-Val403), C-6xHis-tagged

Cat. No. PTEN-18H Lot. No. (See product label)

SPECIFICATION

Product Overview Recombinant Human PTEN Protein (Thr2-Val403) with a C-terminal 6xHis tag was expressed in E. coli.

Species Human

Source E.coli

ProteinLength Thr2-Val403

Description

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. It negatively regulates intracellular levels of phosphatidylinositol-3,4,5-trisphosphate in cells and functions as a tumor suppressor by negatively regulating AKT/PKB signaling pathway. The use of a non-canonical (CUG) upstream initiation site produces a longer isoform that initiates translation with a leucine, and is thought to be preferentially associated with the mitochondrial inner membrane. This longer isoform may help regulate energy metabolism in the mitochondria. A pseudogene of this gene is found on chromosome 9. Alternative splicing and the use of multiple translation start codons results in multiple transcript variants encoding different isoforms.

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Bio-activity	Measured by its ability to dephosphorylate either diC8PIP3 or diC16PIP3. The specific activity is >480 nmol/min/mg, as measured under the described conditions.
Molecular Mass	Predicted Molecular Mass: 48 kDa SDS-PAGE: 59 kDa, reducing conditions
N-terminal Sequence Analysis	Thr2
Endotoxin	<1.0 EU/μg of the protein by the LAL method.
Purity	>80% by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. 6 months from date of receipt, -70 centigrade as supplied. 3 months, -70 centigrade under sterile conditions after opening.
Storage Buffer	Supplied as a 0.2 μm filtered solution in HEPES, NaCl, EDTA, Glycerol and Betamercaptoethanol.
Shipping	The product is shipped with dry ice or equivalent.

GENE INFORMATION

Gene Name	PTEN phosphatase and tensin homolog [Homo sapiens (human)]
Official Symbol	PTEN
Synonyms	PTEN; phosphatase and tensin homolog; BZS, MHAM; phosphatidylinositol-3,4,5-trisphosphate 3-phosphatase and dual-specificity protein phosphatase PTEN;

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MMAC1; mutated in multiple advanced cancers 1; PTEN1; TEP1; phosphatase and tensin-like protein; MMAC1 phosphatase and tensin homolog deleted on chromosome 10; BZS; DEC; GLM2; MHAM; 10q23del; MGC11227

Gene ID [5728](#)

mRNA Refseq [NM_000314](#)

Protein Refseq [NP_000305](#)

UniProt ID [P60484](#)

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