

Product datasheet for **RC400440**

PTEN (NM_000314) Human Mutant ORF Clone

Product data:

Product Type:	Mutant ORF Clones
Product Name:	PTEN (NM_000314) Human Mutant ORF Clone
Mutation Description:	R159K
Affected Codon#:	159
Affected NT#:	c.476
Nucleotide Mutation:	PTEN Mutant (R159K), Myc-DDK-tagged ORF clone of Homo sapiens phosphatase and tensin homolog (PTEN) as transfection-ready DNA
Effect:	Missense
Symbol:	PTEN
Synonyms:	10q23del; BZS; CWS1; DEC; GLM2; MHAM; MMAC1; PTEN1; PTENbeta; TEP1
Vector:	pCMV6-Entry (PS100001)
Tag:	Myc-DDK
ACCN:	NM_000314
ORF Size:	1209 bp



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ORF Nucleotide
Sequence:

>RC400440 representing NM_000314
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGACAGCCATCATCAAAGAGATCGTTAGCAGAAAACAAAAGGAGATATCAAGAGGATGGATTCGACTTAG
ACTTGACCTATATTTATCCAAACATTATTGCTATGGGATTTCTGCAGAAAGACTTGAAGGCGTATACAG
GAACAATATTGATGATGTAGTAAGGTTTTGGATTCAAAGCATAAAAACCATTAACAAGATATACAATCTT
TGTGCTGAAAGACATTATGACACCGCCAAATTTAATTGCAGAGTTGCACAATATCCTTTTGAAGACCATA
ACCCACCACAGCTAGAATTATCAAACCTTTTGTGAAGATCTTGACCAATGGCTAAGTGAAGATGACAA
TCATGTTGCAGCAATTCAGTGTAAAGCTGAAAAGGGACGAACTGGTGTAAATGATATGTGCATATTTATTA
CATCGGGGCAATTTTTAAAGGCACAAGAGGCCCTAGATTTCTATGGGGAAGTAAAGACCAGAGACAAAA
AGGGAGTAACTATCCAGTCAGAGGCGCTATGTGATTATTATAGCTACCTGTTAAAGAATCATCTGGA
TTATAGACCAGTGGCACTGTTGTTTACAAGATGATGTTGAAACTATCCAATGTTCACTGGCGGAACT
TGCAATCCTCAGTTTGTGGTCTGCCAGCTAAAGGTGAAGATATATTCCTCCAATTCAGGACCCACACGAC
GGGAAGACAAGTTCATGTACTTTGAGTTCCTCAGCCGTTACCTGTGTGTGGTATATCAAGTAGAGTT
CTTCCACAAAACAGAACAAGATGCTAAAAAGGACAAAAATGTTTCACTTTTGGGTAATACATTCTTCATA
CCAGGACCAGAGGAACTCAGAAAAAGTAGAAAAAGTGAAGTCTATGTGATCAAGAAATCGATAGCATT
GCAGTATAGAGCGTGCAGATAATGACAAGGAATATCTAGTACTTACTTTAACAAAAATGATCTTGACAA
AGCAAAATAAGACAAAGCCAACCGATACTTTTCTCAAATTTAAGGTGAAGCTGACTTCAAAAAACA
GTAGAGGAGCCGTCAAATCCAGAGGCTAGCAGTTCAACTTCTGTAACACCAGATGTTAGTGACAATGAAC
CTGATCATTATAGATTTCTGACACCACTGACTCTGATCCAGAGAATGAACCTTTTGATGAAGATCAGCA
TACACAAATTACAAAAGTC

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

>RC400440 representing NM_000314
Red=Cloning site Green=Tags(s)

MTAIIKEIVSRNKRRYQEDGFDLDTYIYPNIIAMGFPAERLEGVYRNNIDDVVRFLDSKHKNHYKIYNL
CAERHYDTAKFNCRVAQYPFEDHNPPQLELIKPFCELDQWLSDDNHVAAIHCKAGKGRGVMICAYLL
HRGKFLKAQEALDFYGEVKTDRKKGVTIPSQRRYVYYSYLLKNHLDYRPVALLFHKMMFETIPMFSGGT
CNPQFVVCQLKVKIYSSNSGPTRRREDKFMYFEPQPLVCGDIKVEFFHKQNKMLKKDKMFHFWNTFFI
PGPEETSEKVENGSLCDQEIDSICSIERADNDKEYLVLTLTKNDLKDANKDKANRYFSPNFKVKLYFTKT
VEEPSNPEASSSTSVTPDVSDNEPDHYRYSDDTSDPENEPFDEDQHTQITKV

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Restriction Sites:

SgfI-MluI

MW: 47 kDa

Gene Summary: 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. [provided by RefSeq, Feb 2015]