

Product datasheet for KN202627LP

OriGene Technologies, Inc.

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PTEN Human Gene Knockout Kit (CRISPR)

Product data:

Product Type: Knockout Kits (CRISPR)

Format: 2 gRNA vectors, 1 Luciferase-Puro donor, 1 scramble control

Donor DNA: Luciferase-Puro

Symbol: PTEN Locus ID: 5728

Components: KN202627G1, PTEN gRNA vector 1 in pCas-Guide CRISPR vector (GE100002)

KN202627G2, PTEN gRNA vector 2 in pCas-Guide CRISPR vector (GE100002)

KN202627LPD, donor DNA containing left and right homologous arms and Luciferase-Puro

functional cassette.

GE100003, scramble sequence in pCas-Guide vector

RefSeq: <u>NM 000314, NM 001304717, NM 001304718</u>

UniProt ID: P60484

Synonyms: 10q23del; BZS; CWS1; DEC; GLM2; MHAM; MMAC1; PTEN1; TEP1

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

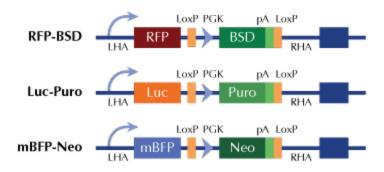
9. Alternative splicing and the use of multiple translation start codons results in multiple transcript variants encoding different isoforms. [provided by RefSeq, Feb 2015]





Product images:

Donor Vector Edited Chromosome



RFP, Luc, and mBFP will be under native gene promoter