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Product datasheet for SC211786

AKT1 (NM_001014431) Human 3' UTR Clone

Product data:

Product Type: 3' UTR Clones

Product Name: AKT1 (NM_001014431) Human 3' UTR Clone

Vector: pMirTarget (PS100062)

Symbol: AKT1

Synonyms: AKT; PKB; PKB-ALPHA; PRKBA; RAC; RAC-ALPHA

ACCN: NM_001014431

Insert Size: 1022 bp

Insert Sequence:

>SC211786 3'UTR clone of NM_001014431
The sequence shown below is from the reference sequence of NM_001014431. The complete sequence of this clone may contain minor differences, such as SNPs.
Blue=Stop Codon Red=Cloning site

GGCAAGTTGGACGCCCGCAAGATCCGCGAGATTCTCATTAAGGCCAAGAAGGGCGGAAAGATCGCCGTG
TAACAATTGGCAGAGCTCAGAATTCAAGCGATCGCC
TTCTCCTACTCGGCCAGCGGCACGGCCTGAGGCGGCGGTGGACTGCGCTGGACGATAGCTTGGAGGGAT
GGAGAGGCGGCCTCGTGCCATGATCTGTATTTAATGGTTTTTATTTCTCGGGTGCATTTGAGAGAAGCC
ACGCTGTCCTCTCGAGCCCAGATGGAAAGACGTTTTTGTGCTGTGGGCAGCACCCTCCCCCGCAGCGGG
GTAGGGAAGAAAACTATCCTGCGGGTTTTAATTTATTTCATCCAGTTTGTTCTCCGGGTGTGGCCTCAG
CCCTCAGAACAATCCGATTCACGTAGGGAAATGTTAAGGACTTCTGCAGCTATGCGCAATGTGGCATTG
GGGGGCCGGGCAGGTCCTGCCCATGTGTCCCCTCACTCTGTCAGCCAGCCGCCCTGGGCTGTCTGTCAC
CAGCTATCTGTCATCTCTCTGGGGCCCTGGGCCTCAGTTCAACCTGGTGGCACCAGATGCAACCTCACT
ATGGTATGCTGGCCAGCACCCTCTCCTGGGGGTGGCAGGCACACAGCAGCCCCCCAGCACTAAGGCCGT
GTCTCTGAGGACGTCATCGGAGGCTGGGCCCCTGGGATGGGACCAGGGATGGGGGATGGGCCAGGGTTT
ACCCAGTGGGACAGAGGAGCAAGGTTTAAATTTGTTATTGTGTATTATGTTGTTCAAATGCATTTTGGG
GGTTTTTAATCTTTGTGACAGGAAAGCCCTCCCCCTTCCCCTTCTGTGTCACAGTTCTTGGTGACTGTC
CCACCGGGAGCCTCCCCCTCAGATGATCTCTCCACGGTAGCACTTGACCTTTTCGACGCTTAACCTTTC
CGCTGTCGCCCCAGGCCCTCCCTGACTCCCTGTGGGGGTGGCCATCCCTGGGCCCCTCCACGCCTCCTG
GCCAGACGCTGCCGCTGCCGCTGCACCACGGCGTTTTTTTACAACATTCAACTTTAGTATTTTTACTAT
TATAATATAATATGGAACCTTCCCTCCAAATTCTTCAATAAAAGTTGCTTTTCAAA
ACGCGTAAGCGGCCGCGGCATCTAGATTCGAAGAAAATGACCGACCAAGCGACGCCCAACCTGCCATCA
CGAGATTTCGATTCCACCGCCGCCTTCTATGAAAGG

Restriction Sites: SgfI-MluI

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OTI Disclaimer: Our molecular clone sequence data has been matched to the sequence identifier above as a point of reference. Note that the complete sequence of this clone is largely the same as the reference sequence but may contain minor differences , e.g., single nucleotide polymorphisms (SNPs).

Components: The cDNA clone is shipped in a 2-D bar-coded Matrix tube as 10 ug dried plasmid DNA. The package also includes 100 pmols of both the corresponding 5' and 3' vector primers in separate vials.

RefSeq: NM_001014431.2

Summary: This gene encodes one of the three members of the human AKT serine-threonine protein kinase family which are often referred to as protein kinase B alpha, beta, and gamma. These highly similar AKT proteins all have an N-terminal pleckstrin homology domain, a serine/threonine-specific kinase domain and a C-terminal regulatory domain. These proteins are phosphorylated by phosphoinositide 3-kinase (PI3K). AKT/PI3K forms a key component of many signalling pathways that involve the binding of membrane-bound ligands such as receptor tyrosine kinases, G-protein coupled receptors, and integrin-linked kinase. These AKT proteins therefore regulate a wide variety of cellular functions including cell proliferation, survival, metabolism, and angiogenesis in both normal and malignant cells. AKT proteins are recruited to the cell membrane by phosphatidylinositol 3,4,5-trisphosphate (PIP3) after phosphorylation of phosphatidylinositol 4,5-bisphosphate (PIP2) by PI3K. Subsequent phosphorylation of both threonine residue 308 and serine residue 473 is required for full activation of the AKT1 protein encoded by this gene. Phosphorylation of additional residues also occurs, for example, in response to insulin growth factor-1 and epidermal growth factor. Protein phosphatases act as negative regulators of AKT proteins by dephosphorylating AKT or PIP3. The PI3K/AKT signalling pathway is crucial for tumor cell survival. Survival factors can suppress apoptosis in a transcription-independent manner by activating AKT1 which then phosphorylates and inactivates components of the apoptotic machinery. AKT proteins also participate in the mammalian target of rapamycin (mTOR) signalling pathway which controls the assembly of the eukaryotic translation initiation factor 4F (eIF4E) complex and this pathway, in addition to responding to extracellular signals from growth factors and cytokines, is disregulated in many cancers. Mutations in this gene are associated with multiple types of cancer and excessive tissue growth including Proteus syndrome and Cowden syndrome 6, and breast, colorectal, and ovarian cancers. Multiple alternatively spliced transcript variants have been found for this gene. [provided by RefSeq, Jul 2020]

Locus ID: 207

MW: 37.4