

## Product datasheet for **RC400404**

### PI 3 Kinase catalytic subunit alpha (PIK3CA) (NM\_006218) Human Mutant ORF Clone

#### Product data:

|                           |   |
|---------------------------|---|
| Product Type:             | Mutant ORF Clones   |
| Product Name:             | PI 3 Kinase catalytic subunit alpha (PIK3CA) (NM_006218) Human Mutant ORF Clone   |
| Mutation Description:     | A1066V  |
| Affected Codon#:          | 1066  |
| Affected NT#:             | c.3197  |
| Nucleotide Mutation:      | PIK3CA Mutant (A1066V), Myc-DDK-tagged ORF clone of Homo sapiens phosphoinositide-3-kinase, catalytic, alpha polypeptide (PIK3CA) as transfection-ready DNA |
| Effect:                   | Missense  |
| Symbol:                   | PI 3 Kinase catalytic subunit alpha   |
| Synonyms:                 | CLAPO; CLOVE; CWS5; MCAP; MCM; MCMTC; p110-alpha; PI3K; PI3K-alpha  |
| E. coli Selection:        | Kanamycin (25 ug/mL)  |
| Mammalian Cell Selection: | Neomycin  |
| Vector:                   | pCMV6-Entry (PS100001)  |
| Tag:                      | Myc-DDK   |
| ACCN:                     | NM_006218   |
| ORF Size:                 | 3204 bp   |
| Restriction Sites:        | SgfI-MluI   |
| ORF Nucleotide Sequence:  | >RC400404 representing NM_006218<br>Red=Cloning site Blue=ORF Green=Tags(s)   |

TTTTGTAATACGACTCACTATAGGGCGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGATCGCC**

ATGCCTCCACGACCATCATCAGGTGAACTGTGGGCATCCACTTGATGCCCCCAAGAATCCTAGTAGAAT  
GTTTACTACCAAATGGAATGATAGTGACTTTAGAATGCCTCCGTGAGGCTACATTAATAACCATAAAGCA  
TGAACTATTTAAAGAAGCAAGAAAAATACCCCTCCATCAACTTCTTCAAGATGAATCTTCTTACATTTTC  
GTAAGTGTACTCAAGAAGCAGAAAGGGAAGAATTTTTGATGAAACAAGACGACTTTGTGACCTTCGGC  
TTTTTCAACCTTTTTAAAAGTAATTGAACCAGTAGGCAACCGTAAGAAAAGATCCTCAATCGAGAAAT  
TGGTTTTGCTATCGGCATGCCAGTGTGTAATTTGATATGGTTAAAGATCCAGAAGTACAGGACTCCGA  
AGAAATATTCTGAACGTTTGTAAGAAGCTGTGGATCTTAGGGACCTCAATTCACCTCATAGTAGAGCAA



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TGTATGTCTATCCTCCAATGTAGAATCTTCACCAGAATTGCCAAAGCACATATATAATAAATTAGATAA  
AGGGCAAATAATAGTGGTGTCTGGGTAATAGTTTCTCCAATAATGACAAGCAGAAGTATACTCTGAAA  
ATCAACCATGACTGTGTACCAGAACAAGTAATTGCTGAAGCAATCAGGAAAAAACTCGAAGTATGTTGC  
TATCCTCTGAACAATAAACTCTGTGTTTTAGAATATCAGGGCAAGTATATTTTAAAAGTGTGTGGATG  
TGATGAATACTTCTAGAAAAATCCTCTGAGTCAGTATAAGTATAAAGAAGCTGTATAATGCTTGGG  
AGGATGCCAATTTGATGTTGATGGCTAAAGAAAAGCCTTTATTCTCAACTGCCAATGGACTGTTTTACAA  
TGCCATCTTATCCAGACGCATTTCCACAGCTACACCATATATGAATGGAGAAAACATCTACAAAAATCCCT  
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CCATTGGCATGGGAAAATATAAACTGTTTTGATTACACAGACTCTAGTATCTGGAAAAATGGCTTTGA  
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GTGATTGAAGAGCATGCCAATTTGGTCTGTATCCCGAGAAGCAGGATTTAGCTATTCACGCAGGACTGA  
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ATCCCCGAAATTTACCCAAATGCTTCTGTCTGTTAAATGGAATTTCTAGAGATGAAGTAGCCAGATGT  
ATTGCTTGGTAAAAGATTGGCCTCCAATCAAACCTGAACAGGCTATGGAACCTCTGGACTGTAATTACCC  
AGATCCTATGGTTCGAGGTTTTGCTGTTGCGTGCTTGGAAAAATTTAACAGATGACAACTTTCTCAG  
TATTTAATTCAGTAGTACAGGTCCTAAAATAGAACAATATTTGGATAACTTGCTTGTGAGATTTTAC  
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TAAACAGTTAGCCAGAGGTTTTGGCCTGCTTTTTGGAGTCTATTGTCTGATGTGGATGATTTTGAAG  
CACCTGAATAGGCAAGTCGAGGCAATGAAAAGCTCATAACTTAAGTACATTCTCAAACAGGAGAAGA  
AGGATGAAACACAAAAGGTACAGATGAAGTTTTAGTTGAGCAATGAGGCGACCAGATTTATGGATGC  
TCTACAGGGCTTTCTGTCTCTTAAACCCTGCTCATCAACTAGGAAAACCTCAGGCTTGAAGAGTGTGCA  
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TTGGGAATTTGGAGATCGTCACAATAGTAACATCATGGTGAAGACGATGGACAACCTGTTTCATATAGATT  
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ACAGGATTTCTTAATAGTGATTAGTAAAGGAGCCCAAGAATGCACAAAGACAAGAGAATTTGAGAGGTTT  
CAGGAGATGTGTTACAAGGCTTATCTAGCTATTCGACAGCATGCCAATCTCTTCAATAATCTTTTCTCAA  
TGATGCTTGGCTCTGGAATGCCAGAATAAATCTTTTGTGACATTGCATACATTGAAAGACCCTAGC  
CTTAGATAAACTGAGCAAGAGGCTTTGGAGTATTTTATGAAACAAATGAATGATGCACATCATGGTGGC  
TGGACAACAAAAATGGATTGGATCTTCCACACAATTAACAGCATGTATTGAAC

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence: >RC400404 representing NM\_006218  
 Red=Cloning site Green=Tags(s)

MPPRPSSGELWGIHLMPPRILVECLLPNGMIVTLECLREATLITIKHELKFEARKYPLHQLLQDESSYIF  
 VSVTQEAEREEFFDETRRLCDLRLFQPFLKVIIEPVGNREKILNREIGFAIGMPVCEFDVMKDPEVQDFR  
 RNILNVCKEAVDLRDLNSPHSRAMYVYPPNVESSPELPHKIYNKLDKGQIIVVIWVIVSPNNDKQKYTLK  
 INHDCVPEQVIAEAIRKKTRSMLLSSEQLKLCVLEYQGYILKVCGCDEYFLEKYPLSQYKYIRSCIMLG  
 RMPNLMLMAKESLYSQLPMDCFMPSYSRRISTATPYMNGETSTKSLWVINSALRIKILCATYVNVNIRD  
 IDKIYVRTGIYHGGEPLCDNVNTQRPVCSNPRWNEWLNNDIYIPDLPRAARLCLISCSVKGRKGAKEEHC  
 PLAWGNINLFDYDTLVSGKMALNLWVPVHGLEDLLNPIGVTGSNPNKETPCLELEFDWFSVVKFPDMS  
 VIEEHANWSVSREAGFSYSHAGLSNRLARDNELRENDKEQLKAISTRDPLSEITEQEKFVLSHRHYCVT  
 IPEILPKLLL SVKWSRDEVAQMYCLVKDWPIKPEQAMELLDCNYPDPMVRGFVAVRCLEKYL TDDKLSQ  
 YLIQLVQVLKYEQYLDNLLVRFLLKKALTNQRIGHFFFWHLKSEMHNKTVSQRFGLLLESYCRACGMYLK  
 HLNQRQVEAMEKLINLTDILKQEKKDETQKVQMKFLVEQMRRPDFMDALQGFLSPLNPAHQLGNLRLIEECR  
 IMSSAKRPLWLNWENPDIMSELLFQNNIEIFKNGDDLQDMLTLQIIRIMENIWQNQGLDLRMLPYGCLS  
 IGDCVGLIEVVRNSHTIMQIQCKGGLK GALQFNSHTLHQWLKDKNKGEIYDAAIDLFTRSAGYCVATFI  
 LGIGDRHNSNIMVKDDGQLFHIDFGHFLDHKKKFGYKRERVPFVLTQDFLIVISKGAQECTKTREPERF  
 QEMCYKAYLAIRQHANLFINLFSMMLGSGMPELQSFDDIAYIRKTLALDKTEQEALEYFMQMNDAAHHGG  
 WTTKMDWIFHTIKQHVLN

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Restriction Sites: SgfI-MluI

Cloning Scheme:

Cloning sites used for ORF Shutting:



\* The last codon before the Stop codon of the ORF

|                          |  |
|--------------------------|--|
| <b>OTI Disclaimer:</b>   | Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at <a href="mailto:custsupport@origene.com">custsupport@origene.com</a> or by calling 301.340.3188 option 3 for pricing and delivery.  |
|                          | The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. <a href="#">More info</a>   |
| <b>OTI Annotation:</b>   | This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.   |
| <b>Components:</b>       | The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).   |
| <b>RefSeq:</b>           | <a href="#">NP_006209</a>  |
| <b>RefSeq Size:</b>      | 3724 bp  |
| <b>RefSeq ORF:</b>       | 3207 bp  |
| <b>Locus ID:</b>         | 5290   |
| <b>Cytogenetics:</b>     | 3q26.32  |
| <b>Domains:</b>          | PI3K_rbd, PI3_PI4_kinase, PI3Ka, PI3K_C2, PI3K_p85B  |
| <b>Protein Families:</b> | Druggable Genome   |
| <b>Protein Pathways:</b> | Acute myeloid leukemia, Apoptosis, B cell receptor signaling pathway, Chemokine signaling pathway, Chronic myeloid leukemia, Colorectal cancer, Endometrial cancer, ErbB signaling pathway, Fc epsilon RI signaling pathway, Fc gamma R-mediated phagocytosis, Focal adhesion, Glioma, Inositol phosphate metabolism, Insulin signaling pathway, Jak-STAT signaling pathway, Leukocyte transendothelial migration, Melanoma, mTOR signaling pathway, Natural killer cell mediated cytotoxicity, Neurotrophin signaling pathway, Non-small cell lung cancer, Pancreatic cancer, Pathways in cancer, Phosphatidylinositol signaling system, Progesterone-mediated oocyte maturation, Prostate cancer, Regulation of actin cytoskeleton, Renal cell carcinoma, Small cell lung cancer, T cell receptor signaling pathway, Toll-like receptor signaling pathway, Type II diabetes mellitus, VEGF signaling pathway |
| <b>MW:</b>               | 124 kDa  |
| <b>Gene Summary:</b>     | Phosphatidylinositol 3-kinase is composed of an 85 kDa regulatory subunit and a 110 kDa catalytic subunit. The protein encoded by this gene represents the catalytic subunit, which uses ATP to phosphorylate PtdIns, PtdIns4P and PtdIns(4,5)P2. This gene has been found to be oncogenic and has been implicated in cervical cancers. A pseudogene of this gene has been defined on chromosome 22. [provided by RefSeq, Apr 2016]  |