

## Product datasheet for **MG226580**

### **Pik3ca (NM\_008839) Mouse Tagged ORF Clone**

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Pik3ca (NM_008839) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Pik3ca
Synonyms:	6330412C24Rik; caPI3K; p110; p110alpha
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)
ORF Nucleotide Sequence:	>MG226580 representing NM_008839 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGATCGCC**

ATGCTCCACGACCATCTTCGGGTGAAGTGTGGGCATCCACTTGATGCCCCACGAATCCTAGTGAAT  
GTTTACTCCCAATGGAATGATAGTGACTTTAGAATGCCTCCGTGAGGCCACACTCGTCACCATCAAACA  
TGAAGTGTTCAGAGAGGCCAGGAAATACCTCTCCATCAGCTTCTGCAAGACGAACTTCTTACATTTTC  
GTAAGTGTACCCAAGAAGCAGAAAGGGAAGAATTTTTGATGAAACAAGACGACTTTGTGACCTTCGGC  
TTTTTCAACCCTTTTTAAAAGTTATTGAACCAGTAGGCAACCGTGAAGAAAAGATCCTCAATCGAGAAAT  
TGGTTTTGTTATTGGCATGCCAGTGTGTGAATTTGATATGGTTAAAGATCCAGAAGTCCAAGACTTTCGA  
AGGAACATTCTGAATGTTTGAAAGAAGCTGTGGACCTGCGGGATCTCAACTCGCCTCATAGCAGAGCAA  
TGTATGTCTACCTCCAAATGTCGAGTCTTCCCAAGAACTGCCAAAGCACATCTACAACAAGTTAGATAA  
AGGACAAATCATAGTGGTGATTTGGGTAATAGTCTCTCCAAACAACGACAAGCAGAAGTACACTCTGAAG  
ATCAATCATGACTGTGTGCCAGAGCAAGTATTGCTGAAGCCATCAGGAAAAAGACTCGGAGCATGTTGT  
TGTCTCTGAGCAGCTGAAACTCTGTGTCTTAGAATATCAGGGCAAGTATATTCTGAAAGTGTGTGGCTG  
TGACGAATACTTCTGGAAAAGTACCCTCTGAGTCAGTACAAGTACATAAGAAGCTGATAATGCTGGGG  
AGGATGCCCAACTTGATGCTGATGGCCAAAGAAAGCCTATACTCTCAGCTGCCGATTGATAGCTTACCA  
TGCCGTACATACTCCAGGCGCATCTCCACAGCCACACCCTACATGAATGGAGAGACATCTACGAAATCCCT  
CTGGGTACATAAATAGTGCCTCAGAATAAAAAATCTTTGTGCAACCTATGTAATGTAATATTCGAGAC  
ATTGATAAGATCTATGTTGCAACAGGTATCTACCATGGAGGAGAACCCTTATGTGACAAATGTGAACACTC  
AAAGAGTACCTTGTTCAAATCCTAGGTGGAATGAATGGCTGAATTATGATATATACATTCCTGATCTTCC  
TCGTGCTGCGCGCCTTTGCCTTTCATCTGCTCTGTTAAAGGCCGAAAGGGTGCTAAGGAGGAGCACTGT  
CCGTTGGCCTGGGAAACATAAACTTGTGGATTATACAGACACCCTAGTGTCCGGGAAATGGCTTTGA  
ATCTCTGGCCTGTACCGCATGGGTTAGAAGATCTGCTGAACCCTATTGGTGTACTGGGTCAAATCCAAA  
TAAAGAACTCCATGCTTAGAGTTGGAGTTTATTGGTTCAGCAGTGTGGTGAAGTTCCAGACATGTCT



[View online »](#)

```
GTGATCGAAGAACATGCCAATTGGTCCGTGTCCCAGAGAAGCTGGATTCACTACTCCCATACAGGACTGA
GTAACAGACTAGCCAGAGACAATGAGTTAAGAGAAAATGACAAGGAACAGCTCCGAGCACTTTGCACCCG
GGACCCACTATCTGAAATCACTGAACAAGAGAAAGACTTCTATGGAGCCACAGACACTACTGCCTAACT
ATTCTGAAATCTACCCAAATTGCTTCTGTCTGTCAAGTGAATTCCAGAGACGAAGTGGCCAGATGT
ACTGCTTAGTAAAAGATTGGCCTCCAATCAAACCAGAGCAAGCCATGGAACCTCTGGACTGTAACATCC
AGATCCTATGGTTCGGAGTTTTGCTGTTTCGGTCTTAGAAAAATATTTAACAGATGACAACTTTCTCAG
TACCTCATTCAACTTGTACAGGTCTTAAAAATGAACAGTATTTGGATAACCTGCTTGTGAGATTTTAC
TCAAGAAAGCATTGACAAATCAAAGGATTGGCCATTTTTCTTTTGGCATTAAAAATCTGAGATGCACAA
TAAGACTGTCAGTCAGAGGTTTGGCCTGCTATTGGAGTCTACTGCCGTGCCTGTGGGATGTATCTGAAG
CACCTGAACAGACAAGTAGAGGCCATGGAGAAGCTCATCAACCTAACGGACATCCTTAAGCAGGAGAAGA
AGGATGAGACACAAAAGGTACAGATGAAGTTTTTGGTTGAACAGATGAGACAGCCAGACTTCATGGATGC
TTTGCAGGTTTTCTGTCCCTCTGAATCTGCTCACCACCTAGGAACTCAGGCTTGAAGAGTGTGCA
ATTATGTCCTCTGCAAAAAGCCACTGTGGTTGAATTGGGAGAACCAGACATCATGTCAGAGCTACTGT
TTCAGAACAATGAGATCATCTTTAAAAATGGCGACGACTTACGGCAAGATATGTTAACCTTCAGATCAT
CCGAATCATGGAGAACATCTGGCAAAACCAAGGCCTTGACCTTCGCATGTACTCTTATGGCTGTCTATCC
ATTGGGGACTGTGTGGGTCTCATCGAGGTGGTGAGAACTCTCACACCATCATGCAATCCAGTGCAAAAG
GAGGCCTGAAGGGGGCGCTGCAGTTCAACAGCCACACACTGCATCAATGGCTCAAGGACAAGAACAAGGG
CGAGATATATGATGCAGCCATTGACCTGTTCACTCGGTCTCGCTGGTACTGCGTGGCAACCTTTATC
TTGGGAATTGGAGACCGGCACAACAGCAACATCATGGTGAAGATGACGGACAGCTGTTTCATATAGATT
TTGGGCACTTTTTGGATCACAAGAAGAAAAATTTGGCTATAAGCGGGAACGTGTGCCATTTGTGTTGAC
ACAGGATTTCTTGATTGTGATTAGTAAGGGAGCACAAGAGTACACCAAGACCAGAGATTTGAGAGGTTT
CAGGAGATGTGTTACAAGGCTTACCTAGCAATTCGGCAGCATGCCAATCTCTTCAACCTTTTTTCAA
TGATGCTTGGCTCTGGAATGCCAGAACTACAATCTTTTATGACATTGCATATATCCGAAAGACTCTAGC
CTTGGACAAAACCTGAGCAAGAAGCTTTGGAATTTTACAAAGCAATGAATGATGCACATCATGGTGGG
TGGACGACAAAATGGATTGGATCTTCCACACCATCAAGCAGCATGCTTTGAAC
```

ACGCGTACGCGGCCGCTCGAG – GFP Tag – GTTTAA

**Protein Sequence:**

>MG226580 representing NM\_008839  
 Red=Cloning site Green=Tags(s)

```
MPPRPSSGELWGIHLMPPRILVECLLPMNGMIVTLECLREATLVTIKHELFRARKYPLHQLLQDETSYIF
VSVTQEAEREFFDETRRLCDLRLFPFLKVIIEPVGNREEKILNREIGFVIGMPVCEFDVMKDPEVQDFR
RNILNVCKEAVDLRDLNSPHSRAMYVYPPNVESSPELPHKIYNKLDKGQIIVVIWVIVSPNNDKQKYTLK
INHDCVPEQVIAEAIKKTRSMLLSSEQLKLCVLEYQKYLKVCGCDEYFLEKYPLSQYKYIRSCIMLG
RMPNMLMAKESLYSQLPIDSFTMPSYSRRISTATPYMNGETSTKSLWVINSALRIKILCATYVNVNIRD
IDKIYVRTGIYHGGELCDNVNTQRVPCSNPRWNEWLNVDIYIPDLPRARLCLISVKGGRKGAKEEHC
PLAWGNINLFDYDTLVSGKMALNLWPVPHGLEDLLNPIGVTGSNPNETPCLELEFDWFSSVVKFPDMS
VIEEHANWSVSREAGFSYHTGLSNRLARDNELRENDKEQLRALCTRDPLSEITEQEKDFLWSHRHYCVT
IPEILPKLLL SVKWNRSRDEVAQMYCLVKDWPIKPEQAMELLDCNYPDPMVRSFAVRCLEKYL TDDKLSQ
YLIQLVQVLKYEYLDNLLVRFLLKKALTNQRIGHFFFWHLKSEMHNKTVSQRFGLLLESYCRACGMYLK
HLNRQVEAMEKLINLTDILKQEKKDETQKVQMKFLVEQMRQPDFMDALQGFLSPLNPAHQLGNLRLEECR
IMSSAKRPLWLNWENPDIMSELLFQNEIIFKNGDDLQDMLTLQIIRIMENIWQNQGLDLRMLPYGCLS
IGDCVGLIEVVRNSHTIMQIQCKGGLKALQFNSHTLHQWLKDKNKGEIYDAAIDLFTSCAGYCVATFI
LGI GDRHNSNIMVKDDGQLFHIDFGHFLDHKKKFGYKRERVPFVLTQDFLIVISKGAQEYTKTREFERF
QEMCYKAYLAIRQHANLFINLFSMMLGSGMPELQSFDDIAYIRKTLALDKTEQEALFYFTKMNDAAHHGG
WTTKMDWIFHTIKQHALN
```

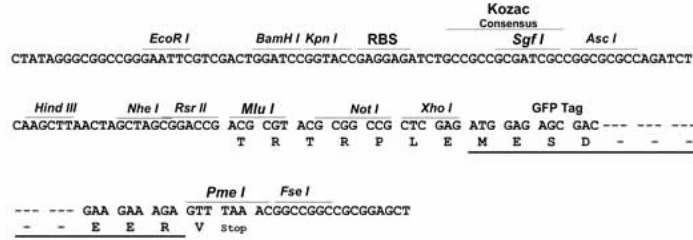
TRTRPLE – GFP Tag – V

**Restriction Sites:**

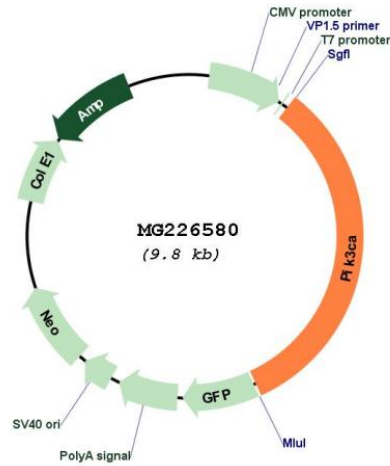
Sgfl-Mlul

Cloning Scheme:

Cloning sites used for ORF Shutting:



Plasmid Map:



ACCN: NM\_008839

ORF Size: 3204 bp

<b>OTI Disclaimer:</b>	<p>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.</p> <p>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></p>
<b>OTI Annotation:</b>	<p>This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.</p>
<b>Components:</b>	<p>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).</p>
<b>Reconstitution Method:</b>	<ol style="list-style-type: none"> <li>1. Centrifuge at 5,000xg for 5min.</li> <li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li> <li>3. Close the tube and incubate for 10 minutes at room temperature.</li> <li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li> <li>5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.</li> </ol>
<b>RefSeq:</b>	<a href="#">NM_008839.3</a>
<b>RefSeq Size:</b>	8917 bp
<b>RefSeq ORF:</b>	3207 bp
<b>Locus ID:</b>	18706
<b>UniProt ID:</b>	<a href="#">P42337</a>
<b>Cytogenetics:</b>	3 15.7 cM

**Gene Summary:**

Phosphoinositide-3-kinase (PI3K) that phosphorylates PtdIns (Phosphatidylinositol), PtdIns4P (Phosphatidylinositol 4-phosphate) and PtdIns(4,5)P<sub>2</sub> (Phosphatidylinositol 4,5-bisphosphate) to generate phosphatidylinositol 3,4,5-trisphosphate (PIP<sub>3</sub>). PIP<sub>3</sub> plays a key role by recruiting PH domain-containing proteins to the membrane, including AKT1 and PDK1, activating signaling cascades involved in cell growth, survival, proliferation, motility and morphology. Participates in cellular signaling in response to various growth factors. Involved in the activation of AKT1 upon stimulation by receptor tyrosine kinases ligands such as EGF, insulin, IGF1, VEGFA and PDGF. Involved in signaling via insulin-receptor substrate (IRS) proteins. Essential in endothelial cell migration during vascular development through VEGFA signaling, possibly by regulating RhoA activity. Required for lymphatic vasculature development, possibly by binding to RAS and by activation by EGF and FGF2, but not by PDGF. Regulates invadopodia formation through the PDK1-AKT1 pathway. Participates in cardiomyogenesis in embryonic stem cells through a AKT1 pathway. Participates in vasculogenesis in embryonic stem cells through PDK1 and protein kinase C pathway. Also has serine-protein kinase activity: phosphorylates PIK3R1 (p85alpha regulatory subunit), EIF4EBP1 and HRAS. Plays a role in the positive regulation of phagocytosis and pinocytosis (PubMed:19604150). [UniProtKB/Swiss-Prot Function]