

## Product datasheet for **RC402637**

### PKC gamma (PRKCG) (NM\_002739) Human Mutant ORF Clone

#### Product data:

Product Type:	Mutant ORF Clones
Product Name:	PKC gamma (PRKCG) (NM_002739) Human Mutant ORF Clone
Mutation Description:	G123E
Affected Codon#:	123
Affected NT#:	368
Nucleotide Mutation:	PRKCG Mutant (G123E), Myc-DDK-tagged ORF clone of Homo sapiens protein kinase C, gamma (PRKCG) as transfection-ready DNA
Effect:	Spinocerebellar ataxia 14
Symbol:	PRKCG
Synonyms:	PKC-gamma; PKCC; PKCG; PKCgamma; PKCI(3); SCA14
E. coli Selection:	Kanamycin (25 ug/mL)
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
Tag:	Myc-DDK
ACCN:	NM_002739
ORF Size:	2091 bp
Restriction Sites:	Sgfi-MluI



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ORF Nucleotide  
Sequence:

>RC402637 representing NM\_002739  
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGGATCGCC**

ATGGCTGGTCTGGGCCCGCGT**AGGCGATT**CAGAGGGGGACCCCGGCCCTGTTTTGCAGAAAGGGG  
CCCTGAGGCAGAAGGTGGTCCACGAAGTCAAGAGCCACAAGTTCACCGCTCGCTTCTCAAGCAGCCAC  
CTTCTGCAGCCACTGCACCGACTTCATCTGGGGTATCGAAAGCAGGGCCTGCAATGTCAAGTCTGCAGC  
TTTGTGGTTTCATCGACGATGCCACGAATTTGTGACCTTCGAGTGTCCAGGCGCTGGGAAGGGCCCCCAGA  
CGGACGACCCCGGAACAACAAGTTCAGCTGCATAGCTACAGCAGCCACCTTCTGCACCACTG  
TGGCTCCCTCCTACGAGCTTGTGCACCAGGGCATGAAATGCTCCTGCTGCGAGATGAACGTGCACCGG  
CGCTGTGTGCGTAGCGTGCCTCCCTGTGCGGTGTGGACCACACCGAGCGCCGGGGCGCCTGCAGCTGG  
AGATCCGGGCTCCACAGCAGATGAGATCCACGTAAGTGTGGCAGGGCCGTAACCTAATTCCTATGGA  
CCCCAATGGTCTCTGATCCCTATGTGAAACTGAAGCTCATCCAGACCCTCGGAACCTGACGAAACAG  
AAGACCCGAACGGTGAAGCCACGCTAAACCCTGTGTGAATGAGACCTTTGTGTCAACCTGAAGCCAG  
GGGATGTGGAGCGCCGGCTCAGCGTGGAGGTGTGGGACTGGGACCGGACCTCCCGCAACGACTTCATGGG  
GGCCATGTCTTTGGCGTCTCGGAGCTGCTCAAGGCGCCCGTGGATGGCTGGTACAAGTACTGAACCAG  
GAGGAGGGCGAGTATTACAATGTGCCGGTGGCCGATGCTGACAACTGCAGCCTCCTCCAGAAGTTTGAGG  
CTTGTAACACCCCTGGAAATGTATGAGCGGGTGGGATGGGCCCTTCTCCTCCCATCCCCCCCC  
TTCCCCTAGTCCACCGACCCCAAGCGCTGCTTCTCGGGGCGAGTCCAGGACGCTGCACATCTCCGAC  
TTCAGCTTCTCATGGTCTAGGAAAAGGCAGTTTTGGAAAGGTGATGCTGGCCGAGCGCAGGGGCTCTG  
ATGAGCTACGCCATCAAGATCTTAAAAAGGACGTGATCGTCCAGGACGACGATGTGGACTGCACGCT  
GGTGGAGAAACGTGTGCTGGCGCTGGGGGGCCGGGGTCTTGGCGCCGGCCCACTTCTCACCCAGCTC  
CACTCCACCTTCCAGACCCCGGACCGCCTGATTTTCGTGATGGAGTACGTACCGGGGGAGACTTGATGT  
ACCACATTCAACAGCTGGGCAAGTTAAGGAGCCCATGCAGCGTTCTACGCGGCAGAAATCGCTATCGG  
CCTCTTCTCCTTCACAATCAGGGCATCATCTACAGGGACCTGAAGCTGGACAATGTGATGCTGGATGCT  
GAGGGACACATCAAGTACTGACTTTGGCATGTGTAAGGAGAACGTCTTCCCGGGACGACAACCCGCA  
CCTTCTGCGGGACCCCGACTACATAGCCCGGAGATCATTGCCTACCAGCCCTATGGGAAGTCTGTGCA  
TTGGTGGTCTTTGGAGTCTGCTGTATGAGATGTTGGCAGGACAGCCTCCCTTCGATGGGGAGGACGAG  
GAGGAGCTGTTTCAGGCCATCATGGAACAACTGTACCTACCCCAAGTCGCTTCCCGGAAGCCGTGG  
CCATCTGCAAGGGTTCCTGACCAAGCACCCAGGGAAGCGCCTGGGCTCAGGGCCTGATGGGGAACCTAC  
CATCCGTGCACATGGCTTTTTCCGCTGGATTGACTGGGAGCGGCTGGAACGATTGGAGATCCCGCCTCCT  
TTCAGACCCCGCCCGTGTGGCCGAGCGGCGAGAACTTTGACAAGTCTTACGCGGGCGGCGCCAGCGC  
TGACCCCTCCAGACCGCTAGTCTGGCCAGCATCGACCAGGCCGATTTCAGGGCTTACCTACGTGAA  
CCCCGACTTCGTGCACCCGGATGCCCGAGCCCCACCAGCCAGTGCCTGTGCCCGTCATG

AG**CGGACCC**ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC  
TGGATTACAAGGATGACGACGA TAAGGTTTAA

**Protein Sequence:** >RC402637 representing NM\_002739  
 Red=Cloning site Green=Tags(s)

MAGLPGVGDSEGGPRPLFCRKALRQKVVHEVSKHKFTARFFKQPTFCSHCTDFIWGIGKQGLQCQVCS  
 FVVHRRCHEFVTFECPGAGKGPQTDDPRNKKHFRHLSYSSPTFCDHCGSLLYELVHQGMKSCCEMNVHR  
 RCVRSVPSLGGVDHTERRGRLQLEIRAPTADEIHVTVGEARNLIPMDPNGLSDPYVKLKLIPDPRNLTKQ  
 KTRTVKATLNPVWNETFVFNLKPQDVERRLSVEVWDWDRTSRNDFMGAMSGVSELLKAPVDGWYKLLNQ  
 EEEGYNVPVADADNCSLLQKFEACNYPLELYERVRMGPSSSPIPSPSPSPTDPKRCFFGASPGRLHISD  
 FSFLMVLGKGSFGKVMMLAERRGSDELYAIKILKKDVIQDDDDVDTLVEKRVLALGGRGPGGRPHFLTQL  
 HSTFQTPDRLYFVMEYVTGGDLMYHIQQLGKFKEPHAAFYAAEIAIGLFFLHNQGIYRDLKLDNMLDA  
 EGHKIDTFGMCKENVPGTTTTRTFCGTPDYIAPEIIAYQPYGKSVDDWWSFGVLLYEMLAGQPPFDGEDE  
 EELFQAIMEQTVTPKSLSREAVAICKGFLTKHPGKRLGSGPDGEPTIRAHGFFRWIDWERLERLEIPPP  
 FRPRPCGRSGENFDKFFTRAAPALTPPDRLLVASIDQADFQGFYVNPDFVHPDARSPTSPVVPVM

SGPTRRRLEQKLISEEDLAANDILDYKDDDDKV

**Restriction Sites:**

SgfI-MluI

**Cloning Scheme:**



<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>	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_002730</a>
<b>RefSeq Size:</b>	2091 bp
<b>RefSeq ORF:</b>	2094 bp
<b>Locus ID:</b>	5582
<b>Cytogenetics:</b>	19q13.42
<b>Domains:</b>	C2, pkinase, S_TK_X, TyrKc, DAG_PE-bind, S_TKc
<b>Protein Families:</b>	Druggable Genome, Protein Kinase
<b>Protein Pathways:</b>	Calcium signaling pathway, ErbB signaling pathway, Fc gamma R-mediated phagocytosis, Focal adhesion, Gap junction, Glioma, Leukocyte transendothelial migration, Long-term depression, Long-term potentiation, MAPK signaling pathway, Melanogenesis, Natural killer cell mediated cytotoxicity, Non-small cell lung cancer, Pathways in cancer, Phosphatidylinositol signaling system, Tight junction, Vascular smooth muscle contraction, VEGF signaling pathway, Vibrio cholerae infection, Wnt signaling pathway
<b>MW:</b>	76.7 kDa

**Gene Summary:**

Protein kinase C (PKC) is a family of serine- and threonine-specific protein kinases that can be activated by calcium and second messenger diacylglycerol. PKC family members phosphorylate a wide variety of protein targets and are known to be involved in diverse cellular signaling pathways. PKC also serve as major receptors for phorbol esters, a class of tumor promoters. Each member of the PKC family has a specific expression profile and is believed to play distinct roles in cells. The protein encoded by this gene is one of the PKC family members. This protein kinase is expressed solely in the brain and spinal cord and its localization is restricted to neurons. It has been demonstrated that several neuronal functions, including long term potentiation (LTP) and long term depression (LTD), specifically require this kinase. Knockout studies in mice also suggest that this kinase may be involved in neuropathic pain development. Defects in this protein have been associated with neurodegenerative disorder spinocerebellar ataxia-14 (SCA14). Two transcript variants encoding different isoforms have been found for this gene. [provided by RefSeq, Oct 2015]