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Product datasheet for SC116252

cGKI (PRKG1) (NM_006258) Human Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	cGKI (PRKG1) (NM_006258) Human Untagged Clone
Tag:	Tag Free
Symbol:	cGKI
Synonyms:	AAT8; cGK; cGK 1; cGK1; cGKI; cGKI-alpha; cGKI-BETA; PKG; PKG1; PRKG1B; PRKGR1B
Mammalian Cell Selection:	None
Vector:	pCMV6-XL4
E. coli Selection:	Ampicillin (100 ug/mL)

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Fully Sequenced ORF:

>OriGene ORF sequence for NM_006258 edited
CCGGAGGAGCATGGGCACCTTGCGGGATTTACAGTACGCGCTCCAGGAGAAGATCGAGGA
GCTGAGGCAGCGGGATGCTCTCATCGACGAGCTGGAGCTGGAGTTGGATCAGAAGGACGA
ACTGATCCAGAAGCTGCAGAACGAGCTGGACAAGTACCGCTCGGTGATCCGACCAGCCAC
CCAGCAGGCGCAGAAGCAGAGCGCGAGCACCTTGCAGGGCGAGCCGCGCACCAAGCGGCA
GGCGATCTCCGCCGAGCCCACCGCCTTCGACATCCAGGATCTCAGCCATGTGACCCTGCC
CTTCTACCCCAAGAGCCCACAGTCCAAGGATCTTATAAAGGAAGCTATCCTTGACAATGA
CTTTATGAAGAACTTGGAGCTGTCGCAGATCCAGGAGATTGTGGATTGTATGTACCCGGT
GGAGTATGGCAAGGACAGTTGCATCATCAAAGAAGGAGACGTGGGGTCACTGGTGTATGC
CATGGAAGATGGTAAGGTTGAAGTTACAAAAGAAGGTGTGAAGTTGTGTACCATGGGTCC
AGGAAAAGTGTTTGGGGAATTGGCTATTCTTTACAACTGTACCCGGACAGCGACCGTCAA
GACTCTTGTAAATGTAAAACTCTGGGCCATTGATCGACAATGTTTTCAAACAATAATGAT
GAGGACAGGACTCATCAAGCATACCGAGTATATGGAATTTTTAAAAAGCGTTCCAACATT
CCAGAGCCTTCCTGAAGAGATCCTCAGCAAGCTTGCTGATGTCCTTGAAGAGACCCACTA
TGAAAATGGAGAATATATTATCAGGCAAGGTGCAAGAGGGGACACCTTCTTTATCATCAG
CAAAGGAACGGTAAATGTCACTCGTGAAGACTCACCGAGTGAAGACCCAGTCTTTCTTAG
AACTTTAGGAAAAGGAGACTGGTTTGGAGAGAAAGCCTTGCAGGGGGAAGATGTGAGAAC
AGCAAACGTAATTGCTGCAGAAGCTGTAACCTGCCTTGTGATTGACAGAGACTCTTTTAA
ACATTTGATTGGAGGGCTGGATGATGTTTCTAATAAAGCATATGAAGATGCAGAAGCTAA
AGCAAAATATGAAGCTGAAGCGGCTTTCTTCGCCAACCTGAAGCTGTCTGATTTCAACAT
CATTGATACCCTTGGAGTTGGAGGTTTCGGACGAGTAGAACTGGTCCAGTTGAAAAGTGA
AGAATCCAAAACGTTTGCAATGAAGATTCTCAAGAAACGTCACATTGTGGACACAAGACA
GCAGGAGCACATCCGCTCAGAGAAGCAGATCATGCAGGGGGCTCATTCCGATTTCATAGT
GAGACTGTACAGAACATTTAAGGACAGCAAATATTTGTATATGTTGATGGAAGCTTGTCT
AGGTGGAGAGCTCTGGACCATTCTCAGGGATAGAGGTTCGTTTGAAGATTCTACAACCAG
ATTTTACACAGCATGTGTGGTAGAAGCTTTTGCCTATCTGCATTCCAAAGGAATCATTTA
CAGGGACCTCAAGCCAGAAAATCTCATCCTAGATCACCGAGGTTATGCCAAACTGGTTGA
TTTTGGCTTTGCAAAGAAAATAGGATTTGGAAAGAAAACATGGACTTTTTGTGGGACTCC
AGAGTATGTAGCCCCAGAGATCATCCTGAACAAAGGCCATGACATTTCAGCCGACTACTG
GTCACTGGGAATCCTAATGTATGAACTCCTGACTGGCAGCCCACCTTTCTCAGGCCCAGA
TCCTATGAAAACCTATAACATCATATTGAGGGGGATTGACATGATAGAATTTCCAAAGAA
GATTGCCAAAAATGCTGCTAATTTAATTAAAAAACTATGCAGGGACAATCCATCAGAAAG
ATTAGGGAATTTGAAAAATGGAGTAAAAGACATTCAAAAGCACAAATGGTTTGAGGGCTT
TAACTGGGAAGGCTTAAGAAAAGGTACCTTGACACCTCCTATAATACCAAGTGTTGCATC
ACCCACAGACACAAGTAATTTTGACAGTTTCCCTGAGGACAACGATGAACCACCACCTGA
TGACAACTCAGGATGGGATATAGACTTCTAATGTATTTCTCTTACCTGCTTCTGCCTTGC
TGAAGACAGCTTTTTCTGAGACACAGCTGCCAGCAAACCTGAGGGAAAGAGAGAAGATTA
GTGCTCGGGGTCACCATGATGCCTTTGATCGATGCTGCTCCAGTAACTACAGTGGCATTA
GGACTTACCGCTTAGATGACAATAGTGCTCTTTACATGTTTTCTGTTTGAACCTAAAATA
GCAGTTGACATGGTGGTCCTGAAGCAAAGCCTTTCACCAGTAAAAGATGTTTTCTATTGT
TGCAATGACCTTGCTTTGCTCTGATTATAATTTGAAAGACTGTAGGAAACACTTCAATGT
AGTATAAGAGTCTGTACCTTGCTGGAATATTCAAGAAGATGAAAGAATAATATATTGGGT
ACAATAGATTACTATGGTACAGAAACTGGGCTATTCCCTTTCTTCAAGTGAAGGCTGTGG
GATCTATTACTGCAGGCCGGTGTATATACCATACAAAAGAGGACCACACATCTGTTGGTC
ACAGAGTTCATGTCACACCAGTGCTAGAAGTTTCATGA

5' Read Nucleotide Sequence:

>OriGene 5' read for NM_006258 unedited
AGTTTCTTTTGTATACACCCTTAGGCGGCCGGATTCGCACGAGACGGGTGGGGAGGAAGC
CTCAATACGCGGAGCAGCGGCAGGAAGGAGCCCCCGGCAGCCCGGAGGAGCATGGGCACC
TTGCGGGATTTACAGTACGCGCTCCATGAGAAGATCGAGGAGCTGAGGCAGCGGGATGCT
CTCATCGACGAGCTGGAGCTGGAGTTGGATCATAAGGACGAACTGATCCAGAAGCTGCAG
AACGAGCTGGACAAGTACCGCTCGGTGATCCGACCAGCCACCCATCAGGCGCATAATCAG
ATCGCGAGCACCTTGCATGGCGAGCCGCGCACCAAGCGGCAGGCGATCTCCGCCGAGCCC
ACCGCCTTCGACATCCAGGATCTCAGCCATGTGACCCTGCCCTTCTACCCCAAGAGCCCA
CAGTCCAAGGATCTTATAAAGGAAGCTATCCTTGACAATGACTTTATGAAGAACTTGGAG
CTGTCGCATATCCAGGAGATTGTGGATTGTATGTACCCGGTGGAGTATGGCAAGGACAGG
TGCATCATCAAAGAATGAGACGTGGGGTCACTGGTGTATGCCATGGAAGATGGTAAGGTC
TGAAGTTACAAAAGAAGGTGTGAAGTTGTGTACCATGGGTCCAGGATAAGTGTTTGGGGG
AATTGGCTATTCTTTACAACTGTACCCGGACAGCGACCGTCAAGACTCTTGTGAATGGAA
AACTCTGGGCCATTGATCGACAATGGTTTCAAACNATAATGATGAGGACAGGACTCATCA
AGCATACCGAGTATATGGAATTTTTAAAAAGCGTGCCACATTCCAGAGCCTTCCTGNAGA
GATCCTCANCAAGCGTGCTGATGTCCTTGAAAAGACCACTATGGAAATGGGGATATATTA
TCAGGCCAGGGGGCAGAAGGGACA

Restriction Sites: Please inquire

ACCN: NM_006258

Insert Size: 4700 bp

OTI Disclaimer: Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).

Components: 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).

Reconstitution Method:
1. Centrifuge at 5,000xg for 5min.
2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
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.

RefSeq: NM_006258.1, NP_006249.1

RefSeq Size: 3740 bp

RefSeq ORF: 2061 bp

Locus ID: 5592

UniProt ID: Q13976

Cytogenetics: 10q11.23-q21.1

Domains: cNMP, pkinase, S_TK_X, TyrKc, S_TKc

Protein Families: Druggable Genome, Protein Kinase

Protein Pathways: Gap junction, Long-term depression, Olfactory transduction, Vascular smooth muscle contraction

Gene Summary: Mammals have three different isoforms of cyclic GMP-dependent protein kinase (Ialpha, Ibeta, and II). These PRKG isoforms act as key mediators of the nitric oxide/cGMP signaling pathway and are important components of many signal transduction processes in diverse cell types. This PRKG1 gene on human chromosome 10 encodes the soluble Ialpha and Ibeta isoforms of PRKG by alternative transcript splicing. A separate gene on human chromosome 4, PRKG2, encodes the membrane-bound PRKG isoform II. The PRKG1 proteins play a central role in regulating cardiovascular and neuronal functions in addition to relaxing smooth muscle tone, preventing platelet aggregation, and modulating cell growth. This gene is most strongly expressed in all types of smooth muscle, platelets, cerebellar Purkinje cells, hippocampal neurons, and the lateral amygdala. Isoforms Ialpha and Ibeta have identical cGMP-binding and catalytic domains but differ in their leucine/isoleucine zipper and autoinhibitory sequences and therefore differ in their dimerization substrates and kinase enzyme activity. [provided by RefSeq, Sep 2011]
Transcript Variant: This variant (2) uses an alternate exon at its 5' end which result in the use of a distinct translation initiation site, compared to variant 1. This difference results in an isoform (2; also known as beta or 1beta) with a longer and distinct N-terminus, compared to isoform 1.