

Product datasheet for **RC401274**

Glucokinase (GCK) (NM_000162) Human Mutant ORF Clone

Product data:

Product Type:	Mutant ORF Clones
Product Name:	Glucokinase (GCK) (NM_000162) Human Mutant ORF Clone
Mutation Description:	C233R
Affected Codon#:	233
Affected NT#:	697
Nucleotide Mutation:	GCK Mutant (C233R), Myc-DDK-tagged ORF clone of Homo sapiens glucokinase (hexokinase 4) (GCK), transcript variant 1 as transfection-ready DNA
Effect:	Diabetes, MODY
Symbol:	GCK
Synonyms:	FGQTL3; GK; GLK; HHF3; HK4; HKIV; HXKP; LGLK; MODY2; PNDM1
E. coli Selection:	Kanamycin (25 ug/mL)
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
Tag:	Myc-DDK
ACCN:	NM_000162
ORF Size:	1395 bp
Restriction Sites:	Sgfl-Mlul



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ORF Nucleotide Sequence:

>RC401274 representing NM_000162
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGGATCGCC**

ATGCTGGACGACAGCCAGGATGGAGGCCCAAGAAGGAGAAGGTAGAGCAGATCCTGGCAGAGTTCC
 AGCTGCAGGAGGAGACCTGAAGAAGGTGATGAGACGGATGCAGAAGGAGATGGACCGCGCCTGAGGCT
 GGAGACCCATGAAGAGGCCAGTGTGAAGATGCTGCCACCTACGTGCGCTCCACCCAGAAAGGCTCAGAA
 GTCGGGGACTTCTCTCCCTGGACCTGGGTGGCACTAACTTCAGGGTGTGCTGGTGAAGGTGGGAGAAG
 GTGAGGAGGGCAGTGGAGCGTGAAGACCAAACACCAGATGTACTCCATCCCGAGGACGCCATGACCGG
 CACTGCTGAGATGCTCTCGACTACATCTCTGAGTGCATCTCCGACTTCTGGACAAGCATCAGATGAAA
 CACAAGAAGCTGCCCTGGGCTTCACTTCTCCTTTCTGTGAGGCACGAAGACATCGATAAGGGCATCC
 TTCTCAACTGGACCAAGGGCTTCAAGGCCTCAGGAGCAGAAGGGAACAATGTCGTGGGGCTTCTGCGAGA
 CGCTATCAAACGGAGAGGGGACTTTGAAATGGATGTGGTGGCAATGGTGAATGACACGGTGGCCACGATG
 ATCTCCTGCTACTACGAAGACCATCAGTGCAGGTCGGCATGATCGTGGGCACGGGCTGCAATGCCCGCT
 ACATGGAGGAGATGCAGAATGTGGAGCTGGTGGAGGGGACGAGGGCCGATGTGCGTCAATACCGAGTG
 GGGCGCCTTCGGGACTCCGGCGAGCTGGACGAGTTCTGCTGGAGTATGACCGCCTGGTGGACGAGAGC
 TCTGCAAACCCGGTCAGCAGCTGTATGAGAAGCTCATAGGTGGCAAGTACATGGGCGAGCTGGTGGCGC
 TTGTGCTGCTCAGGCTCGTGGACGAAAACCTGCTCTCCACGGGGAGGGCTCCGAGCAGCTGCGCACACG
 CGGAGCCTTCGAGACGCGCTTCGTGTCGAGGTGGAGAGCGACACGGGCGACCGCAAGCAGATCTACAAC
 ATCCTGAGCACGCTGGGGCTGCGACCTCGACCACCGACTGCGACATCGTGGCCGCGCTGCGAGAGCG
 TGTCTACGCGCGCTGCGCACATGTGCTCGCGGGGCTGGCGGGGCTCATCAACCGCATGCGCGAGAGCCG
 CAGCGAGGACGTAAATGCCATCACTGTGGCGTGGATGGCTCCGTGTACAAGCTGCACCCAGCTTCAAG
 GAGCGGTTCCATGCCAGCTGCCAGGCTGACGCCAGCTGCGAGATCACCTTATCGAGTGGAGGAGG
 GCAGTGGCCGGGGCGCGGCCCTGGTCTCGCGGTGGCCTGTAAGAAGGCCTGTATGCTGGCCAG

AG**CGGACCG**ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC
 TGGATTACAAGGATGACGACGA TAAGGTTTAA

Protein Sequence:

>RC401274 representing NM_000162
 Red=Cloning site Green=Tags(s)

MLDDRARMEAAKKEKVEQILAEFQLQEEDLKKVMRRMQKEMDRGLRLETHEEASVKMLPTYVVRSTPEGSE
 VGDFLSLDLGGTNFRVMLVKVGEEGQWSVKTKHQMYSIPEDAMTGTAEMLFDYISECISDFLDKHQMK
 HKKLPLGFTFSFPVRHEDIDKGILLNWTGFKASGAEGNNVGLLRDAIKRRGDFEMDVVAMVNDTVATM
 ISCYYEDHQCEVGMIVGTGCNARYMEEMQNVELVEGDEGRMCVNTIEWGAFGDSGELDEFLLLEYDRLVDES
 SANPGQQLYEKLIGGKYMGEVRLVLLRLVDENLLFHGEASEQLRTRGAFETRFVSQVESDTGDRKQIYN
 ILSTLGLRPSTTDCDIVRRACESVSTRAAHMCSAGLAGVINRMRESRSEDVMRITVGVDSVYKLGHPK
 ERFHASVRRLLTPSCEITFIESEEGSGRGAALVSAVACKKACMLGQ

SGPTRRRLE**QKLI**SEEDLAANDILDYKDDDDK**V**

Restriction Sites:

SgfI-MluI

Gene Summary:

This gene encodes a member of the hexokinase family of proteins. Hexokinases phosphorylate glucose to produce glucose-6-phosphate, the first step in most glucose metabolism pathways. In contrast to other forms of hexokinase, this enzyme is not inhibited by its product glucose-6-phosphate but remains active while glucose is abundant. The use of multiple promoters and alternative splicing of this gene result in distinct protein isoforms that exhibit tissue-specific expression in the pancreas and liver. In the pancreas, this enzyme plays a role in glucose-stimulated insulin secretion, while in the liver, this enzyme is important in glucose uptake and conversion to glycogen. Mutations in this gene that alter enzyme activity have been associated with multiple types of diabetes and hyperinsulinemic hypoglycemia. [provided by RefSeq, Aug 2017]