

Product datasheet for **RC401220**

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:	G175E
Affected Codon#:	175
Affected NT#:	524
Nucleotide Mutation:	GCK Mutant (G175E), 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:

>RC401220 representing NM_000162
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGGATCGCC**

ATGCTGGACGACAGACCAGGATGGAGGCCCAAGAAGGAGAAGGTAGAGCAGATCCTGGCAGAGTTCC
 AGCTGCAGGAGGAGACCTGAAGAAGGTGATGAGACGGATGCAGAAGGAGATGGACCGCGCCTGAGGCT
 GGAGACCCATGAAGAGGCCAGTGTGAAGATGCTGCCACCTACGTGCGCTCCACCCAGAAAGGCTCAGAA
 GTCGGGGACTTCTCTCCCTGGACCTGGGTGGCACTAACTTCAGGGTGTGCTGGTGAAGGTGGGAGAAG
 GTGAGGAGGGCAGTGGAGCGTGAAGACCAAACACCAGATGTACTCCATCCCGAGGACGCCATGACCGG
 CACTGTGAGATGCTCTCGACTACATCTCTGAGTGCATCTCCGACTTCTGGACAAGCATCAGATGAAA
 CACAAGAAGCTGCCCTGGGCTTCACTTCTCCTTTCTGTGAGGCACGAAGACATCGATAAGGGCATCC
 TTCTCAACTGGACCAAGGGCTTCAAGGCCTCAGAAGCAGAAGGGAACAATGTCGTGGGGCTTCTGCGAGA
 CGCTATCAAACGGAGAGGGGACTTTGAAATGGATGTGGTGGCAATGGTGAATGACACGGTGGCCACGATG
 ATCTCCTGCTACTACGAAGACCATCAGTGCAGGTCGGCATGATCGTGGGCACGGGCTGCAATGCCTGCT
 ACATGGAGGAGATGCAGAATGTGGAGCTGGTGGAGGGGACGAGGGCCGATGTGCGTCAATACCGAGTG
 GGGCGCCTTCGGGACTCCGGCGAGCTGGACGAGTTCTGCTGGAGTATGACCGCCTGGTGGACGAGAGC
 TCTGCAAACCCGGTCAGCAGCTGTATGAGAAGCTCATAGGTGGCAAGTACATGGGCGAGCTGGTGGCGC
 TTGTGCTGCTCAGGCTCGTGACGAAAACCTGCTCTTCCACGGGGAGGCTCCGAGCAGCTGCGCACACG
 CGGAGCCTTCGAGACGCGCTTCTGTGCGAGGTGGAGAGCGACACGGGCGACCGCAAGCAGATCTACAAC
 ATCTGAGCAGCTGGGGCTGCGACCTCGACCACCGACTGCGACATCGTGCAGCGCCTGCGAGAGCG
 TGTCTACGCGCGCTGCGCACATGTGCTCGCGGGGCTGGCGGGGCTCATCAACCGCATGCGCGAGAGCCG
 CAGCGAGGACGTAATGCCATCACTGTGGCGTGGATGGCTCCGTGTACAAGCTGCACCCAGCTTCAAG
 GAGCGGTTCCATGCCAGCTGCCAGGCTGACGCCAGCTGCGAGATCACCTTATCGAGTGGAGGAGG
 GCAGTGGCCGGGCGCGGCCCTGGTCTCGCGGTGGCCTGTAAGAAGGCCTGTATGCTGGCCAG

AG**CGGACCG**ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC
 TGGATTACAAGGATGACGACGA TAAGGTTTAA

Protein Sequence:

>RC401220 representing NM_000162
 Red=Cloning site Green=Tags(s)

MLDDRARMEAAKKEKVEQILAEFQLQEEDLKKVMRRMQKEMDRGLRLETHEEASVKMLPTYVVRSTPEGSE
 VGDFLSLDLGGTNFRVMLVKVGEEGQWSVKTKHQMYSIPEDAMTGTAEMLFDYISECISDFLDKHQMK
 HKKLPLGFTFSFPVRHEDIDKGILLNWTGFKASEAEGNNVVGLLRDAIKRRGDFEMDVVAMVNDTVATM
 ISCYYEDHQCEVGMIVGTGCNACYMEEMQNVELVEGDEGRMCVNTWGFAGDSGELDEFLLLEYDRLVDES
 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]