

## Product datasheet for **RC401178**

### 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:	v101M
Affected Codon#:	101
Affected NT#:	301
Nucleotide Mutation:	GCK Mutant (v101M), 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:**

>RC401178 representing NM\_000162  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGGATCGCC**

ATGCTGGACGACAGACCAGGATGGAGGCCCAAGAAGGAGAAGGTAGAGCAGATCCTGGCAGAGTTCC  
 AGCTGCAGGAGGAGACCTGAAGAAGGTGATGAGACGGATGCAGAAGGAGATGGACCGCGCCTGAGGCT  
 GGAGACCCATGAAGAGGCCAGTGTGAAGATGCTGCCACCTACGTGCGCTCCACCCAGAAAGGCTCAGAA  
 GTCGGGGACTTCTCTCCCTGGACCTGGGTGGCACTAACTTCAGGGTGTGCTGGTGAAGGTGGGAGAAG  
 GTGAGGAGGGCAGTGGAGCATGAAGACCAAACACCAGATGTACTCCATCCCGAGGACGCCATGACCGG  
 CACTGCTGAGATGCTCTCGACTACATCTCTGAGTGCATCTCCGACTTCTGGACAAGCATCAGATGAAA  
 CACAAGAAGCTGCCCTGGGCTTCACTTCTCCTTTCTGTGAGGCACGAAGACATCGATAAGGGCATCC  
 TTCTCAACTGGACCAAGGGCTTCAAGGCCTCAGGAGCAGAAGGGAACAATGTCGTGGGGCTTCTGCGAGA  
 CGCTATCAAACGGAGAGGGGACTTTGAAATGGATGTGGTGGCAATGGTGAATGACACGGTGGCCACGATG  
 ATCTCCTGCTACTACGAAGACCATCAGTGCAGGTCGGCATGATCGTGGGCACGGGCTGCAATGCCTGCT  
 ACATGGAGGAGATGCAGAATGTGGAGCTGGTGGAGGGGACGAGGGCCGATGTGCGTCAATACCGAGTG  
 GGGCGCCTTCGGGACTCCGGCGAGCTGGACGAGTTCTGCTGGAGTATGACCGCCTGGTGGACGAGAGC  
 TCTGCAAACCCCGGTCAGCAGCTGTATGAGAAGCTCATAGGTGGCAAGTACATGGGCGAGCTGGTGGCGC  
 TTGTGCTGCTCAGGCTCGTGACGAAAACCTGCTCTTCCACGGGGAGGCTCCGAGCAGCTGCGCACACG  
 CGGAGCCTTCGAGACGCGCTTCTGTGCGAGGTGGAGAGCGACACGGGCGACCGCAAGCAGATCTACAAC  
 ATCCTGAGCAGCTGGGGCTGCGACCTCGACCACCGACTGCGACATCGTGCAGCGCCTGCGAGAGCG  
 TGTCTACGCGCGCTGCGCACATGTGCTCGCGGGGCTGGCGGGGCTCATCAACCGCATGCGCGAGAGCCG  
 CAGCGAGGACGTAATGCCATCACTGTGGCGTGGATGGCTCCGTGTACAAGCTGCACCCAGCTTCAAG  
 GAGCGGTTCCATGCCAGCTGCCAGGCTGACGCCAGCTGCGAGATCACCTTATCGAGTGGAGGAGG  
 GCAGTGGCCGGGCGCGGCCCTGGTCTCGCGGTGGCCTGTAAGAAGGCCTGTATGCTGGCCAG

AG**CGGACCG**ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC  
 TGGATTACAAGGATGACGACGA TAAGGTTTAA

**Protein Sequence:**

>RC401178 representing NM\_000162  
 Red=Cloning site Green=Tags(s)

MLDDRARMEAAKKEKVEQILAEFQLQEEDLKKVMRRMQKEMDRGLRLETHEEASVKMLPTYVVRSTPEGSE  
 VGDFLSLDLGGTNFRVMLVKVGEEGQWSMKTQHMYIPEDAMTGTAEMLFDYISECISDFLDKHQMK  
 HKKLPLGFTFSFPVRHEDIDKGILLNWTGFKASGAEGNNVGLLRDAIKRRGDFEMDVVAMVNDTVATM  
 ISCYYEDHQCEVGMIVGTGCNACYMEEMQNVELVEGDEGRMCVNTWGFAGDSGELDEFLLLEYDRLVDES  
 SANPGQQLYEKLIGGKYMGEVRLVLLRLVDENLLFHGEASEQLRTRGAFETRFVSQVESDTGDRKQIYN  
 ILSTLGLRPSTTDCDIVRRACESVSTRAAHMCSAGLAGVINRMRESRSEDVMRITVGVDSVYKLGHPK  
 ERFHASVRRLLTPSCEITFIESEEGSGRGAALVSAVACKKACMLGQ

**SGP**TRRRLE**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]