

Product datasheet for **RC401338**

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:	R358X
Affected Codon#:	358
Affected NT#:	1072
Nucleotide Mutation:	GCK Mutant (R358X), Myc-DDK-tagged ORF clone of Homo sapiens glucokinase (hexokinase 4) (GCK), transcript variant 1 as transfection-ready DNA
Effect:	Diabetes, MODY2
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:	1071 bp
Restriction Sites:	Sgfl-MluI



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ORF Nucleotide Sequence:

>RC401338 representing NM_000162
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**GCGATCGCC**

ATGCTGGACGACAGACCAGGATGGAGGCCCAAGAAGGAGAAGGTAGAGCAGATCCTGGCAGAGTTCC
 AGCTGCAGGAGGAGACCTGAAGAAGGTGATGAGACGGATGCAGAAGGAGATGGACCGCGCCTGAGGCT
 GGAGACCCATGAAGAGGCCAGTGTGAAGATGCTGCCACCTACGTGCGCTCCACCCAGAAAGGCTCAGAA
 GTCGGGGACTTCTCTCCCTGGACCTGGGTGGCACTAACTTCAGGGTGTGCTGGTGAAGGTGGGAGAAG
 GTGAGGAGGGCAGTGGAGCGTGAAGACCAAACACCAGATGTAATCCATCCCGAGGACGCCATGACCGG
 CACTGCTGAGATGCTCTCGACTACATCTCTGAGTGCATCTCCGACTTCTGGACAAGCATCAGATGAAA
 CACAAGAAGCTGCCCTGGCTTCACTTCTCCTTTCTGTGAGGCACGAAGACATCGATAAGGGCATCC
 TTCTCAACTGGACCAAGGGCTTCAAGGCCTCAGGAGCAGAAGGGAACAATGTCGTGGGGCTTCTGCGAGA
 CGCTATCAAACGGAGAGGGGACTTTGAAATGGATGTGGTGGCAATGGTGAATGACACGGTGGCCACGATG
 ATCTCCTGCTACTACGAAGACCATCAGTGCAGGTCGGCATGATCGTGGGCACGGCTGCAATGCCTGCT
 ACATGGAGGAGATGCAGAATGTGGAGCTGGTGGAGGGGACGAGGGCCGATGTGCGTCAATACCGAGTG
 GGGCGCCTTCGGGACTCCGGCGAGCTGGACGAGTTCTGCTGGAGTATGACCGCCTGGTGGACGAGAGC
 TCTGCAAACCCGGTCAGCAGCTGTATGAGAAGCTCATAGGTGGCAAGTACATGGGCGAGCTGGTGGCGG
 TTGTGCTGCTCAGGCTCGTGGACGAAAACCTGCTCTTCCACGGGGAGGCCTCCGAGCAGCTGCGCACAG
 CGGAGCCTTCGAGACGCGCTTCGTGTCGAGGTGGAGAGCGACACGGGCGACCGCAAGCAGATCTACAAC
 ATCCTGAGCACGCTGGGGCTG

AG**GCGACCG**ACGCGTACGCGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC
 TGGATTACAAGGATGACGACGA TAAGGTTTAA

Protein Sequence:

>RC401338 representing NM_000162
 Red=Cloning site Green=Tags(s)

MLDDRARMEAAKKEKVEQILAEFQLQEEDLKKVMRRMQKEMDRGLRLETHEEASVKMLPTYVVRSTPEGSE
 VGDFLSLDLGGTNFRVMLVKVGEEGQWSVKTKHQMYSIPEDAMTGTAEMLFDYISECISDFLDKHQMK
 HKKLPLGFTFSFPVRHEDIDKGILLNWTGFKASGAEGNNVVGLLRDAIKRRGDFEMDVVAMVNDTVATM
 ISCYIEDHQCEVGMIVGTGCNACymeemQnVEL VEGDEGRMCVnTEWGAFGDSGELDEFLLYDRLVDES
 SANPGQQLYEKLIGGKYMGEVLVRLVLLRLVDENLLFHGEASEQLRTRGAFETRFVSQVESDTRDRKQIYN
 ILSTLGL

SGPTRRRRLEQKLISEEDLAANDILDYKDDDDKV

Restriction Sites:

Sgfl-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]